

# FAITH AND SCIENCE

A vibrant space scene featuring a large ringed planet (Saturn) in the center, surrounded by other planets, moons, and a colorful nebula in the background. The scene is set against a dark blue and purple starry sky. The Saturn-like planet has prominent rings and is the central focus. To its left, a smaller ringed planet is visible. To its right, a reddish planet is seen. In the foreground, a bright blue and white horizon line suggests the edge of Earth or another planet. The overall composition is dynamic and colorful, with a mix of blues, purples, oranges, and reds.

STEVE HAYS

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## **Preface**

Writing about the relationship between science and the Christian faith poses a dilemma. That's because science is unstable and unpredictable. While some scientific theories and discoveries are well-established, there are often reversals in scientific understanding, so that it can be treacherous to rely too much on scientific arguments that are apt to be out-of-date in a few years. That's one reason I incline to philosophical arguments.

Another complication is that when people talk about "science," what they often have in mind isn't the raw evidence but evidence filtered through the sieve of methodological atheism. Where teleology is ruled out. Where intervention by personal agents and mental causation is ruled out. Treating the process as a closed continuum of physical cause and effect.

Since, however, Bible history doesn't claim to be a closed system, that screens Bible history through an extraneous, artificial grid. And it's not just due to the Biblical viewpoint, as if the world of the Bible stands in tension to the "real" world outside the Bible. For supernaturalism isn't confined to the pages of Scripture.

For the record, I incline to old-earth creationism although I think mature creation must be true to some degree by virtue of creation ex nihilo. I reject theistic evolution. I think Adam and Eve were the first human breeding pair. All extant humans derive from them. Adam and Eve were the product of special creation.

Although I incline to a local flood interpretation, criticisms of the global flood interpretation are typically confused by using modern geography as the frame of reference, which is

anachronistic in relation to the historical horizon of the original audience.

There's some overlap between the subject matter of this book, my book on **GENESIS**, as well as my book **IN THY LIGHT WE SEE LIGHT**.

It might be asked what qualifications I have to write about science:

**i)** It's true that I no formal training in science. Mind you, science is highly specialized and multidisciplinary, so even trained scientists form scientific opinions outside their field of expertise.

**ii)** I approach scientific issues more philosophically. Scientific expertise doesn't make a scientist a logician or philosophically astute. And much of the debate is driven by methodological atheism.

**iii)** There can be a certain advantage in having the detachment of an outside observer. I'm not subject to peer pressure within the guild.

**iv)** As a Christian I have a duty to believe biblical revelation.

**v)** Of course, Scripture is not the only source of truth, so that can raise harmonistic issues, but I have an obligation to avoid contradicting biblical revelation.

**vi)** I'm fairly well read on both sides of the issue, including textbooks and high-level popularizations, as well as philosophy of science literature.

Indeed, many science books are written for the general public to expose them to the evidence. But this assumes that reader is competent to understand and assess the evidence.

**vii)** On many scientific issues there's a lack of consensus, so the reader must form his own judgments.

# Philosophy of Science

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## Cartesian demons and evolutionary psychology

Responding to some questions I was asked.

Broadly, I'm a presuppositionalist (though I make adjustments, as does everyone).

That's intelligent. Good to be discriminating.

Often I have read modern proponents like Anderson and Oliphint defend the essentially Christian nature of God that must be in place for knowledge to even be possible against other theisms like Islam by pointing to problems in those worldviews. For example, in Islamic sources Allah is capricious.

That's ambiguous. In presuppositionalism, knowledge is possible without belief in God, but the justification of knowledge is impossible without the Christian God. My questioner may intend that, but was speaking laconically.

1) Can a skeptic assert that the Christian is in no better epistemic place than a Muslim as in the Bible God allows people to be deceived (indeed sends deceiving spirits) and, in the case of Nebuchadnezzar in Daniel, robs a man of his reasoning? Can the skeptic take this further and argue the Christian is no better place than he is because just as we assert he can't trust his reasoning faculties because they were formed by random, unthinking processes, we can't trust our because it's always possible we're deceived?

**i)** The thought-experiment is incoherent. The appeal to biblical passages about divine deception presumes that Scripture is true and we know what it means (at least the passages under consideration). If, however, God deceives the reader, then that nullifies the appeal to biblical passages about divine deception, which the thought-experiment requires. If God deceives the reader, then he can't trust what the text appears to say about divine deception. So the argument never gets started. It can't be delusion all the way down.

**ii)** Biblical passages about divine deception refer to a subset of wicked human beings rather than human beings generally. They don't refer to the epistemic situation of Christians.

**iii)** The comparison is disanalogous. The allegation is not the abstract possibility that reasoning faculties formed by random thinking processes may render reason untrustworthy. Rather, that's taken to be an implication of naturalistic evolution. An actual defeater rather than a hypothetical defeater.

2) What if someone decided that all they need is a God who is trustworthy, but not necessarily the Biblical God. I would say those attributes can't be separated from the Biblical God, but what if they countered that perhaps Christianity is the best we have right now, but we might have a better candidate in the future?

Is a God trustworthy who hasn't revealed himself in any recognizable religion, who hides in the shadows while false religions proliferate with no corrective?

## Is Goddidit unfalsifiable?

i) We're living at a time when Christians are under increasing pressure to accommodate the Bible to the scientific establishment. The scientific arguments are complex and often highly technical. And the ground keeps shifting in light of new developments. Here's one way to simplify the debate.

Unbelievers frequently raise two contradictory objections to creationism. I'm using "creationism" loosely, because unbelievers use "creationism" loosely to designate YEC, OEC, intelligent design, and/or the historicity of Gen 1-9.

### **A. Science falsifies creationism**

Take human evolution. Many books and websites say there's overwhelming evidence for human evolution. Creationism has been falsified by multiple lines of evidence from comparative anatomy, comparative genomics, and the fossil record.

Obviously, this triumphalist claim hasn't gone unchallenged by creationists. Indeed, sometimes you have skeptics of the standard evolutionary paradigm within secular scientific establishment itself.

However, that's well-trodden ground. What is more striking is to compare this objection with the next objection:

### **B. Creationism is unfalsifiable**

Let's quote a few representative examples:

Moreover, that materialism is absolute, for we cannot allow a Divine Foot in the door. The eminent Kant scholar Lewis Beck used to say that anyone who could believe in God could believe in anything. To appeal to an omnipotent deity is to allow that at any moment the regularities of nature may be ruptured, that miracles may happen.

[http://www.drjbloom.com/Public%20files/Lewontin\\_Review.htm](http://www.drjbloom.com/Public%20files/Lewontin_Review.htm)

The appeal to supernatural forces, whether divine or occult, is always available because we can cite no necessary constraints upon the powers of supernatural agents. This is just the picture of God that Johnson presents. He says that God could create out of nothing or use evolution if He wanted (JDT p. 14, 113); God is "omnipotent" (JDT p. 113). He says God creates in the "furtherance of a purpose" (JDT p. 4), but that God's purposes are "inscrutable" (JDT p. 71) and "mysterious" (JDT p. 67). A god that is all-powerful and whose will is inscrutable may be called upon to explain any event in any situation, and this is one reason for the methodological prohibition against such appeals in science. Because of this feature, supernatural hypotheses remain immune from disconfirmation.

It is not that supernatural agents and powers could not explain in principle, it is rather that they can explain all too easily. As such we may think of them as the explanation of last resort, since, like the Greek god in the machine, they can always be hauled down to "save the day" if every other explanation fails.

[https://www.msu.edu/~pennock5/research/papers/Pennock\\_SupNatExpl.html](https://www.msu.edu/~pennock5/research/papers/Pennock_SupNatExpl.html)

Nye's position relies upon the scientific method, summarized by the phrase "evidential evaluation of falsifiable hypotheses." In other words, science aims to disconfirm its hypotheses and uses evidence to do so. This

falsification process is a powerful way to eliminate bad ideas, and nothing proves an idea false better than its disagreement with reality...By contrast, faith—and theology more broadly—does not possess or employ a mechanism for falsification and appears only incidentally interested in observation.

<https://richarddawkins.net/2014/01/creationism-faith-and-legitimizing-bad-ideas/>

The basic contention here is that science requires an unbroken chain of physical cause and effect. But once you make allowance for an omnipotent, interventionist God, a God who can instantly bypass natural processes to produce a physical effect apart from antecedent condition, then creationism is unfalsifiable—for anything in nature, anything pattern of evidence is explicable by appeal to this Deus ex machina. It severs the links in the chain of cause and effect, past and present.

**ii)** Now, what's interesting about B is that it cancels A. These two objections can't both be true.

Moreover, these are asymmetrical objections. B can rule out A in a way that A is impotent to rule out B. For if B is true, then nothing counts as evidence for A.

Ironically, this is a secular objection to creationism. But if we take the secular objection seriously, it destroys secular science. In their effort to shoot down creationism, the bullet ricochets on their own position.

Of course, they regard this as an unacceptable consequence of theism. But to claim that theism has this consequence in no way invalidates or undercuts the unwelcome consequence.

In this respect, Christians don't need to produce any evidence to refute A. We don't need to mount our own

independent argument to refute A. We can simply redeploy an argument that secular scientists keep repeating. If, according to secular scientists, methodological naturalism is a necessary presupposition of science, then by their own admission, the existence of an omnipotent interventionist God nullifies all their evidentiary objections to creationism.

That's not some ad hoc argument that Christians concoct to deflect the scientific evidence. Rather, that's a tacit concession which the secular scientists are making. All we need to do is agree with them, thank them for pointing that out, and kindly showing them that their objection backfires.

**iii)** From a theological standpoint, B is fairly overstated. According to Biblical theism, God hasn't made an *Alice in Wonderland* world where effects routinely materialize out of the blue. Every possibility is not a plausibility. To the contrary, Biblical theism has a doctrine of ordinary providence.

However, that observation does nothing to support A or undermine creationism, for that's a theological restriction. It presumes a theological framework.

**iv)** Finally, if creationism is unfalsifiable, that doesn't make it unverifiable. And that doesn't mean naturalistic evolution is unfalsifiable. Once again, these are asymmetrical positions. Naturalistic evolution can still be falsifiable on its own terms.

By contrast, creationism isn't falsifiable on its own terms—given the limitless explanatory power of an omnipotently resourceful God. Conversely, if some biological events are inexplicable apart from superhuman intelligence, then the evidence selects for theism rather than naturalism.

## Law and miracle

Debates about the scientific status of miracles have been going on for a long time, and often involve competing paradigms of natural law. For instance:

In his classic **ADVENTURES OF IDEAS** (140-59), A. N.

Whitehead describes two contrasting views of nature's laws as they obtained in much of the seventeenth and eighteenth centuries:

(1) *Theological voluntarism* is the metaphysical idea that an omnipotent God endowed matter and nature with principles of motion that are passive and therefore completely dependent on God's volition; that since the properties of matter (atoms) are extension, impenetrability, and inertia, the motion of matter originates in God, the prime mover; that an active principle sustains motion and activity in nature by counteracting resistance; that this active principle is the source of gravity; finally, that the causes or laws of nature are therefore superimposed from the outside and are completely dependent on an omnipotent deity, who can abrogate or suspend these natural laws at will (miracles) to modify their course.

(2) *Immanence* is the view that activity and motion are inherent principles in matter and nature, that all movement in nature is governed by autonomous laws that constitute the interdependence of all activity in nature; that these immanent laws are so embedded in the structure of nature that they cannot be disrupted, that any disruption of the laws of nature (miracles) is impossible because it contradicts the principles of

reason, order, and perfection—the attributes of God. Essentially voluntaristic, Newtonianism gave way in the eighteenth century to the view of immanent activity in nature that was essentially mechanistic, which is to say Cartesian. For according to Rene Decartes, the laws of nature were decreed by God and are—like his volition—immutable and universally efficient. That is why miracles contradicted God's immutable will—unless (perhaps) they were embedded in God's grand scheme from the beginning.

Cotton Mather's **BIBLIA AMERICANA: AMERICA'S FIRST BIBLE COMMENTARY, A SYNOPTIC COMMENTARY ON THE OLD AND NEW TESTAMENTS. VOL. 1: GENESIS.** Edited with an Introduction and Annotations by Reiner Smolinski (Mohr Siebeck and Baker Academic, 2010), 85-86n22.



## Naturalism as a working principle

Sometimes we can test a hypothesis by direct observation, but more often we do not see processes or causes directly (for example, electrons, atoms, hydrogen bonds, molecules, and genes are not directly visible, and we cannot watch the occurrence of mutation during DNA replication). Rather we infer such processes by comparing the outcome of observations or experiments with predictions made from competing hypotheses. In order to make such inferences, we must assume that the processes obey natural laws. D. Futuyma, **EVOLUTION** (Sinaur 2005), 526.

One problem with his stipulation is that his characterization is anthropomorphic: "processes obey natural laws." That conjures up the image of one agent giving orders to another agent, and enforcing his order at gunpoint. "I command you! Obey—or else!"

Is he consciously using a metaphor? If so, what's his literal substitution?

On the face of it, aren't natural laws just inductive generalizations? They don't make things happen.

In order to make such inferences, we must assume that the processes obey natural laws: statements that certain patterns of events will always occur in certain conditions hold...Because supernatural events or agents are supposed to suspend or violate natural laws, science cannot infer anything about them, and indeed, cannot judge the validity of any hypotheses that involve them.

Science must therefore adopt the position that natural causes are responsible for whatever we wish to explain about the natural world...it is a commitment to methodological naturalism (the *working principle* that we can entertain only natural causes when we seek scientific explanations), *ibid.* 526-27.

The way he defines methodological naturalism leaves things open to supernatural causation. He says "certain patterns of events will always occur in certain conditions hold." But on that definition, fiat creationism, progressive creationism, and intelligent design theory are all compatible with methodological naturalism. None of them denies that the same types of causes yield the same types of effects. If, instead of automatic processes, God directly causes something to happen, or "loads the dice," you have a different outcome because the initial condition is different. Divine agency introduces a different initial condition. It's not same cause, different effect—or different cause, same effect. Rather, it's different cause, different effect.

Likewise, God can work through natural causes. He can prearrange events to yield a particular outcome at a particular time and place. In principle, the destruction of Sodom and Gomorrah could employ purely natural mechanisms.

# The tortoise and the hare

## I. The scientific method

David Berlinski once said:

Where science has a method, it is trivial – look carefully, cut the cards, weigh the evidence, don't let yourself be fooled, do an experiment if you can. These are principles of kennel management as well as quantum theory. Where science isn't trivial, it has no method. What method did Einstein follow, or Pauli, or Kekulé? Kekulé saw the ring structure of benzene in what he called a waking dream. Some method.

My real view is that there is only one science, and that is mathematics, and that the physical sciences are really forms of experimental mathematics. The idea that there is out there a physical world which just happens to lend itself to mathematical description has always seemed to me to be incoherent. There is only one world – the universe, in fact, and it has the essential properties of a mathematical model. For reasons that we cannot even begin to understand, that model interacts with our senses, and so without measuring devices, allowing us to pretty much confirm conclusions antecedently reached by pure thought.

<https://docs.google.com/document/d/1GWum5O7pSIFVu8V5P5HciOnVxbSI5Jg67ZRwf1IZAGo/edit?pli=1>

This claim is worth exploring. For one thing, questions of scientific method crop up in debates over the relation between theology and science. Do theological claims violate the scientific method? *Is there a scientific method?*

It's easy to find statements of the scientific method on the Internet. According to one source:

The scientific method has four steps

1. Observation and description of a phenomenon or group of phenomena.
2. Formulation of an hypothesis to explain the phenomena. In physics, the hypothesis often takes the form of a causal mechanism or a mathematical relation.
3. Use of the hypothesis to predict the existence of other phenomena, or to predict quantitatively the results of new observations.
4. Performance of experimental tests of the predictions by several independent experimenters and properly performed experiments.

[http://teacher.nsrj.rochester.edu/phy\\_labs/appendix/appendix.html](http://teacher.nsrj.rochester.edu/phy_labs/appendix/appendix.html)

Sounds very straightforward and uncontroversial. But if you study works on the philosophy of science, that summary proves to be deceptively simple and overly confident. If you consult Gary Gutting's entry on "Scientific Methodology" in the Blackwell **COMPANION TO THE PHILOSOPHY OF SCIENCE**, the scientific method is very much up for grabs.

## **II. The Divine foot in the door**

One reason debates over scientific methodology are significant is that atheists like to invoke "the scientific method" to preemptively disqualify theological claims. In a refreshing moment of candor, one exponent famously or infamously admitted that:

Our willingness to accept scientific claims that are against common sense is the key to an understanding of the real struggle between science and the

supernatural. We take the side of science *in spite* of the patent absurdity of some of its constructs, *in spite* of its failure to fulfill many of its extravagant promises of health and life, *in spite* of the tolerance of the scientific community for unsubstantiated just-so stories, because we have a prior commitment, a commitment to materialism. It is not that the methods and institutions of science somehow compel us to accept a material explanation of the phenomenal world, but, on the contrary, that we are forced by our *a priori* adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counter-intuitive, no matter how mystifying to the uninitiated. Moreover, that materialism is absolute, for we cannot allow a Divine Foot in the door. The eminent Kant scholar Lewis Beck used to say that anyone who could believe in God could believe in anything. To appeal to an omnipotent deity is to allow that at any moment the regularities of nature may be ruptured, that miracles may happen.

[http://www.drjbloom.com/Public%20files/Lewontin\\_Review.htm](http://www.drjbloom.com/Public%20files/Lewontin_Review.htm)

Lewontin is half right. Admitting the possibility of miracles, admitting the existence of an interventionist God, introduces an element of unpredictability into science. That's because personal agents exercise rational discretion, unlike inanimate natural process which are uniform—absent interference from an outside agent.

If, however, science is a quest for a true description or true explanation of natural events, and if an interventionist God does, indeed, exist, then like it or not, scientists have no

choice but to bend to reality, however unwelcome that may be.

In addition, Lewontin overstates his case. Granting God's existence doesn't have the destabilizing consequences he imagines. God is not a gremlin who tampers with laboratory experiments to throw off the results. Christian theology typically has a strong doctrine of providence.

### **III. The tortoise and the hare**

Is there a scientific method? One difficulty is the diversity of science. Given all the different branches of science, is there one method that captures what every scientific discipline does?

But another difficulty is the difference between two different kinds of scientists. On the one hand you have the plodders. They are patient observers and chroniclers of nature. They conduct tedious experiments. They proceed in steps.

This is not to be disdained. It produces a lot of useful science. It's how most scientific practitioners must proceed—given their intellectual limitations.

On the other hand, the greatest scientific minds tend to proceed in skips. They have flashes of insight. Physical intuition. They resort to analogies and thought-experiments. They have no method. They can't be emulated. Darwin was a tortoise to von Neumann's hare. Edison was a tortoise to Feynman's hare. To take some examples:

During my stay in London I resided in Clapham Road....I frequently, however, spent my evenings with my friend Hugo Mueller....We talked of many things but most often of our beloved chemistry. One fine summer evening I was returning by the last bus, riding outside as usual, through the deserted streets of the city....I fell into a reverie, and lo, the atoms were gamboling

before my eyes. Whenever, hitherto, these diminutive beings had appeared to me, they had always been in motion. Now, however, I saw how, frequently, two smaller atoms united to form a pair: how a larger one embraced the two smaller ones; how still larger ones kept hold of three or even four of the smaller: whilst the whole kept whirling in a giddy dance. I saw how the larger ones formed a chain, dragging the smaller ones after them but only at the ends of the chains....The cry of the conductor: "Clapham Road," awakened me from my dreaming; but I spent a part of the night in putting on paper at least sketches of these dream forms. This was the origin of the "Structural Theory.(6)

During my stay in Ghent, I lived in elegant bachelor quarters in the main thoroughfare. My study, however, faced a narrow side-alley and no daylight penetrated it....I was sitting writing on my textbook, but the work did not progress; my thoughts were elsewhere. I turned my chair to the fire and dozed. Again the atoms were gamboling before my eyes. This time the smaller groups kept modestly in the background. My mental eye, rendered more acute by the repeated visions of the kind, could now distinguish larger structures of manifold conformation; long rows sometimes more closely fitted together all twining and twisting in snake-like motion. But look! What was that? One of the snakes had seized hold of its own tail, and the form whirled mockingly before my eyes. As if by a flash of lightning I awoke; and this time also I spent the rest of the night in working out the consequences of the hypothesis. (6)

<http://dwb4.unl.edu/Chem/CHEM869E/CHEM869ELinks/www.woodrow.org/teachers/ci/1992/Kekule.html>

Over the next year Pauli recorded a series of his dreams which culminated in a vision of the world clock, a dream of the most subtle harmony.

Pauli's world clock had revolved upon an axis which was both part of the movement and yet stationary. This axis was a speculum, a mirror that stood between two worlds reflecting one into the other. This speculum also entered into the essence of Pauli's approach to physics. For the speculum can also be taken as the mathematical mirror which generates symmetry, whereby its abstract operations reflect quantum states or elementary particles, one into the other.

<http://www.f davidpeat.com/bibliography/essays/divine.htm>

Linus Pauling was lying in bed with a cold when he managed to build accurate models of protein structure, largely based on his unmatched feel for such numbers. And every chemist can learn from the incomparable intuition of Enrico Fermi who tossed pieces of paper in the air when the first atomic bomb went off, and used the distance at which they fell to calculate a crude estimate of the yield.

<http://blogs.scientificamerican.com/the-curious-wavefunction/2013/05/24/what-is-chemical-intuition/?print=true>

Within a week I was in the cafeteria and some guy, fooling around, throws a plate in the air. As the plate went up in the air I saw it wobble, and I noticed the red medallion of Cornell on the plate going around. It



was pretty obvious to me that the medallion went around faster than the wobbling.

I had nothing to do, so I start to figure out the motion of the rotating plate. I discover that when the angle is very slight, the medallion rotates twice as fast as the wobble rate - two to one [Note: Feynman misremembers here---the factor of 2 is the other way]. It came out of a complicated equation! Then I thought, ``Is there some way I can see in a more fundamental way, by looking at the forces or the dynamics, why it's two to one?"

I don't remember how I did it, but I ultimately worked out what the motion of the mass particles is, and how all the accelerations balance to make it come out two to one.

I went on to work out equations of wobbles. Then I thought about how electron orbits start to move in relativity. Then there's the Dirac Equation in electrodynamics. And then quantum electrodynamics. And before I knew it (it was a very short time) I was ``playing" - working, really - with the same old problem that I loved so much, that I had stopped working on when I went to Los Alamos: my thesis-type problems; all those old-fashioned, wonderful things. It was effortless. It was easy to play with these things. It was like uncorking a bottle: Everything flowed out effortlessly. I almost tried to resist it! There was no importance to what I was doing, but ultimately there was. The diagrams and the whole business that I got the Nobel Prize for came from that piddling around with the wobbling plate.

<http://www.physics.ohio-state.edu/~kilcup/262/feynman.html>

- Salviati: If we take two bodies whose natural speeds are different, it is clear that on uniting

the two, the more rapid one will be partly retarded by the slower, and the slower will be somewhat hastened by the swifter. Do you not agree with me in this opinion?

- Simplicio: You are unquestionably right.
- Salviati: But if this is true, and if a large stone moves with a speed of, say, eight, while a smaller stone moves with a speed of four, then when they are united, the system will move with a speed of less than eight. Yet the two stones tied together make a stone larger than that which before moved with a speed of eight: hence the heavier body now moves with less speed than the lighter, an effect which is contrary to your supposition. Thus you see how, from the assumption that the heavier body moves faster than the lighter one, I can infer that the heavier body moves more slowly...
- And so, Simplicio, we must conclude therefore that large and small bodies move with the same speed, provided only that they are of the same specific gravity.
- [http://www.philosophical-investigations.org/Galileo's Thought Experiments](http://www.philosophical-investigations.org/Galileo's_Thought_Experiments)

Another possible action of the demon is that he can observe the molecules and only open the door if a molecule is approaching the trap door from the right. This would result in all the molecules ending up on the left side. Again this setup can be used to run an

engine. This time one could place a piston in the partition and allow the gas to flow into the piston chamber thereby pushing a rod and producing useful mechanical work. This imaginary situation seemed to contradict the second law of thermodynamics.

<http://www.auburn.edu/~smith01/notes/maxdem.htm>

Newton looked at these two formulas for the distance a cannonball would travel horizontally and vertically, and he noticed that the distance the cannonball would fall in a given time interval  $t$  was constant, since  $a$  is constant. However, the distance the cannonball travels horizontally is dependent on its speed --- something he could control. So, if he changed the speed of the cannonball, he could change its trajectory, as illustrated below

Then Newton realized that if he chose just the right velocity, the trajectory of the cannonball would curve at exactly the same rate the Earth (being spherical) curves, and therefore the cannonball would always stay the same height above the ground. In doing so, he balances the inertia of the cannonball (which makes it want to continue traveling in a straight line, and therefore away from the Earth) against the acceleration due to the Earth's gravity (which pulls the cannonball toward the center of the Earth).

The result is that the cannonball *orbits* the Earth, always accelerating toward the Earth, but never getting any closer. That may sound like a strange statement, but remember acceleration is the change in *velocity*, which is both the speed *and direction* of an object. In this case, the cannonball's direction is changing, and therefore it experiences an acceleration even though its speed doesn't change. (You experience this kind of acceleration when you go around a corner at constant speed in a car.)

Newton figured out that the speed of the cannonball was related to the acceleration due to the Earth's gravity ( $\mathbf{a}$ ) and the radius of the orbit ( $\mathbf{r}$ ; measured from the center of the orbit; i.e., the center of the Earth) as follows:

One cool thing about this relation is that even though Newton figured it out for a cannonball orbiting the Earth, it applies to *any object in circular motion*.

Because of inertia, objects always want to travel in straight lines; in order to make them curve into circular motion, they have to be accelerated somehow. For Newton's cannonball, the Earth provided the acceleration. For a ball on a string, the tension in the string provides the acceleration. For your car going around a corner, the engine, through the tires and the friction between the tires and the road, provide the acceleration. In all cases, the amount of acceleration you'll need is described by the above equation, and is dependent on how fast the object is moving, and how tight a circular path it needs to travel on.

<http://www.eg.bucknell.edu/physics/astronomy/astr101/specials/newtscannon.html>

Now imagine that a (very fast) train is travelling along the track in the direction from A toward B and it so happens that the lightning flashes at A and B hit the ends of the train. The question is: "Do the flashes hit the train simultaneously?" As far as our observer Mike is concerned, as he saw the flashes together the answer must be "yes". If the flashes hit the ends of the train, the ends must have been at A and B at the moments of the flashes. But what of an observer N, Nina, inside the train, let us say at the mid point of the train?

The same definition of simultaneity applies in the train's frame of reference. If the observer sees two

flashes which have travelled equal distances at the same time they must have been simultaneous in that frame of reference.

So, do observers in the train also see the two lightning strokes A and B as simultaneous? Imagine that Nina happens to be opposite Mike, that is, also half way between A and B at the moment the flashes occurred (as determined in the embankment frame). See diagram M1. This is NOT the time at which Mike and Nina see the flashes. They see them a little after this moment when the light reaches them – we need to take into account the 'look-back time', that is, the time taken for light to travel from the flashes to the observer.

For Mike to see the events as simultaneous, the light must have come from A and B and met at his position. Remember that Mike is at rest relative to the embankment. Nina in the train, however, is racing away from A and towards B and so will see the flash from B first (diagram M2) because it will have less distance to travel. Note that we could not take a photo and see what is represented in the diagrams! (The camera only 'sees' the light when it enters the lens.) They must be seen as 'reconstructions' of what must have been. Diagram M3 shows the moment that Mike sees both flashes and diagram M4 shows the moment a little later again when Nina sees the flash from A.

<http://www.vicphysics.org/documents/teachers/unit3/EinsteinsTrainGedanken.pdf>

Isaac Newton conducted an experiment with a bucket containing water which he described in 1689. The experiment is quite simple and any reader of this article can try the experiment for themselves. All one

needs to do is to half fill a bucket with water and suspend it from a fixed point with a rope. Rotate the bucket, twisting the rope more and more. When the rope has taken all the twisting that it can take, hold the bucket steady and let the water settle, then let go. What happens? The bucket starts to rotate because of the twisted rope. At first the water in the bucket does not rotate with the bucket but remains fairly stationary. Its surface remains flat. Slowly, however, the water begins to rotate with the bucket and as it does so the surface of the water becomes concave. Here is Newton's own description:-

*... the surface of the water will at first be flat, as before the bucket began to move; but after that, the bucket by gradually communicating its motion to the water, will make it begin to revolve, and recede little by little from the centre, and ascend up the sides of the bucket, forming itself into a concave figure (as I have experienced), and the swifter the motion becomes, the higher will the water rise, till at last, performing its revolutions in the same time with the vessel, it becomes relatively at rest in it.* Soon the spin of the bucket slows as the rope begins to twist in the opposite direction. The water is now spinning faster than the bucket and its surface remains concave.

What is the problem? Is this not precisely what we would expect to happen? Newton asked the simple question: why does the surface of the water become concave? One is inclined to reply to Newton: that is an easy question - the surface becomes concave since the water is spinning. But after a moment's thought one has to ask what spinning means. It certainly doesn't mean spinning relative to the bucket as is easily seen. After the bucket is released and starts spinning then the water is spinning relative to the bucket yet its surface is flat. When friction between the water and the

sides of the bucket has the two spinning together with no relative motion between them then the water is concave. After the bucket stops and the water goes on spinning relative to the bucket then the surface of the water is concave. Certainly the shape of the surface of the water is not determined by the spin of the water relative to the bucket.

Newton then went a step further with a thought experiment. Try the bucket experiment in empty space. He suggested a slightly different version for this thought experiment. Tie two rocks together with a rope, he suggested, and go into deep space far from the gravitation of the Earth or the sun. One certainly can't physically try this today any more than one could in 1689. Rotate the rope about its centre and it will become taut as the rocks pull outwards. The rocks will create an outward force pulling the rope tight. If one does this in an empty universe then what can it mean for the system to be rotating. There is nothing to measure rotation with respect to. Newton deduced from this thought experiment that there had to be something to measure rotation with respect to, and that something had to be space itself. It was his strongest argument for the idea of absolute space.

Now Newton returned to his bucket experiment. What one means by spin, he claimed, was spin with respect to absolute space. When the water is not rotating with respect to absolute space then its surface is flat but when it spins with respect to absolute space its surface is concave. However he wrote in the *Principia*:-

*I do not define time, space, place, and motion, as they are well known to all. Absolute space by its own nature, without reference to anything external, always remains similar and unmovable.* He was not too happy with this as perhaps one can see from other things he wrote:-

It is indeed a matter of great difficulty to discover and effectually to distinguish the true motions of particular bodies from the apparent, because the parts of that immovable space in which these motions are performed do by no means come under the observations of our senses.

Leibniz, on the other hand, did not believe in absolute space. He argued that space only provided a means of encoding the relation of one object to another. It made no sense to claim that the universe was rotating or moving through space. He supported his argument with philosophical reasoning, but faced with Newton's bucket, he had no answer. He was forced to admit:-

*I grant there is a difference between absolute true motion of a body and a mere relative change of its situation with respect to another body.* For around 200 years Newton's arguments in favour of absolute space were hardly challenged. One person to question Newton was George Berkeley. He claimed that the water became concave not because it was rotating with respect to absolute space but rather because it was rotating with respect to the fixed stars. This did not convince many people that Newton might have been wrong. In 1870 Carl Neumann suggested a similar situation to the bucket when he imagined that the whole universe consisted only of a single planet. He suggested: wouldn't it be shaped like an ellipsoid if it rotated and a sphere if at rest? The first serious challenge to Newton, however, came from Ernst Mach, who rejected Neumann's test as inconclusive. However, he wrote in 1872 in *History and Root of the Principle of the Conservation of Energy*:-

*If we think of the Earth at rest and the other celestial bodies revolving around it, there is no flattening of the Earth ... at least according to our usual conception of the law of inertia. Now one can solve the difficulty in*



*two ways; either all motion is absolute, or our law of inertia is wrongly expressed ... I [prefer] the second. The law of inertia must be so conceived that exactly the same thing results from the second supposition as from the first.* We quote from an 1883 work by Mach on Newton's bucket:-

*Newton's experiment with the rotating water bucket teaches us only that the rotation of water relative to the bucket walls does not stir any noticeable centrifugal forces; these are prompted, however, by its rotation relative to the mass of the Earth and the other celestial bodies. Nobody can say how the experiment would turn out, both quantitatively and qualitatively, if the bucket walls became increasingly thicker and more massive -- eventually several miles thick.* Mach's argument is that Newton dismissed relative motion too readily. Certainly it was not rotation of the water relative to the bucket that should be considered but rotation of the water relative to all the matter in the universe. If that matter wasn't there and all that there was in the universe was the bucket and water, then the surface of the water would never become concave. He disagreed with Newton's thought experiment based on two rocks tied together in completely empty space. If the experiment were carried out in a universe with no matter other than the rocks and the rope, then the conclusion one can deduce from Mach's idea is that one could not tell if the system was rotating. The rope would never become taut since rotation was meaningless. Clearly since this experiment cannot be performed it is impossible to test whether Mach or Newton is right.

[http://www-history.mcs.st-and.ac.uk/PrintHT/Newton\\_bucket.html](http://www-history.mcs.st-and.ac.uk/PrintHT/Newton_bucket.html)



## What's a scientific explanation?

**i)** Let's begin with some stereotypes. There's the familiar narrative of the boy who's raised in a "fundamentalist church," but loses his faith in Scripture when he goes to college and studies science.

Likewise, secular science regards creationism and intelligent design theory as ad hoc. These aren't driven by the evidence. Rather, they try to find flaws in conventional science, and propose possible alternative explanations which are merely consistent with the evidence.

Moreover, when the evidence runs out or goes against them, they resort to the deus ex machina. Miracles are consistent with anything. Given a miracle, anything can happen.

Although that's a hostile, outsider characterization of creationism and intelligent design theory, there are creationists who, to some extent, have the same misgivings. Take the so-called problem of distant starlight. A popular creationist explanation appeals to mature creation. However, some creation scientists dislike that explanation because it's a miraculous explanation rather than a scientific explanation. They are trained scientists, and they want to defend creationism on *scientific* grounds.

**ii)** There's a grain of truth to these objections, but they are one-sided. If, in fact, God-did-it, then to exclude God from the explanation is special pleading. If, in fact, God-did-it, then a naturalistic alternative is ad hoc.

**iii)** This also goes to the thorny question of what constitutes a scientific explanation. Atheists think divine agency renders an explanation unscientific. And we'd expect

atheists to take that position. But I also find similar confusion among some creationists. Both sides are unclear on how to demarcate a scientific explanation from a miraculous explanation.

Atheists like Lewontin take the position that once you allow a divine foot in the door, anything goes. That, however, is a caricature of the miraculous.

The definition of a scientific explanation is bound up with the definition of a miracle. These are correlative questions. Let's consider two potential criteria:

### A) CAUSAL CONTINUITY.

A presupposition of science is that the same causes yield the same effects. That also supplies a principle of predictability. Given the same cause, the same effect will result.

And that also supplies a basis for interpolations and extrapolations. We infer missing links. We trace the effect back to the cause through a series of intervening processes or events. The principle is symmetrical and reversible. If the same causes entail the same effects, then the same effects entail the same causes.

But that's consistent with miracles. When a given outcome is the result of a miracle, you have a different result because you have a different cause. A cause that bypasses the ordinary chain of cause and effect (on a classic definition of a miracle).

Take a terminal cancer patient who goes into spontaneous remission in answer to prayer. That doesn't subvert medical science. Absent divine intercession, the same causes have the same effects. It simply interjects a new factor, outside the chain of cause and effect, into the transaction. It breaks

into the chain of cause and effect, but the chain resumes after divine intercession.

In addition, some miracles result from a continuous chain of physical cause and effect. Take Ahab's "accidental" death by a random arrow (1 Kgs 22). At one level, that was perfectly natural. The end-result of natural means. Yet it was a prearranged event.

### B) PHYSICAL CAUSATION

A presupposition of *secular* science is that causes are physical. A natural explanation involves physical causes.

This stands in contrast to mental causation. Physical causes are unintelligent forces or processes. Often inanimate.

Because physical causes are unintelligent, they are invariant. They operate automatically, with mechanical regularity—like a programmed result.

From a Christian standpoint, that's often the case, although that's not a matter of principle. In ordinary providence, things normally happen that way. And that also supplies the basis for linear extrapolations and postulated interpolations.

But in the biblical worldview, causation isn't confined to physical causation. In addition, there is mental causation. Personal agents who have the ability to simply will things to happen.

That does introduce an unpredictable element into the equation. This means that in some cases we can't say with confidence how something happened—especially events where there were no human observers. We can't be sure if it happened naturally or supernaturally.

I'd add that there's abundant evidence for miracles, as well as the paranormal. Indeed, this is underreported.

So a Christian isn't guilty of special pleading when he takes this additional factor into consideration. It isn't just a face-saving explanation. Rather, it's making allowance for genuine imponderables. In many cases, that's not something you or he can rationally rule out.

## Is science self-correcting?

Atheists allege that Christian theology is unfalsifiable, unlike scientific theorizing, which, because it's fact-based rather than faith-based, is not only falsifiable, but according to Carl Sagan, "self-correcting."

Here's an example of self-correcting science:

During a talk at the Kavli Institute for Theoretical Physics at the University of California, Santa Barbara, Nima Arkani-Hamed, a physicist at the Institute for Advanced Study in Princeton, N.J., paced to and fro in front of the blackboard, addressing a packed room about the future of supersymmetry. What if supersymmetry is not found at the LHC, he asked, before answering his own question: ***then we will make new supersymmetry models that put the superpartners just beyond the reach of the experiments.*** But wouldn't that mean that we would be changing our story? That's okay; theorists don't need to be consistent—only their theories do.

<http://www.math.columbia.edu/~woit/wordpress/?p=6836>

## BioLogos and bad science

Science is based on observed regularities and logical induction to unobserved regularity. The secular scientist assumes that everything works in a regular, reproducible kind of way because that is what science has always found to be the case so far. The scientist who is a Christian agrees, but in addition believes in a rational basis for that order, the creator God who faithfully endows the universe with its regularities and intelligibility. Denis Alexander, **CREATION OR EVOLUTION: DO WE HAVE TO CHOOSE?** (Monarch Books; revised and expanded ed., 2014), 48.

There's some truth to this claim. However, it suffers from a strange overstatement. Mind you, that's not surprising considering the fact that he's one of the bigwigs at BioLogos. In particular, consider his claim that:

The secular scientist assumes that everything works in a regular, reproducible kind of way because that is what science has *always found to be the case so far*.

Really? To take a stock counterexample, what about miraculous healing in answer to prayer? I'm not saying that's commonplace. But how many medically verifiable examples would you need to disprove his universal claim to the contrary?

Compare his outlook to M. Scott Peck. Peck was a psychiatrist who received his B.A. degree magna cum laude from Harvard College in 1958, and his M.D. degree from the Case Western Reserve University School of Medicine in 1963. From 1963 until 1972, he served in the United States as Assistant Chief Psychiatry and Neurology Consultant to the Surgeon General of the Army:



I had come to believe in the reality of benign spirit or God, as well as the reality of human goodness. I'd come to believe distinctly in the reality of human evil, and that left me an obvious hole in my thinking. Namely was there such a thing as evil spirit, or the devil specifically? In common with 99.99 percent of psychiatrists and with 80 percent of Catholic priests--as confidentially polled back in 1960, the figure would be much higher now--I did not believe in the devil.

But I was a scientist, and it didn't seem to me I should conclude there was no devil until I examined the evidence. It occurred to me if I could see one good old-fashioned case of possession, that might change my mind. I did not think that I would see one, but if you believe that something doesn't exist, you can walk right over it without seeing it.

These cases, in a whole number of ways--the more I studied them, the more they did not fit in a typical psychiatric picture. The second case [Becca], for instance. As she should have been getting better, she got worse.

And this is what's called diagnoses by exclusion. I'd go through the whole range of psychiatric conditions, whether they could explain the patient's condition. In both of my two cases, they were unexplainable by any kind of traditional psychiatric terms.

Because I was a scientist I was perhaps more stringent than most people would be in diagnosing these two cases. I wasn't going to try to deal with something I wasn't sure was possession. Particularly as a psychiatrist, I was really sticking my neck out.

<http://www.beliefnet.com/Faiths/2005/01/The-Patient-Is-The-Exorcist-Interview-With-M-Scott-Peck.aspx>

Peck doesn't begin with the postulate that "everything works in a regular, reproducible kind of way because that is what science has *always found to be the case so far*." Peck is more scientific than Alexander. Peck doesn't assume he knows the answer in advance. He examines the evidence.

If, moreover, some forms of mental illness are the result of possession, then everything doesn't work in a regular, reproducible way. Machines work in a regular, reproducible way. That's in contrast to personal agency.

## Structural realism

I'm posting some email exchanges I had with a couple of friends regarding the philosophy of science:

Recently I saw a jogger with a hydration belt. That's something I've seen before. But this time I noticed that the bottled water in her belt was yellow.

That got me thinking. From a distance, you can't tell if it's yellow fluid in a clear bottle, or clear fluid in a yellow bottle. One of the ambiguities of sensory perception.

Of course, there are ways of finding out. Empty the bottle. That way you can see if it's the fluid or the bottle that's yellow.

But suppose sensory perception *itself* (i.e. what we perceive with) is like that? To vary the illustration: when I see color, is that because the world is colorful, or because my lens is tinted (as it were)?

Ultimately, it's hard to know how we'd detect the difference, since we have no independent standard of comparison. We can't perceive the world apart from our senses, so we can't contrast a sensed world with an unsensed world.

I agree with you that what we perceive is probably a combination of what our brain/sensory perceptual system contributes along with some objective properties of the external stimulus.

However, the problem I'm discussing is runs deeper. For instance, when I peer through a telescope or microscope,

that artificially enhances my natural visual acuity. However, the enhanced data is still filtered back through my eyes, and interpreted by my brain.

Hence, I don't think there's an independent way to tell how much of what I perceive is objective and how much is subjective.

Even my description of brains and sense organs is deceptively circular, for we use brains to study brains, we use sense organs to study sense organs. But in that event, we never have direct knowledge of we're using to perceive the physical world. Since we always perceive the world *with* something, we can't say what the prism is like without it.

And I think that conundrum presents a more serious problem for atheism, with its "blind safecracker," and its lack of divine revelation to correct or corroborate our perceptions.

**i)** Science is ultimately based on our sensory perception of the physical world. Depending on the branch of science, this may involve direct observation, or it may be more inferential.

But the conundrum involves the gap between the sensed object and the unsensed object. All we can ever know about is the sensed object. The unsensed object remains out of reach. We never know what the object is like apart from our sensory perception.

Some people might say that's a Kantian distinction, but there's nothing uniquely Kantian about it. The distinction between appearance and reality goes back to the Pre-Socratics.

Hence, science can never tell us what the world is really like.

**ii)** Secondly, In a way, I agree with Richard Lewontin that once you allow a divine foot in the door, it's hard to draw the line on what might happen. I simply derive a different conclusion. He confuses *disapproving* with *disproving*. Because he doesn't like the consequences of a divine foot in the door, he rejects it. But, of course, that doesn't mean there is no divine foot in the door!

To take an example, critics of mature creation say this would mean we see an image of a supernova that never existed. We see the effect of an illusory cause.

However, I don't find that antecedently objectionable. What if the universe is like a movie set? Take **TOMBSTONE**. The story begins in 1881. Logically, there's a backstory. But in the world of the movie, you can't go back in time to a period before October 1881. In the world of the movie, nothing happens before October 1881. Everything starts at that point, and continues from that point.

For all I know, that's what the history of the universe amounts to. It actually begins within an ongoing cosmic narrative. And that would be indistinguishable from a real prehistory.

I'm not saying that's how it happened. Rather, I'm saying that in the nature of the case, I have no evidence to the contrary, and I don't have any a priori theological objection to that scenario.

Moving along, it isn't clear to me (from the article) why structuralism is classified as scientific realism rather than antirealism. When it says things like we can't know what nature is *intrinsically* like, that has more in common with scientific antirealism than realism. Indeed, that denial dovetails with my own position.

Another complication is that, at best, this is a family of positions, rather than one clear-cut position. Indeed, even that may well be an overly generous characterization.

It is widely held that the most powerful argument in favour of scientific realism is the no-miracles argument, according to which the success of science would be miraculous if scientific theories were not at least approximately true descriptions of the world.

That's not a problem for my position. So long as there's a consistent correlation between the proximal stimulus and the distal stimulus, what we perceive can be very different than what the world is really like, yet our scientific theories would still be successful. They don't need to be true descriptions of the world, but true descriptions of the phenomena. For as long as the phenomena track the world in a systematic correlation, phenomenal descriptions will be scientifically reliable.

For instance, compare the relationship between music and a music score. A music score isn't music. It doesn't resemble music. It's just notation. A code language for representing music. Yet there's a one-to-one correspondence between music and a music score. That's why you can use the score to reconstruct the music.

Same thing with a CD. The encoded information isn't music. But a CD player will translate the digitized data back into

music.

Let's take a comparison. Suppose a medieval physician notices a pattern. He notes a correlation between outbreaks of Bubonic plague and rat infestation. He also notices that plague outbreaks radiate out from port cities. He hypothesizes that rats cause the plague. That the plague originated elsewhere, and was spread by rats on ships. He further theorizes that pest control measures ought to reduce epidemics of Bubonic plague.

Is this a true theory? Yes and no. Rats don't cause the plague. Not directly. Yet we might say his theory tracks the truth. The truth is two steps removed from rats. Rats are carriers of fleas, and fleas are carriers of the bacterium. Of course, he knows nothing about the existence of bacteria.

Yet he's right to notice a correlation between rats and plague. And, considered as a *whole/part* relation, there's a sense in which rats cause plague, inasmuch as that coarse-grained explanation *includes* or *covers* the actual underlying cause.

Since bacteria are undetectable to a medieval physician, he can only go by appearances. But the appearances reveal a consistent correlation. And the appearances are the *effects* of an underlying cause, even if the cause is imperceptible.

Scripture attributes some (but not all) pestilence to specific divine judgments. That's not necessarily miraculous in the classical sense of God bypassing natural processes. In many cases it could be a coincidence miracle, whereby God prearranges natural events to produce pestilential hotspots at the right time and place.

In that case, God is one of the causes of the pestilence. As David Lewis put it, "We think of a cause as something that makes a difference, and the difference it makes must be a difference from what would have happened without it."

So it's not reducible to physical causation alone. It's too targeted to be the outcome of nature's automatic setting. So it's not *predictable* in that respect.



## Alien science

It's commonly said that Christians should follow the evidence wherever it leads. And sometimes that's good advice.

However, Van Tilians have noted that raw data doesn't necessary point in any particular direction. We interpret the evidence in light of other beliefs about the nature of the world. Debates over methodological naturalism, the argument from silence, the burden of proof, the uniformity of nature, &c., illustrate the value-laden nature of assessing where the evidence leads.

That doesn't mean it's subjective, so long as we can justify our beliefs about the nature of the world which feed into how we assess the evidence. Of course, there's a degree of circularity here. For our interpretation of the evidence figures in our beliefs about what is actual, possible, or impossible—just as our beliefs about what is actual, possible or impossible figure in our interpretation of the evidence. In that sense, there's no starting-point from one to the other. You must have a sense of both.

This issue was forcibly impressed on my when I intercepted a communiqué between two aliens from Torona IV, one of whom was stationed here as a covert observer, in preparation for first contact. He was being debriefed by his supervisor.

The covert alien observer was attempting to infer the rules of soccer (and related or analogous games) from watching soccer games. From observing players, fans, and the like, this is what he concluded.

(I'm translating directly from the original Jaradan language.)

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**Supervisor:** What did you study?

**Spy:** Sports. Many earthlings are obsessed with games or athletic contests. Therefore, I thought that might be a good way of finding out what they value and how they reason.

**Supervisor:** What sports did you observe?

**Spy:** Mainly soccer, ice hockey, and golf.

**Supervisor:** What did you discover?

**Spy:** To judge by their behavior, the objective of soccer is for a team to avoid kicking the ball into the goal.

Kicking the ball into the goal is an error. Errors are displayed on the scoreboard. The higher the score, the more errors. The team with the highest score loses.

If a team begins to rack up a higher score in relation to the rival team, that makes it much harder for the high-scoring team to recover.

**Supervisor:** How did you draw that conclusion?

**Spy:** Because they rarely kick the ball into the goal.

**Supervisor:** It is possible that they are aiming for the goal, but simply miss most of the time?

**Spy:** I considered that alternative explanation. However, tens of millions of earthling boys practice soccer. Of that number, only the most talented become pro soccer players. They receive special coaching. They practice incessantly.

It's inherently implausible that players who are supposed to be that good would miss that often. So it must be the other way around. They intentionally avoid kicking the ball into the goal.

**Supervisor:** Yet they sometimes fail?

**Spy:** On rare occasions they accidentally kick the ball into the goal. That happens when players on the rival team maneuver them into a position where they can't avoid it.

**Supervisor:** Do you have any collaborative evidence for your interpretation?

**Spy:** Yes. In soccer there seems to be a disqualification phase. The best team is the team that wins the very first time. It wins by having the lowest score. The fewest errors.

Having won, it can sit out the rest of the season. Take it easy.

But the losers must keep playing more games. That's because they need more practice in how to avoid kicking the ball into the goal. The worst teams, who are slow learners, end up in the finals. What earthlings call the World Cup.

**Supervisor:** You said you studied other sports.

**Spy:** Yes. Golf is analogous to soccer. It's unmistakably clear from repeated observation that objective of golf is to not hit the ball into the hole. Indeed, it's set up to make that virtually impossible. A player begins by hitting a ball from a ridiculous distance. Earthlings have poor distance vision. The terrain is uneven. The turf is soft. There are obstacles along the way: ponds, sand traps. The implements they use ("gold clubs") are singularly inefficient.

As an earthling statesman once quipped: "Golf is a game whose aim is to hit a very small ball into an ever smaller hole, with weapons singularly ill-designed for the purpose."

If the objective was to get the ball into the hole, they'd simply pick it up and drop it into the hole. They'd enlarge the holes. And if they insisted on using clubs, they'd at least have hard flat surface.

For instance, Tiger Woods used to be the world's worst golfer. He took the fewest strokes to get a ball into the hole. But with diligent practice, he's gotten so much better.

## The power of paradigms

One objection to creationism is simply the fact that so many scientists subscribe to evolution. Why would they do that? Is there a scientific conspiracy to reject Christian theology? Did they get together and take a vote?

**i)** To begin with, a certain percentage of scientists are, in fact, hostile to Christianity, Christian ethics, the idea of God. That's clear from surveys as well as outspoken critics. That's not a hidden agenda. That's upfront.

**ii)** But another factor is the power of a paradigm. By "paradigm" I mean an interpretive grid. People who are trained in a particular way of seeing a problem and solving a problem may find it almost impossible to conceive of any other way to analyze problems in their field. To deny the paradigm is a hallmark of irrationality.

Paradigms have a powerful conditioning effect on how we frame issues, what solutions we consider to be acceptable. Many people find it difficult, even for the sake of argument, to step outside of their paradigm and consider the evidence from a radically different perspective. They've lost the capacity for critical detachment. They are so used to operating with the paradigm that it dominates their thinking.

Paradigms are appealing or seductive because they seem to offer a unified explanation for complicated phenomena. You're confronted with a range of apparently disparate factors. How do you sort it out? Is there a common thread?

A paradigm offers a unifying principle. A way to simplify the analysis by reducing it to some general explanatory dynamics.

For instance, some people have compared reading Marx to a religious conversion. Suddenly, all the pieces fell into place.

This is true for many academic disciplines. Take different approaches to psychology, viz. behaviorism, depth psychology, evolutionary psychology.

Take different theories of mind, viz. functionalism, computationalism.

Take different theories of historical causation. What's the "root cause"? Is history driven by ideas, individuals, economics, luck?

Some paradigms have, or seem to have, great explanatory power. An ability to integrate wide swaths of data. They can be very persuasive.

A breaking point is when a paradigm tries to explain too much. The paradigm no longer explains the evidence; rather, the theorist labors to show how the evidence is consistent with the paradigm. He may introduce makeshift modifications to the paradigm, or speculate on how the total evidence would be consistent with the paradigm if only we had a larger sample.

A paradigm may explain, or appear to explain, a lot of evidence, but when it becomes strained or overextended, that reveals internal weaknesses in the paradigm. It's like a half-truth. It may capture some truth, approximate the truth in some respects, but it's off the mark.

When we evaluate a paradigm, we need to take into account, not only what it seems to explain, and so without difficulty, and what it fails to explain. It's a question of starting-points. Do you begin with what the paradigm seems to explain with ease, take that as confirmation that the paradigm is roughly on target, then chalk up difficulties to remaining problems to be resolved, which you have faith are ultimately soluble within the parameters of the paradigm?

Or do you begin with problems it has difficulty assimilating? Do you take that as an indication that the paradigm may be flawed? When you evaluate a paradigm, do you begin with apparent problems or apparent solutions? With what it can explain or what it can't? Which endpoint is your frame of reference?



## Methodological atheism is viciously circular

Imagine the following conversation between a theist (T) and a metaphysical naturalist (MN) who justifies metaphysical naturalism on the basis of the evidential form of the problem of evil and who then attempts to justify methodological naturalism on the basis of metaphysical naturalism.

**MN:** If one is a metaphysical naturalist then one should be a methodological naturalist, i.e., refuse ever to postulate nonphysical entities as the cause of physical events. One should not believe in nonnatural entities without good evidence. There is no good evidence for nonnatural entities. Indeed, in the case of God, the chief candidate for a nonnatural entity, the existence of evil constitutes positive evidence against His existence. Therefore one should accept metaphysical naturalism and, by logical extension, methodological naturalism.

**T:** I disagree that there is no good evidence for nonnatural entities. I propose to show you that there is evidence that God causes some physical events and that this positive evidence for God outweighs any presumed negative evidence based on the existence of evil.

**MN:** Such positive evidence cannot exist.

**T:** Why not?

**MN:** Because any investigation of the causes of physical events must employ methodological naturalism, i.e., must assume that it is never, even in principle, legitimate to posit a nonnatural cause for a physical event.

**T:** Why should one accept methodological naturalism?

**MN:** Because there is good reason to think metaphysical naturalism is true, and methodological naturalism follows logically from the truth of metaphysical naturalism.

**T:** Remind me once more of your good reason for thinking metaphysical naturalism is true.

**MN:** The good reason for thinking that metaphysical naturalism is true is that there is no good evidence that nonnatural entities exist. Further, given that evil constitutes evidence against the existence of God, the primary candidate for a nonnatural entity, it seems clear that metaphysical naturalism is justified.

**T:** Would methodological naturalism ever permit one to posit a nonnatural entity as the cause of a physical event.

**MN:** No. I have already made that clear.

**T:** Let me get this right. Your acceptance of metaphysical naturalism is based on the fact that there exists no evidence that nonnatural entities ever cause physical events?

**MN:** Yes. That along with the evidence provided by the existence of evil.

**T:** And your endorsement of methodological naturalism follows from your acceptance of metaphysical naturalism?

**MN:** Yes.

**T:** This seems question-begging. You endorse metaphysical naturalism on the basis that there exists no evidence that nonnatural entities ever cause physical events, yet adopt a methodology which rules out the possibility of ever recognizing evidence of nonnatural causes. You are using your metaphysic to justify your acceptance of methodological naturalism, but your acceptance of methodological naturalism serves to guarantee that even if evidence for the existence of nonphysical causes exists it can never be recognized as such.

**MN:** Are you not forgetting that evil constitutes positive evidence against God's existence?

**T:** Assuming that evil does in fact constitute evidence against God's existence, it only makes God's existence improbable if there is not a body of positive evidence that outweighs the body of negative evidence. By adopting methodological naturalism you guarantee that such a body of positive evidence will not be recognized, even if it exists. You use your metaphysical naturalism to justify methodological naturalism and you use methodological naturalism to justify your metaphysical naturalism. Your metaphysical naturalism supposedly justifies your methodological naturalism, but your methodological naturalism serves to insulate your metaphysical naturalism from any possible challenge. This is viciously circular. It begs the important question of whether there exists sufficient evidence to justify belief in nonnatural entities and thus disbelief in metaphysical naturalism.

[http://epsociety.org/userfiles/art-Larmer%20\(MethodologicalNaturalismQuestion-Begging\).pdf](http://epsociety.org/userfiles/art-Larmer%20(MethodologicalNaturalismQuestion-Begging).pdf)



## Mill on miracles

J. S. Mill was a brilliant atheist who wrote a sustained attack on Christianity (Three Essays on Religion). I'd like to comment on his attempted attack on miracles.

Taking the question from the very beginning; it is evidently impossible to maintain that if a supernatural fact really occurs, proof of its occurrence cannot be accessible to the human faculties. The evidence of our senses could prove this as it can prove other things. To put the most extreme case: suppose that I actually saw and heard a Being, either of the human form, or of some form previously unknown to me, commanding a world to exist, and a new world actually starting into existence and commencing a movement through space, at his command. There can be no doubt that this evidence would convert the creation of worlds from a speculation into a fact of experience. It may be said, I could not know that so singular an appearance was anything more than a hallucination of my senses. True; but the same doubt exists at first respecting every unsuspected and surprising fact which comes to light in our physical researches. That our senses have been deceived, is a possibility which has to be met and dealt with, and we do deal with it by several means. If we repeat the experiment, and again with the same result; if at the time of the observation the impressions of our senses are in all other respects the same as usual, rendering the supposition of their being morbidly affected in this one particular, extremely improbable; above all, if other people's senses confirm the testimony of our own; we conclude, with reason, that we may trust our senses. Indeed our senses are all

that we have to trust to. We depend on them for the ultimate premises even of our reasonings. There is no other appeal against their decision than an appeal from the senses without precautions to the senses with all due precautions. When the evidence, on which an opinion rests, is equal to that upon which the whole conduct and safety of our lives is founded, we need ask no further. Objections which apply equally to all evidence are valid against none. They only prove abstract fallibility.

That's well taken.

But the evidence of miracles, at least to Protestant Christians, is not, in our own day, of this cogent description. It is not the evidence of our senses, but of witnesses, and even this not at firsthand, but resting on the attestation of books and traditions.

**i)** Although differentiating between the evidence of our senses and the evidence of witnesses is a valid distinction, his dichotomy between witnesses and attestation of books and traditions is a false antithesis. That's the nature of most *recorded* testimonial evidence, which has its origin in oral history.

**ii)** Moreover, he assumes that 19C Protestants had no firsthand experience of miracles. How would he be in any position to know that? He was raised in an irreligious household. As an adult, he didn't move in evangelical circles. He avoided the settings in which miracles, if they occur, are more likely to occur. There's a circular, self-reinforcing quality to infidelity, where unbelievers associate with other unbelievers, so that their social circle deliberately excludes the company where answered prayer, if it happens, would fall under their purview.

**iii)** Nowadays, we also have lab tests and medical scans that show a patient's before and after condition. That's different from either firsthand observation of a miracle or testimony to a miracle. You could pull someone's records and see the results for yourself.

And even in the case of the original eyewitnesses, the supernatural facts asserted on their alleged testimony, are not of the transcendent character supposed in our example, about the nature of which, or the impossibility of their having had a natural origin, there could be little room for doubt. On the contrary, the recorded miracles are, in the first place, generally such as it would have been extremely difficult to verify as matters of fact, and in the next place, are hardly ever beyond the possibility of having been brought about by human means or by the spontaneous agencies of nature. It is to cases of this kind that Hume's argument against the credibility of miracles was meant to apply.

That denial is conspicuous for the utter lack of specific examples. He doesn't say what recorded miracles he's alluding to, how they'd have been extremely difficult to verify as matters of fact, or hardly ever beyond the possibility of having been brought about by human means or by the spontaneous agencies of nature. So his denial is a vacuous abstraction.

His argument is: The evidence of miracles consists of testimony. The ground of our reliance on testimony is our experience that certain conditions being supposed, testimony is generally veracious. But the same experience tells us that even under the best conditions testimony is frequently either intentionally or unintentionally, false. When, therefore, the fact to

which testimony is produced is one the happening of which would be more at variance with experience than the falsehood of testimony, we ought not to believe it. And this rule all prudent persons observe in the conduct of life. Those who do not, are sure to suffer for their credulity.

At variance with experience? As in no one's experience?

Now a miracle (the argument goes on to say) is, in the highest possible degree, contradictory to experience: for if it were not contradictory to experience it would not be a miracle. The very reason for its being regarded as a miracle is that it is a breach of a law of nature, that is, of an otherwise invariable and inviolable uniformity in the succession of natural events. There is, therefore, the very strongest reason for disbelieving it, that experience can give for disbelieving anything. But the mendacity or error of witnesses, even though numerous and of fair character, is quite within the bounds of even common experience. That supposition, therefore, ought to be preferred.

There are two apparently weak points in this argument. One is, that the evidence of experience to which its appeal is made is only negative evidence, which is not so conclusive as positive; since facts of which there had been no previous experience are often discovered, and proved by positive experience to be true.

That's well-taken.

The other seemingly vulnerable point is this. The argument has the appearance of assuming that the testimony of experience against miracles is undeviating and indubitable, as it would be if the whole question



was about the probability of future miracles, none having taken place in the past; whereas the very thing asserted on the other side is that there have been miracles, and that the testimony of experience is not wholly on the negative side. All the evidence alleged in favour of any miracle ought to be reckoned as counterevidence in refutation of the ground on which it is asserted that miracles ought to be disbelieved. The question can only be stated fairly as depending on a balance of evidence: a certain amount of positive evidence in favour of miracles, and a negative presumption from the general course of human experience against them.

That's well-taken.

In order to support the argument under this double correction, it has to be shown that the negative presumption against a miracle is very much stronger than that against a merely new and surprising fact. This, however, is evidently the case. A new physical discovery even if it consists in the defeating of a well established law of nature, is but the discovery of another law previously unknown. There is nothing in this but what is familiar to our experience: we were aware that we did not know all the laws of nature, and we were aware that one such law is liable to be counteracted by others. The new phenomenon, when brought to light, is found still to depend on law; it is always exactly reproduced when the same circumstances are repeated. Its occurrence, therefore, is within the limits of variation in experience, which experience itself discloses. But a miracle, in the very fact of being a miracle, declares itself to be a supersession not of one natural law by another, but of

the law which includes all others, which experience shows to be universal for all phenomena, viz., that they depend on some law; that they are always the same when there are the same phenomenal antecedents, and neither take place in the absence of their phenomenal causes, nor ever fail to take place when the phenomenal conditions are all present.

**i)** I don't know what Mill means by natural law. On one definition, a natural law is merely descriptive. It doesn't do anything. Laws aren't causes.

Is he using "natural law" as a synonym for a universal natural force or process? If so, it's not self-evident that miracles per se are inconsistent with universal forces or processes, although some may be.

**ii)** In any event, natural laws simply mean the same causes produce the same effects. If, however, a miracle involves the temporary introduction of a new cause, then that wasn't covered by a natural law. It's not inconsistent with natural laws, since they only deal with events covered by the same kind of causation.

It is evident that this argument against belief in miracles had very little to rest upon until a comparatively modern stage in the progress of science. A few generations ago the universal dependence of phenomena on invariable laws was not only not recognized by mankind in general but could not be regarded by the instructed as a scientifically established truth. There were many phenomena which seemed quite irregular in their course, without dependence on any known antecedents: and though, no doubt, a certain regularity in the occurrence of the most familiar phenomena must always have been

recognized, yet, even in these, the exceptions which were constantly occurring had not yet, by an investigation and generalization of the circumstances of their occurrence, been reconciled with the general rule. The heavenly bodies were from of old the most conspicuous types of regular and unvarying order: yet even among them comets were a phenomenon apparently originating without any law, and eclipses, one which seemed to take place in violation of law. Accordingly both comets and eclipses long continued to be regarded as of a miraculous nature, intended as signs and omens of human fortunes. It would have been impossible in those days to prove to any one that this supposition was antecedently improbable. It seemed more conformable to appearances than the hypothesis of an unknown law.

To the contrary, many biblical miracles were regarded as astounding to the original audience because they run counter to ordinary providence.

Now, however, when, in the progress of science, all phenomena have been shown, by indisputable evidence, to be amenable to law, and even in the cases in which those laws have not yet been exactly ascertained, delay in ascertaining them is fully accounted for by the special difficulties of the subject; the defenders of miracles have adapted their argument to this altered state of things, by maintaining that a miracle need not necessarily be a violation of law. It may, they say, take place in fulfilment of a more recondite law, to us unknown.

Critics of the Bible don't really believe that. They reject biblical miracles because they think those are naturally impossible. Indeed, that's why they reject Bible history.

If by this it be only meant that the Divine Being, in the exercise of his power of interfering with and suspending his own laws, guides himself by some general principle or rule of action, this, of course, cannot be disproved, and is in itself the most probable supposition. But if the argument means that a miracle may be the fulfilment of a law in the same sense in which the ordinary events of Nature are fulfilments of laws, it seems to indicate an imperfect conception of what is meant by a law, and of what constitutes a miracle.

When we say that an ordinary physical fact always takes place according to some invariable law, we mean that it is connected by uniform sequence or coexistence with some definite set of physical antecedents; that whenever that set is exactly reproduced the same phenomenon will take place, unless counteracted by the similar laws of some other physical antecedents;

For some reason, Mill's entire discussion is framed in terms of natural law. However, it's unnecessary for a counteracting natural *law* to produce the exception. A counteracting cause or agent will suffice.

and that whenever it does take place, it would always be found that its special set of antecedents (or one of its sets if it has more than one) has preexisted. Now, an event which takes place in this manner, is not a miracle. To make it a miracle it must be produced by a direct volition, without the use of means; or at least, of any means which if simply repeated would produce it. To constitute a miracle a phenomenon must take place without having been preceded by any antecedent phenomenal conditions sufficient again to reproduce it;

or a phenomenon for the production of which the antecedent conditions existed, must be arrested or prevented without the intervention of any phenomenal antecedents which would arrest or prevent it in a future case. The test of a miracle is: Were there present in the case such external conditions, such second causes we may call them, that whenever these conditions or causes reappear the event will be reproduced? If there were, it is not a miracle; if there were not, it is a miracle, but it is not according to law: it is an event produced, without, or in spite of law.

That's true for one class of miracles, but not for coincidence miracles, which piggyback on continuous antecedent conditions, but are more discriminating than physical causes alone would select for.

It will perhaps be said that a miracle does not necessarily exclude the intervention of second causes. If it were the will of God to raise a thunderstorm by miracle, he might do it by means of winds and clouds. Undoubtedly; but the winds and clouds were either sufficient when produced to excite the thunderstorm without other divine assistance, or they were not. If they were not, the storm is not a fulfilment of law, but a violation of it. If they were sufficient, there is a miracle, but it is not the storm; it is the production of the winds and clouds, or whatever link in the chain of causation it was at which the influence of physical antecedents was dispensed with. If that influence was never dispensed with, but the event called miraculous was produced by natural means, and those again by others, and so on from the beginning of things; if the event is no otherwise the act of God than in having been foreseen and ordained by him as the consequence of the forces put in action at the Creation;

then there is no miracle at all, nor anything different from the ordinary working of God's providence.

To take an counterexample, God's judgment on Sodom and Gomorrah was a natural disaster. That was consistent with natural laws. Indeed, that employed natural mechanisms. It was, however, targeted in time and space in a way that was more specific than merely natural forces, which are aimless. Of course, Mill denies the historicity of that account, but I use it to illustrate the *idea* of a miracle.

For another example: a person professing to be divinely commissioned, cures a sick person, by some apparently insignificant external application. Would this application, administered by a person not specially commissioned from above, have effected the cure? If so, there is no miracle; if not, there is a miracle, but there is a violation of law.

I'm curious about Mill's fixation with natural law. Natural laws are the most general classifications. Many physical forces, much less organic processes, operate at lower levels of generality and contingency. Is it a law of nature that a human heart has an average number of beats per minute?

It will be said, however, that if these be violations of law, then law is violated every time that any outward effect is produced by a voluntary act of a human being. Human volition is constantly modifying natural phenomena, not by violating their laws, but by using their laws. Why may not divine volition do the same? The power of volitions over phenomena is itself a law, and one of the earliest known and acknowledged laws of nature. It is true, the human will exercises power over objects in general indirectly, through the direct power which it possesses only over the human

muscles. God, however, has direct power not merely over one thing, but over all the objects which he has made. There is, therefore, no more a supposition of violation of law in supposing that events are produced, prevented, or modified by God's action, than in the supposition of their being produced, prevented, or modified by man's action. Both are equally in the course of nature, both equally consistent with what we know of the government of all things by law.

**i)** It's true that if God subsists outside of time and space, then divine agency differs from human agency.

**ii)** However, Mill equivocates over "nature" and "law". If he's using "natural" as a synonym for "physical," then it begs the question to say that human volition is natural in the sense of physical.

**iii)** Moreover, human volitions aren't law-like in the way that gravity is law-like, or even natural processes. Natural processes are mechanical. They don't think, deliberate, or make choices. They do whatever they were programmed to do. That's what makes them predicable in a way that human agents are not. For that matter, even animal behavior is unpredictable and "unlawful" compared to, say, crystal formation.

Mill seems to be imprisoned in a 19C mechanical paradigm, where he overextends the operations of some invariant natural forces, as if everything in the natural world has the law-like character of some natural forces or natural processes.

Those who thus argue are mostly believers in Free Will, and maintain that every human volition originates a new chain of causation, of which it is itself the

commencing link, not connected by invariable sequence with any anterior fact. Even, therefore, if a divine interposition did constitute a breaking-in upon the connected chain of events, by the introduction of a new originating cause without root in the past, this would be no reason for discrediting it, since every human act of volition does precisely the same. If the one is a breach of law, so are the others. In fact, the reign of law does not extend to the origination of volition.

Those who dispute the Free Will theory, and regard volition as no exception to the Universal law of Cause and Effect, may answer, that volitions do not interrupt the chain of causation, but carry it on, the connection of cause and effect being of just the same nature between motive and act as between a combination of physical antecedents and a physical consequent. But this, whether true or not, does not really affect the argument: for the interference of human will with the course of nature is only not an exception to law when we include among laws the relation of motive to volition; and by the same rule interference by the Divine will would not be an exception either; since we cannot but suppose the Deity, in every one of his acts, to be determined by motives.

But even if human volitions are produced by chains of cause and effect, if that's mental rather than physical, then when human agents manipulate nature, that's still a "breach" or "breaking-in" in relation to the physical continuum of cause and effect.

The alleged analogy therefore holds good: but what it proves is only what I have from the first maintained—that divine interference with nature could be proved if



we had the same sort of evidence for it which we have for human interferences. The question of antecedent improbability only arises because divine interposition is not certified by the direct evidence of perception, but is always matter of inference, and more or less of speculative inference. And a little consideration will show that in these circumstances the antecedent presumption against the truth of the inference is extremely strong.

Our evidence for human "interference" is hardly confined to direct perception in contrast to inference. We constantly infer human agency in reference to past events which fall outside direct perception.

When the human will interferes to produce any physical phenomenon, except the movements of the human body, it does so by the employment of means: and is obliged to employ such means as are by their own physical properties sufficient to bring about the effect. Divine interference, by hypothesis, proceeds in a different manner from this: it produces its effect without means, or with such as are in themselves insufficient. In the first case, all the physical phenomena except the first bodily movement are produced in strict conformity to physical causation; while that first movement is traced by positive observation, to the cause (the volition) which produced it. In the other case, the event is supposed not to have been produced at all through physical causation, while there is no direct evidence to connect it with any volition. The ground on which it is ascribed to a volition is only negative, because there is no other apparent way of accounting for its existence.

Actually, there are well-documented cases of psychokinesis. Moreover, Mill is obfuscating the issue. Lifting a glass with my hand employs means, and bodily movements are physical. But is *willing* to lift my hand a physical act or a mental act? Is mental causation prior to physical causation in that respect?

But in this merely speculative explanation there is always another hypothesis possible, viz., that the event may have been produced by physical causes, in a manner not apparent. It may either be due to a law of physical nature not yet known, or to the unknown presence of the conditions necessary for producing it according to some known law.

A basic problem with appealing to unknown laws is that natural laws are entirely general and unintelligent. Natural laws lack the rational discretion to single out particular outcomes in the way that miracles reflect.

Supposing even that the event, supposed to be miraculous, does not reach us through the uncertain medium of human testimony but rests on the direct evidence of our own senses; even then so long as there is no direct evidence of its production by a divine volition, like that we have for the production of bodily movements by human volitions—so long, therefore, as the miraculous character of the event is but an inference from the supposed inadequacy of the laws of physical nature to account for it,—so long will the hypothesis of a natural origin for the phenomenon be entitled to preference over that of a supernatural one. The commonest principles of sound judgment forbid us to suppose for any effect a cause of which we have absolutely no experience, unless all those of which we have experience are ascertained to be absent. Now

there are few things of which we have more frequent experience than of physical facts which our knowledge does not enable us to account for, because they depend either on laws which observation, aided by science, has not yet brought to light, or on facts the presence of which in the particular case is unsuspected by us. Accordingly when we hear of a prodigy we always, in these modern times, believe that if it really occurred it was neither the work of God nor of a demon, but the consequence of some unknown natural law or of some hidden fact.

Although experience can show us what happens, or at least what *has* happened, and therefore what *can* happen, it fails to show us what *can't* happen or *won't* happen. Experience refers to the past, not the future, and to what *is* the case, not what *must* be the case. Although experience contributes to our belief that some kinds of events are naturally inexplicable if they happened, it's not raw experience which yields that conclusion, but interpreted experience. When we understand how things physically work together, we understand when and why they don't work. The causal pathway is blocked. It's not possible for certain things to happen by that means if the connection is broken. Which doesn't rule out the event, but it can't happen through that medium if a link is missing. If it happens, it must be by some other cause, which doesn't require that intervening element.

Nor is either of these suppositions precluded when, as in the case of a miracle properly so called, the wonderful event seemed to depend upon the will of a human being. It is always possible that there may be at work some undetected law of nature which the wonder-worker may have acquired, consciously or unconsciously, the power of calling into action;

What kind of "law" is Mill talking about? Is he alluding to something like psychokinesis? If so, that precludes naturalism (i.e. physicalism-cum-causal closure). For that involves action at a distance, which is impossible if human volitions are generated by the brain. In that case, all mental activity is confined to the brain, and can have no direct effect on anything outside the body. Once he allows for minds that can operate apart from corporeal constraints, how can he exclude God, angels, and demons?

or that the wonder may have been wrought (as in the truly extraordinary feats of jugglers) by the employment, unperceived by us, of ordinary laws: which also need not necessarily be a case of voluntary deception;

Mill is contriving an unfalsifiable position, where no kind of evidence could ever countenance a miracle, even if it occurred. He's sealed himself off from reality by a web of intellectual evasions. How is that different, in principle, from a brilliant psychotic who deems the sensible world to be a cunning illusion, who deems the mental ward, the patients and psychiatrists, to be a cunning illusion? He has ingenious explanations that defect any possible disconfirmatory evidence.

or, lastly, the event may have had no connection with the volition at all, but the coincidence between them may be the effect of craft or accident, the miracle-worker having seemed or affected to produce by his will that which was already about to take place, as if one were to command an eclipse of the sun at the moment when one knew by astronomy that an eclipse was on the point of taking place.

That only works in like cases. It fails in cases that are not analogous to that. Mill's tactic is to operate at a level of high abstraction, so that he doesn't have to engage specific evidence for specific miracles. He avoids the details.

In a case of this description, the miracle might be tested by a challenge to repeat it; but it is worthy of remark, that recorded miracles were seldom or never put to this test. No miracle-worker seems ever to have made a practice of raising the dead: that and the other most signal of the miraculous operations are reported to have been performed only in one or a few isolated cases, which may have been either cunningly selected cases, or accidental coincidences. There is, in short, nothing to exclude the supposition that every alleged miracle was due to natural causes: and as long as that supposition remains possible, no scientific observer, and no man of ordinary practical judgment, would assume by conjecture a cause which no reason existed for supposing to be real, save the necessity of accounting for something which is sufficiently accounted for without it.

**i)** Even if miracles were confined to a few isolated cases, that's sufficient to overturn a universal negative. If you say all crows are black, it only takes one albino crow to prove otherwise.

**ii)** Moreover, magical tricks involve elaborate preparations. Special equipment. Controlled conditions. That doesn't account for the unstructured setting of many reported miracles.

Were we to stop here, the case against miracles might seem to be complete. But on further inspection it will be seen that we cannot, from the above considerations,

conclude absolutely that the miraculous theory of the production of a phenomenon ought to be at once rejected. We can conclude only that no extraordinary powers which have ever been alleged to be exercised by any human being over nature, can be evidence of miraculous gifts to any one to whom the existence of a supernatural Being, and his interference in human affairs, is not already a *vera causa*. The existence of God cannot possibly be proved by miracles, for unless a God is already recognized, the apparent miracle can always be accounted for on a more probable hypothesis than that of the interference of a Being of whose very existence it is supposed to be the sole evidence. Thus far Hume's argument is conclusive.

**i)** What makes divine agency less probable than a naturalistic explanation? In relation to what frame of reference is that less probable? Not in a world where an interventionist God exists. So Mill's strictures are prejudicial.

**ii)** Take the discovery of a new pathogen. Must the existence of the pathogen already be recognized before we can point to evidence? The fact that the existence of a hitherto unsuspected pathogen is required to explain the medical condition doesn't mean an investigation must begin with prior belief in the pathogen.

But it is far from being equally so when the existence of a Being who created the present order of Nature, and, therefore, may well be thought to have power to modify it, is accepted as a fact, or even as a probability resting on independent evidence. Once admit a God, and the production by his direct volition of an effect which in any case owed its origin to his creative will, is no longer a purely arbitrary hypothesis to account for

the fact, but must be reckoned with as a serious possibility. The question then changes its character, and the decision of it must now rest upon what is known or reasonably surmised as to the manner of God's government of the universe: whether this knowledge or surmise makes it the more probable supposition that the event was brought about by the agencies by which his government is ordinarily carried on, or that it is the result of a special and extraordinary interposition of his will in supersession of those ordinary agencies.

That's true. However, it's unnecessary to first prove God's existence before you can appreciate how miracles provide evidence for God's existence, for reasons stated (see above).

In the first place, then, assuming as a fact the existence and providence of God, the whole of our observation of Nature proves to us by incontrovertible evidence that the rule of his government is by means of second causes; that all facts, or at least all physical facts, follow uniformly upon given physical conditions, and never occur but when the appropriate collection of physical conditions is realized. I limit the assertion to physical facts, in order to leave the case of human volition an open question: though indeed I need not do so, for if the human will is free, it has been left free by the Creator, and is not controlled by him either through second causes or directly, so that, not being governed, it is not a specimen of his mode of government. Whatever he does govern, he governs by second causes. This was not obvious in the infancy of science; it was more and more recognized as the processes of nature were more carefully and accurately examined, until there now remains no class of phenomena of

which it is not positively known, save some cases which from their obscurity and complication our scientific processes have not yet been able completely to clear up and disentangle, and in which, therefore, the proof that they also are governed by natural laws could not, in the present state of science, be more complete. The evidence, though merely negative, which these circumstances afford that government by second causes is universal, is admitted for all except directly religious purposes to be conclusive. When either a man of science for scientific or a man of the world for practical purposes inquires into an event, he asks himself what is its cause? and not, has it any natural cause? A man would be laughed at who set down as one of the alternative suppositions that there is no other cause for it than the will of God.

**i)** The "whole of our observation of nature" includes many reported miracles, so Mill's appeal is self-refuting.

**ii)** If, moreover, miracles occur, but science disallows miraculous explanations, then science is out of touch with what actually happens in the world. If men of science can't bring themselves to admit reality into their explanatory repertoire, then science becomes a self-enclosed fiction. It's no longer about the world, but what scientists wish to believe, even when their beliefs don't match reality.

Against this weight of negative evidence we have to set such positive evidence as is produced in attestation of exceptions; in other words, the positive evidences of miracles. And I have already admitted that this evidence might conceivably have been such as to make the exception equally certain with the rule. If we had the direct testimony of our senses to a supernatural fact, it might be as completely authenticated and made



certain as any natural one. But we never have. The supernatural character of the fact is always, as I have said, matter of inference and speculation: and the mystery always admits the possibility of a solution not supernatural.

**i)** That's a good example of self-reinforcing ignorance. Mill isn't merely confessing that he himself never saw a miracle; rather, he presumes to speak on *behalf* of everyone else! But, of course, many observers say they do have the direct testimony of their senses to a supernatural fact. That's not firsthand evidence *for Mill*, but he's in no position to say they can't have the experience they report. He can't speak on their behalf, because he wasn't there.

**ii)** Moreover, there's nothing wrong with inference. Take a medical diagnosis, in which a physician infers a particular disease based on distinctive symptoms.

To those who already believe in supernatural power, the supernatural hypothesis may appear more probable than the natural one; but only if it accords with what we know or reasonably surmise respecting the ways of the supernatural agent. Now all that we know, from the evidence of nature, concerning his ways, is in harmony with the natural theory and repugnant to the supernatural. There is, therefore, a vast preponderance of probability against a miracle, to counterbalance which would require a very extraordinary and indisputable congruity in the supposed miracle and its circumstances with something which we conceive ourselves to know, or to have grounds for believing, with regard to the divine attributes.

Mill keeps repeating the same tendentious claims. Moreover, is he simply speaking in quantitative terms? Is he saying

natural explanations are more probable than supernatural explanations because natural events are more frequent than supernatural events? Even if that were so, the inference is fallacious. We explain natural events naturally, not because they are more frequent, but because they have the character of natural events. We ought to explain supernatural events supernaturally because they have the character of supernatural events. Relative frequency is irrelevant.

Suppose we discovered an ancient alien space craft that crashed on Mars. The frequency or rarity of such phenomenon in our experience has no bearing on the proper interpretation.

This extraordinary congruity is supposed to exist when the purpose of the miracle is extremely beneficial to mankind, as when it serves to accredit some highly important belief. The goodness of God, it is supposed, affords a high degree of antecedent probability that he would make an exception to his general rule of government, for so excellent a purpose. For reasons, however, which have already been entered into, any inference drawn by us from the goodness of God to what he has or has not actually done, is to the last degree precarious. If we reason directly from God's goodness to positive facts, no misery, nor vice nor crime ought to exist in the world. We can see no reason in God's goodness why if he deviated once from the ordinary system of his government in order to do good to man, he should not have done so on a hundred other occasions; nor why, if the benefit aimed at by some given deviation, such as the revelation of Christianity, was transcendent and unique, that precious gift should only have been vouchsafed after the lapse of many ages; or why, when it was at last

given, the evidence of it should have been left open to so much doubt and difficulty.

**i)** It's unclear how Mill's conclusion follows from his assumption. Let's grant that there's no intrinsic cutoff between one exception and a hundred exceptions. If, then, any exception will be arbitrary in the sense that there could always be one more exception more or one less exception, then there's no antecedent objection to the rarity of miracles (assuming miracles are rare). For Mill's objection is reversible. If miracles were more frequent, the logic of Mill's objection would then be the opposite: they could be less frequent!

**ii)** In addition, his principle is fallacious. Something that's beneficial in fewer cases may not be equally beneficial in more cases. Some things have special value to us because they are unusual, unexpected, or even unique. If you had a happy childhood, you're nostalgic about your childhood because it's unrepeatable. Something that's routine may be taken for granted. It's enjoyable to listen to my favorite musical numbers every so often. It would be unbearable to listen to them every day and every hour.

Suppose I'm at the end of my tether. Then an old friend shows up out of the blue. I haven't seen in for years. It's so opportune that he turned up at a low point of my life. Like a providential windfall. If, however, I saw him every week, it wouldn't have the same effect. That would still be good, but a different kind of good. What makes a pleasant surprise pleasant is the element of surprise. Because Mill suffers from an irrational animus towards Christianity, he overlooks many objections to his position.

Let it be remembered also that the goodness of God affords no presumption in favour of a deviation from

his general system of government unless the good purpose could not have been attained without deviation. If God intended that mankind should receive Christianity or any other gift, it would have agreed better with all that we know of his government to have made provision in the scheme of creation for its arising at the appointed time by natural development; which, let it be added, all the knowledge we now possess concerning the history of the human mind, tends to the conclusion that it actually did.

**i)** What is Mill even talking about? How could mankind receive Christianity through a process of natural development if Christianity is defined by such events as Adam's fall, the call of Abraham, the Exodus, the Incarnation, Resurrection, and return of Christ (to name a few)? These involve personal agency and supernatural intervention. It's not analogous to organic growth.

**ii)** What makes miracles a deviation rather than ordinary providence? What makes ordinary providence the standard of comparison? Each has independent value. Each serves a distinctive purpose.

To all these considerations ought to be added the extremely imperfect nature of the testimony itself which we possess for the miracles, real or supposed, which accompanied the foundation of Christianity and of every other revealed religion.

**i)** Miracles aren't confined to the founding of Christianity. Reported miracles occur throughout church history right up until the present. Although not all reports are credible, some are well-attested.

**ii)** How many candidates for revealed religions are there?

This is one of Mill's persistent weaknesses. He takes refuge in fact-free generalities.

Take it at the best, it is the uncross-examined testimony...

What do we know about ancient history and medieval history that's *not* based on uncross-examined testimony? Most of what we believe about anything is based on secondhand information. We haven't cross-examined our sources of information.

Mill's objection is self-refuting. He himself relies on the uncross-examined testimony of ancient historians and medieval historians to tell us what conditions were like back then. He unwittingly depends on testimonial evidence to impugn testimonial evidence.

...of extremely ignorant people, credulous as such usually are, honourably credulous when the excellence of the doctrine or just reverence for the teacher makes them eager to believe; unaccustomed to draw the line between the perceptions of sense, and what is superinduced upon them by the suggestions of a lively imagination; unversed in the difficult art of deciding between appearance and reality, and between the natural and the supernatural;

That's silly on the face of it. For Bible writers and their audience, miracles stand out precisely because they run counter to the ordinary course of nature. That's what makes them signs and wonders.

Is it a difficult art to distinguish between appearance and reality? What is Mill's referring to? Walking on water?

Turning water into wine? Healing the blind? Replicating food?

...in times, moreover, when no one thought it worth while to contradict any alleged miracle, because it was the belief of the age that miracles in themselves proved nothing, since they could be worked by a lying spirit as well as by the spirit of God.

They prove the existence of God and evil spirits. That establishes a worldview which is entirely at odds with Mill's naturalism.

Such were the witnesses; and even of them we do not possess the direct testimony; the documents, of date long subsequent, even on the orthodox theory

Within living memory.

which contain the only history of these events, very often do not even name the supposed eyewitnesses.

What difference would that make? These are ordinary people. What's the relevance of having someone's name from the past? How does that add to the credibility of the report? What's the difference between a named witness and an anonymous witness at our distance from events?

If one historical account says a medieval farmer discovered a meteorite on his property while a parallel account says farmer John discovered a meteorite on his property, what does that detail contribute to the credibility of the report? In one case we know the name of the medieval peasant. A name he shared in common with many other medieval peasants.

They put down (it is but just to admit), the best and least absurd of the wonderful stories such multitudes of which were current among the early Christians.

Is he saying there were many more stories in circulation regarding the miracles of Christ when the Gospels were written?

but when they do, exceptionally, name any of the persons who were the subjects or spectators of the miracle, they doubtless draw from tradition, and mention those names with which the story was in the popular mind, (perhaps accidentally) connected: for whoever has observed the way in which even now a story grows up from some small foundation, taking on additional details at every step, knows well how from being at first anonymous it gets names attached to it; the name of some one by whom perhaps the story has been told, being brought into the story itself first as a witness, and still later as a party concerned.

**i)** So his initial appeal to the evidential value of named witnesses was duplicitous. He doesn't care if they were anonymous or not.

**ii)** My parents and grandmother used to tell me stories about their lives. There was no growth in their stories. To the contrary, their anecdotes were fixed in memory with a stereotypical form. The wording would vary, but not the content.

It is also noticeable and is a very important consideration, that stories of miracles only grow up among the ignorant and are adopted, if ever, by the educated when they have already become the belief of multitudes. Those which are believed by Protestants all

originate in ages and nations in which there was hardly any canon of probability, and miracles were thought to be among the commonest of all phenomena.

That statement was demonstrably false even when Mill wrote it, and it hasn't aged well. There are many reported miracles by modern educated witnesses, some of which enjoy independent corroboration. There are collections of vetted miracles by scholars like Robert Larmer and Craig Keener. And that's just what's in the public domain. Most Christians aren't famous. The miracles they experience or witness go unreported. But they know what *they* saw.

The Catholic Church, indeed, holds as an article of faith that miracles have never ceased, and new ones continue to be now and then brought forth and believed, even in the present incredulous age—yet if in an incredulous generation certainly not among the incredulous portion of it, but always among people who, in addition to the most childish ignorance, have grown up (as all do who are educated by the Catholic clergy) trained in the persuasion that it is a duty to believe and a sin to doubt; that it is dangerous to be sceptical about anything which is tendered for belief in the name of the true religion; and that nothing is so contrary to piety as incredulity. But these miracles which no one but a Roman Catholic, and by no means every Roman Catholic believes, rest frequently upon an amount of testimony greatly surpassing that which we possess for any of the early miracles; and superior especially in one of the most essential points, that in many cases the alleged eyewitnesses are known, and we have their story at firsthand.

There's a lot of truth to that, and I'm no friend of Catholicism. That said, I've read a couple of articles by



Stanley Jaki on two miracles attributed to Lourdes. I find his analysis credible.

Thus, then, stands the balance of evidence in respect to the reality of miracles, assuming the existence and government of God to be proved by other evidence. On the one side, the great negative presumption arising from the whole of what the course of nature discloses to us of the divine government, as carried on through second causes and by invariable sequences of physical effects upon constant antecedents.

I've responded to that fallacious claim. In addition, Mill erects a false dichotomy between miracles and second causes. But coincidence miracles employ second causes. There are three explanatory categories: natural, preternatural, supernatural. Many amazing answers to prayer are preternatural.

On the other side, a few exceptional instances, attested by evidence not of a character to warrant belief in any facts in the smallest degree unusual or improbable

There are many well-documented miracles. Not just a "few exceptional instances". Notice, too, that Mill doesn't examine any specific examples.

the eyewitnesses in most cases unknown, in none competent by character or education to scrutinize the real nature of the appearances which they may have seen

That's demonstrably false.

and moved moreover by a union of the strongest motives which can inspire human beings to persuade,

first themselves, and then others, that what they had seen was a miracle.

Miracles can be deeply unwelcome when they induce an observer to convert on pain of persecution or martyrdom. There's a powerful disincentive to credit miracles in that case. Take Muslims who attribute their Christian conversion to dreams and visions of Jesus. That's a huge personal risk.

The facts, too, even if faithfully reported, are never incompatible with the supposition that they were either mere coincidences, or were produced by natural means; even when no specific conjecture can be made as to those means, which in general it can. The conclusion I draw is that miracles have no claim whatever to the character of historical facts and are wholly invalid as evidences of any revelation.

What is Mill's criterion to distinguish coincidence from design?

What can be said with truth on the side of miracles amounts only to this: Considering that the order of nature affords some evidence of the reality of a Creator, and of his bearing good will to his creatures though not of its being the sole prompter of his conduct towards them: considering, again, that all the evidence of his existence is evidence also that he is not all-powerful, and considering that in our ignorance of the limits of his power we cannot positively decide that he was able to provide for us by the original plan of Creation all the good which it entered into his intentions to bestow upon us, or even to bestow any part of it at any earlier period than that at which we actually received it—considering these things, when we consider further that a gift, extremely precious, came

to us which though facilitated was not apparently necessitated by what had gone before, but was due, as far as appearances go, to the peculiar mental and moral endowments of one man, and that man openly proclaimed that it did not come from himself but from God through him, then we are entitled to say that there is nothing so inherently impossible or absolutely incredible in this supposition as to preclude any one from hoping that it may perhaps be true. I say from hoping; I go no further; for I cannot attach any evidentiary value to the testimony even of Christ on such a subject, since he is never said to have declared any evidence of his mission (unless his own interpretations of the Prophecies be so considered) except internal conviction; and everybody knows that in prescientific times men always supposed that any unusual faculties which came to them they knew not how, were an inspiration from God; the best men always being the readiest to ascribe any honourable peculiarity in themselves to that higher source, rather than to their own merits.

The case for Christianity is hardly confined to the sole testimony of Jesus.

## Miracles, induction, and retrodiction

According to the principle of induction, we can retroengineer the past from the present. There's a chain of events leading up to the present. Antecedent states produce subsequent states. The same causes produce the same effects. Since that's repeatable, if we're familiar with the process, we can retrace an effect back through intervening stages to the originating cause.

For instance, when I see an adult human, I know how he got to that point. I can run it backwards from adulthood through adolescence, childhood, gestation, and conception.

All things being equal, that's a generally reliable inference. However, miracles pose an exception to induction. A classic miracle (in contrast to a coincidence miracle) is causally discontinuous with the past. A miracle isn't uncaused, but it's not the result of a causal chain. Rather, a miracle results from the introduction of an anomalous cause outside the ordinary chain of events. It represents a break in the causal continuum. The continuum resumes after the break, taking the miracle as a new starting-point.

For instance, suppose a person suffers from a naturally irreversible degenerative condition. Suppose he undergoes miraculous healing. That outcome can't be retrodicted from his prior condition.

In the case of miracles, induction hits a wall. When the subsequent course of events is the result of a miracle, inductive inference can't go further back than the miracle. It can't reconstruct the past before the miracle occurred, because the post-miraculous state is not a product of the pre-miraculous state. Induction can only take you from the

present to as far back in time as the precipitating miracle. It can't jump over that to the other side, because the chain of events prior to the miracle is a dead-end. The prior chain of events terminated with the miracle, which represents a new beginning.

This raises a potential problem regarding past-oriented sciences (e.g. cosmology, historical geology, paleontology, evolution). If miracles occur in the past, are they even detectable? What's the scope of any particular miracle to reset the status quo? That limits our ability to reconstruct the past.

## Do scientists assume their conclusions?

A brief exchange I had on Facebook. In context, McRae is responding to a young-earth creationist:

### **Steve McRae**

A real scientist doesn't assume their conclusion, they go where the evidence leads them. No scientist should EVER start with a conclusion. That is just bias and not how science is done.

### **Steve Hays**

Wasn't Relativity inspired by thought-experiments and mental pictures long before Einstein had empirical confirmation? What about Pauli's dreams. Or Dirac's mathematical intuition, based on "beauty"? What about Newton's bucket and Newton's canon?

Actually, a basic function of scientific theorizing is to go beyond the available evidence by making predictions. In many cases, a scientist wouldn't need to make a prediction in the first place if he already had the evidence in hand. Predictions are not simply ways of testing a theory, but discovering new evidence. A theoretical prediction points scientists in a particular direction. They look for evidence where the theory predicts they should find it. Sometimes that confirms the theory, sometimes that discomforts the theory.

Take Bell's theorem. That was formulated well before the equipment existed to test the theoretical experiment.

McRae is operating from a simple-minded positivism.



## NOMA

The lack of conflict between science and religion arises from a lack of overlap between their respective domains of professional expertise—science in the empirical constitution of the universe, and religion in the search for proper ethical values and the spiritual meaning of our lives. The attainment of wisdom in a full life requires extensive attention to both domains—for a great book tells us that the truth can make us free and that we will live in optimal harmony with our fellows when we learn to do justly, love mercy, and walk humbly.

Religion is too important to too many people for any dismissal or denigration of the comfort still sought by many folks from theology. I may, for example, privately suspect that papal insistence on divine infusion of the soul represents a sop to our fears, a device for maintaining a belief in human superiority within an evolutionary world offering no privileged position to any creature. But I also know that souls represent a subject outside the magisterium of science. My world cannot prove or disprove such a notion, and the concept of souls cannot threaten or impact my domain. Moreover, while I cannot personally accept the Catholic view of souls, I surely honor the metaphorical value of such a concept both for grounding moral discussion and for expressing what we most value about human potentiality: our decency, care, and all the ethical and intellectual struggles that the evolution of consciousness imposed upon us.

[http://www.stephenjagould.org/library/gould\\_noma.html](http://www.stephenjagould.org/library/gould_noma.html)



That's a classic statement of the no-conflict thesis regarding the relationship between science and religion. They cannot directly compete with each other because they make claims about different domains. The scope of science is the physical real whereas the scope of religion is moral and spiritual realm—assuming such a realm exists.

Not surprisingly, Gould's position has been attacked as an ad hoc compromise by Christians and atheists alike. But ironically, Gould is taking the same position as proponents of methodological atheism, who insist on the same compartmentalization. They typically defend methodological atheism on three grounds: by definition, scientific method disallows supernatural or teleological explanations; supernatural are explanations are untestable; and making room for supernatural explanations would bring science to a grinding halt.

Atheists invoke the same strictures in reference to historiography. It's not that reported miracles are false; rather, reported miracles aren't even false. They fall outside the purview of what historians can take into consideration. So historians and scientists must be neutral on the supernatural. That's not something they're in a position to affirm or deny, for supernatural claims are both unverifiable and unfalsifiable—at least by scientific and historiographical criteria.

But that generates an acute dilemma for atheists. Methodological naturalism commits them to the no-conflict thesis.

In addition, W. V. Quine, high priest of scientism, had some radical concessions regarding the limitations of scientific knowledge:

It would address the question of how we, physical denizens of the physical world, can have projected our scientific theory of that whole world from our meager contacts with it; from the mere impacts of rays and particles on our surfaces and a few odds and ends such as the strain of walking uphill, **FROM STIMULUS TO SCIENCE** (Harvard 1999), 16.

There is a puzzle here. Global stimuli are private: each is a temporally ordered set of some one individual's receptors. Their perceptual similarity, in part innate and in part modeled by experience, is private as well. Whence then this coordination of behavior across the tribe? (20).

The sensory atomist was motivated, I say, by his appreciation that any information about the world is channeled to us through the sensory surfaces of our bodies; but this motivation remained obscure to him. It was obscured by his concern to justify our knowledge of the external world. The justification would be vitiated by circularity if sensory surfaces and external impacts on nerve endings had to be appealed to at the outset of the justification, "**CONFESSIONS OF A CONFIRMED EXTENSIONIST AND OTHER ESSAYS** (Harvard 2008), 328.

There is much clarity to be gained by dropping the project of justifying our knowledge of the external world but continuing to investigate the relation of that knowledge to its sensory evidence. Obscurity about the nature of the given, or epistemic priority, is then dissipated by talking frankly of the triggering of nerve endings. We then find ourselves engaged in an internal question within the framework of natural science. There are these impacts of molecules and light rays

upon our sensory receptors, and there is all this output on our part of scientific discourse about sticks, stones, planets, numbers, molecules, light rays, and, indeed, sensory receptors; and then we pose the problem of linking that input causally and logically to that output (328).

Much as I admire [David] Lewis's reduction, however, it is not for me. My own line is a yet more sweeping structuralism, applying to concrete and abstract objects indiscriminately. I base it, paradoxically as this may seem, on a naturalistic approach to epistemology. Natural science tells us that our ongoing cognitive access to the world around us is limited to meager channels. There is the triggering of our sensory receptors by the impact of molecules and light rays. Also there is the difference in muscular effort sensed in walking up or down hill. What more? Even the notion of a cat, let alone a class or number, is a human artifact, rooted in innate predisposition and cultural tradition. The very notion of an object at all, concrete or abstract, is a human contribution, a feature of our inherited apparatus for organizing the amorphous welter of neural input (402-03).

The conclusion is that there can be no evidence for one ontology as over against another, so long anyway as we can express a one-to-one correlation between them. Save the structure and you save all. Certainly we are dependent on a familiar ontology of middle-sized bodies for the inception of reification, on the part both of the individual and of the race; but once we have an ontology, we can change it with impunity (405).

This global ontological structuralism may seem abruptly at odds with realism, let alone naturalism. It would seem even to undermine the ground on which I rested it: my talk of impacts of light rays and molecules on nerve endings. Are these rays, molecules,

and nerve endings themselves not disqualified now as mere figments of an empty structure? (405).

Naturalism itself is what saves the situation. Naturalism looks only to natural science, however, fallible, for an account of what there is and what what there is does. Science ventures its tentative answers in man-made concepts, perforce, couched in man-made language, but we can ask no better. The very notion of object, or of one and many, is indeed as parochially human as the parts of speech; to ask what reality is really like, however, apart from human categories, is self-stultifying. It is like asking how long the Nile really is, apart from parochial matters of miles or meters. Positivists were right in branding such metaphysics as meaningless (405).

So far as evidence goes, then, our ontology is neutral. Nor let us imagine beyond it some inaccessible reality. The very terms 'thing' and 'exist' and 'real,' after all, make no sense apart from human conceptualization. Asking after the thing in itself apart from human conceptualization, is like asking how long the Nile really is, apart from our parochial miles or kilometers (416). So it seems best for present purposes to construe the subject's stimulus on a given occasion simply as his global neural intake on that occasion. But I shall refer to it only as neural intake, not stimulus, for other notions of stimulus are wanted in other studies, particularly where different subjects are to get the same stimulus. Neural intake is private, for subjects do not share receptors (463-64).

But in contrast to the privacy of neural intakes, and the privacy of their perceptual similarity, observation sentences and their semantics are a public matter, since the child has to learn these from her elders. Her learning then depends indeed both on the public currency of the observation sentences and on a

preestablished harmony of people's private scales of perceptual similarity (464).

These reflections on ontology are a salutary reminder that the ultimate data of science are limited to our neural intake, and that the very notion of object, concrete or abstract, is of our own making, along with the rest of natural science and mathematics (471).

On Quine's view, it's appearances all the way down. Not in the metaphysical sense that there's no bedrock reality which underlies appearances, but in the epistemological sense that bedrock reality is undetectable. Scientific observation, experimentation, and theorizing can never get behind perception to describe what the world is really like apart from perception.

This, however, might have the ironic consequence that theological explanations, unlike scientific explanations, do have the potential to describe ultimate reality. In principle, there are two ways that could be the case:

**i)** Some theological explanations appeal to modal intuitions. They aren't filtered through sensory perception.

**ii)** If Scripture is divine revelation, then God's knowledge circumvents appearances. He doesn't know the world via sensory perception. Rather, he knows the world because it corresponds to his plan or idea for the world. And he can share his creative ideas with humans.

It's analogous to the difference between seeing a movie and hearing a director explain what he had in mind. That enables the viewer to get in back of the film. To access it from the privileged viewpoint of the film's creator.

This upends the way many people relate faith and science: instead of science getting to the bottom of things while theology is about airy-fairy stuff and wishful thinking, it's theology that gets to the bottom of things.

## What is the God-of-the-gaps?

Atheists frequently accuse Christians of committing the God-of-the-gaps fallacy (hereafter GOG). But what is the God-of-the-gaps fallacy, and what makes it fallacious? From what I can tell, there are at least two different GOG allegations.

**1.** GOG short-circuits the search for natural mechanisms. For instance, prescientific people don't know about viruses and bacteria, so they explain epidemics in terms of divine displeasure.

**i)** There may well be examples of that. However, Christian theism doesn't regard direct divine agency as a general substitute for natural mechanisms. Rather, the role of God is one step removed. God created the natural mechanisms.

**ii)** This is not to deny that divine agency is often invoked to explain certain events within the ongoing history of the world. Miracles are a classic example.

But that's not GOG reasoning, for atheists are the first to admit that certain kinds of events are naturally impossible. If they happened, they'd require supernatural agency. Atheists generally respond to reported miracles, not by crediting the report while attributing the cause to an undiscovered natural mechanism, but by denying the accuracy of the report.

**2.** Another version goes something like this: GOG is fallacious because naturalism is the standard of comparison. To say "God did it" is unscientific because physical causes are the only admissible explanation. On that view, any

appeal to supernatural agency is by definition a fallacy. It's sufficient to identify the explanation as theistic or supernatural, then slap the "fallacy" label on the explanation. Nothing more is required to refute it.

But that's a transparent rhetorical ploy. Concoct a tendentious fallacy, then apply it to the position you oppose.

Yet that begs the question of whether it really is a fallacy and why. That's a shortcut that endeavors to win the argument without having to even present an argument.

To make naturalism the standard of comparison begs the question. The very issue in dispute is whether there is supernatural agency. That can't be settled at the outset by prejudicial stipulation.



## No Buddhist science

One atheist objection to Christianity goes like this: there is no Muslim science, Hindu science, Buddhist science—there's just science. Science isn't sectarian. It's the same everywhere. The transcultural nature of science is due to the fact that science, unlike religion, is grounded in objective, detectable, verifiable reality. I believe Richard Dawkins has popularized this claim, although I don't have a quote at my fingertips.

Up-to-a-point that's true, but deceptive. Scientific agreement depends on taking many metaphysical and epistemological positions for granted. Given the rules of the game, there's a lot more agreement than in religion. But when you shift from scientific practice to the philosophy of science, agreement disappears.

Moreover, there are different kinds of science. Some are more abstract than others. When we get into theoretical physics and quantum mechanics, science and philosophy of science blend. And that's not confined to philosophers of science. For some major scientists like Mach, Poincaré, Einstein, Bohr, Penrose, and Hawking, science and the philosophy of science are interwoven, and fundamental fault-lines surface. To take another example, consider Russell's famous thought-experiment:

There is no logical impossibility in the hypothesis that the world sprang into being five minutes ago, exactly as it then was, with a population that "remembered" a wholly unreal past. There is no logically necessary connection between events at different times; therefore nothing that is happening now or will happen

in the future can disprove the hypothesis that the world began five minutes ago.

And here's a formal argument for Last Thursdayism:

<http://alexanderpruss.blogspot.com/2016/09/a-defense-of-five-minute-hypothesis.html>

Pruss doesn't subscribe to Last Thursdayism, but his formulation quickly exposes the specious contrast between science and religion. You only need to peel back a few layers to show how theory-laden science really is.

## Occam's razor

In answer to an email correspondent:

**1.**A materialistic explanation is simpler if everything is material. But that begs the question of whether everything is material.

If dualism is true, then a materialistic explanation will be more complicated since a materialist will have to come up with ingenious theories to explain away immaterial objects and substitute material surrogates which have the same explanatory power as the immaterial objects.

**2.**We need to distinguish between theoretical simplicity and ontological simplicity. And there's frequently a tradeoff between the two. A richer ontology may simplify our theoretical explanations, and vice versa.

<http://plato.stanford.edu/entries/simplicity/>

You have unbelievers who try to evade the teleological argument by postulating a megaverse. But is that the most parsimonious explanation? As one physicist said, "Take your choice: blind chance requires multitudes of universes, or design that requires only one."

**3.**Take Dawkins' famous, programmatic claim that "biology is the study of complicated things that give the appearance of having been designed for a purpose."

What is the simplest explanation for the appearance of design? The most direct, straightforward explanation is that natural objects appear to be designed because they are designed.

Of course, Dawkins regards the appearance of design as illusory. But in that event, he must explain it away.

He doesn't go with the simplest explanation. Indeed, he writes entire books full of computer simulations and evolutionary conjectures to avoid the simplest explanation.

BTW, it's possible for appearances to be deceptive (e.g. optical illusions). I'm not claiming that something must be the way it appears to be. I'm merely answering the secular Occamist on his own grounds.

**4.**Of course, Dawkins' fallback is to claim that a designer is more complicated than the thing he designed, which results in a vicious regress.

But as many critics have pointed out, including some secular critics, he's equivocating.

For example, the Mandelbrot set is infinitely complex. Yet it's ontological simple in the sense that it has no spatiotemporal divisions.

**5.**Let's go back to dualism for a moment. Experience is dualistic. Experience presents us with a distinction between mind and matter. A thought of blue is not a blue thought.

Thinking about running and running are not equivalent. Running involves many empirical properties which are absent when I merely think about running. Running makes me sweaty and tired. But I can think about running without panting or perspiring.

The simplest explanation for the experience of dualism is that reality seems to be dualistic because it is dualistic.

Now perhaps this impression is illusory. A materialist like Daniel Dennett writes entire books in which he tries to reduce mind to matter.

But even if he were successful, his explanation would hardly be the simplest one available.

**6.**What constitutes a scientific explanation, anyway? Secular science has tried to banish teleological explanation from science. But that is problematic, to say the least.

Suppose I have a heart attack. I'm treated by a cardiologist. He tries to restore my heart to proper working order.

Yet the heart can only malfunction if the heart has a function to perform. But if our vital organs weren't designed for a purpose, then the heart isn't supposed to pump blood. It isn't supposed to do anything.

In that case, cardiology is predicated on a false assumption. There is nothing to fix. Nothing to repair.

So the secular exclusion of teleology from nature is a science-stopper. It puts medical science out of a job.

**7.**Christians are not opposed to natural explanations for natural effects. God made the natural world. He made natural forces. Natural kinds. Natural cycles.

However, to say that, given the heart, there is a natural cause for heart disease, and a natural cure for heart disease, is not to say that there's a natural explanation for the given.

Given the natural world, you can explain many events naturalistically. But this doesn't mean that nature is self-explanatory. This doesn't account for the existence of the natural order in the first place.

**8.** Science can only explain what falls within the purview of science. If abstract objects are immaterial, then there is not material explanation for abstract objects.

Is that a science-stopper? In one sense, yes. But science ought to have boundaries appropriate to its subject-matter.

**9.** Consider the debate over the Bacterial Flagellum. Dawkins says it's a cop-out or science-stopper to attribute the flagellum to intelligent design.

But does the ID-theorist deny that there's a \*scientific\* explanation for the flagellum? Or does he deny that there's an \*evolutionary\* explanation for the flagellum?

To deny that there's an evolutionary pathway to the flagellum is not to deny that there's a scientific explanation for the flagellum.

Likewise, an ID-theorist might deny that there's a naturalistic evolutionary pathway, but allow for a theistic evolutionary pathway.

An ID-theorist doesn't regard design as something over and above the natural world (although he views the designer as transcendent). He thinks that design is built into nature.

For him, the tension between a theistic explanation and a scientific explanation is a false dichotomy.

Dawkins is tacitly equating and limiting a scientific

explanation to an evolutionary explanation in general, and a secular explanation in particular (i.e. naturalistic evolution). But those are hardly synonymous concepts.

And by arbitrarily restricting a scientific explanation to an evolutionary explanation, isn't that a science-stopper?

He only allows certain explanations to count. Science is only allowed to answer the questions that he puts to science. He dictates a very limited repertoire of permissible answers.

**10.** Suppose a given explanation is a science-stopper? So what? The question at issue is not whether a given explanation is a scientific explanation, but whether it's the best explanation.

Much of the time a scientific explanation may be the best explanation. A scientific explanation may often be the best explanation for the pathology of the illness. It may often be the best explanation for healing.

But suppose a medical diagnosis fails. Suppose medical treatment fails.

Suppose the evidence points in the direction of the occult. The patient is possessed. Or he's the victim of black magic. Suppose the patient is cured through prayer or exorcism.

Well, that explanation may be a science-stopper, but what's the value of a scientific explanation unless it's the correct explanation? And what about cases where the best explanation lies outside the four walls of the laboratory?

## Miracles and methodological naturalism

If a "historian" or "scholar" chooses to apply methodological naturalism to the Bible, he will have to pay for that move in two respects:

1. Remember that methodological naturalism allows for the possibility of miracles. What it disallows is making allowance for miracles in the interpretation of a natural or historical event.

It cannot rule out the occurrence of the miraculous because it's a purely methodological principle. To declare miracles impossible would amount to a metaphysical claim.

But this, in turn, generates the following dilemma. Since methodological naturalism must make room for the possibility of miracles while, at the same time, ruling out a miraculous interpretation of a natural or historical event, then methodological naturalism must take the position that a naturalistic explanation is always preferable even if a naturalistic explanation is false.

That is to say, by making allowance for the possibility of miracles, it must also allow for the possibility that a miraculous explanation might sometimes be the true explanation. And yet it cannot permit a miraculous explanation for any event. Hence, it cannot permit a miraculous explanation even if the miraculous explanation happens to be the best explanation of the event. Happens, indeed, to be the correct explanation.

Why would any responsible historian or scholar commit himself to a methodology that automatically precludes or excludes the true interpretation of a natural or historical



event? What's the value of a methodology that forbids you from ever considering an interpretation which may, in fact, be the correct interpretation?

Isn't the value of a historical or scientific method to arrive at a true explanation?

2. But methodological naturalism generates yet another conundrum. If a "historian" or "scholar" adopts methodological naturalism, then he thereby forfeits the right to classify miracles as improbable. For probability is a metaphysical concept. It involves a claim about the nature of the world. Yet what supposedly distinguishes methodological naturalism from metaphysical naturalism is the ontological neutrality of methodological naturalism.

In that event, methodological naturalism is debarred from treating supernatural events as any less probable than natural events. There can be no antecedent presumption one way or the other.

But in that case, a "historian" or "scholar" who applies methodological naturalism to the Bible can't very well claim that any other explanation, however unlikely, is still more likely than a supernatural explanation. To do so would smuggle in metaphysical naturalism under the guise of methodological naturalism.

Yet if methodological naturalism can't properly treat a supernaturalistic interpretation of events as any less likely than a naturalistic interpretation of events, then what conceivable warrant does it have to invariably favor a naturalistic interpretation over a supernaturalistic interpretation? Logically speaking, it should be equally open to both possibilities.



## Methodological self-refutation

The major reason unbelievers say they reject Gen 1 is because Gen 1 is said to be unscientific, or contrary to science. We know from modern cosmology, geology, botany, and zoology that that's not how it happened.

But let's hold that thought for a moment and compare that to another consideration. For many of the same unbelievers who reject Gen 1 on scientific grounds also subscribe to methodological naturalism. Here's a representative statement of methodological naturalism:

There are two basic principles of science that creationism violates. First, science is an attempt to explain the natural world in terms of natural processes, not supernatural ones. This principle is sometimes referred to as methodological naturalism...Nonmaterial causes are disallowed.

When a creationist says, "God did it", we can confidently say that he is not doing science. Scientists do not allow explanations that include supernatural or mystical powers for a very important reason. To explain something scientifically requires that we test explanations against the natural world. A common denominator for testing a scientific idea is to hold constant ("control") at least some of the variables influencing what you are trying to explain. Testing can take many forms, and although the most familiar test is the direct experiment, there exist many research designs involving indirect experimentation, or natural or statistical control of variables.

Science's concern for testing and control rules out supernatural causation. Supporters of the "God did it" argument hold that God is omnipotent. If there are omnipotent forces in the universe, by definition, it is impossible to hold their influences constant; one cannot "control" such powers. Lacking the possibility of control of supernatural forces, scientists forgo them in explanation. Only natural explanations are used. No one yet has invented a theometer, so we will just have to muddle along with material explanations.

<http://ncse.com/rncse/23/1/my-favorite-pseudoscience>

For reasons I've given elsewhere, I think methodological naturalism is unscientific. But for the sake of argument, let's play along with methodological naturalism.

If we take that methodology for granted, then what does it mean to say Gen 1 is unscientific? It would mean that things didn't happen that way if you leave God out of the picture.

But this also means that if you do take God into account, then you're in no position to say it didn't happen that way. In fact, Eugenie Scott's explicit justification for methodological naturalism is that *If there are omnipotent forces in the universe, by definition, it is impossible to hold their influences constant; one cannot "control" such powers.*

But in that event, she can't rule out the possibility (or even probability) that Gen 1 is factual. Moreover, she can't say Gen 1 has been falsified by the scientific evidence, for on her definition, scientific evidence can't take divine agency into account. Therefore, it would be viciously circular for her to appeal to the scientific evidence against Gen 1 if, by definition, her method disallows supernatural causes. For in

that case, she's preemptively excluded potential counterevidence. By her own admission, allowing for the possibility of divine agency introduces uncontrollable variables into the process. But if science can't make allowance for divine agency, then science can't say what God would or would not have done in that situation. Indeed, on that definition, science can't even say that divine agency is improbable in that situation. She's disqualified science from making judgments about divine agency one way or the other. But that leaves the question open-ended.

## Our make-believe parents

Jared Oliphint recently posted an article on the evolutionary debate:

<http://www.reformation21.org/articles/our-makebelieve-parents-when-adam-becomes-more-fiction-than-fact.php>

Jared is the son of Scott Oliphint, the WTS apologetics prof. Unfortunately, his argument is rather hazy.

You can respond to the "problem" at one of three different levels.

i) You can respond directly. At the same level as the alleged evidence. Ostensible evidence is given. You cite counterevidence. Go toe-to-toe with the Darwinian.

In some ways, that's the best way to respond. But it requires a certain degree of scientific expertise. That's the level at which intelligent-design theorists and young-earth creationists respond. Those with the

requisite training. They answer the Darwinian on his own grounds. Point/counterpoint.

**ii)** You can respond at a more philosophical level. Show that evolutionary biology is critically underdetermined by the evidence. A Darwinian may seem to base his position on hard evidence, but he's sneaking in key philosophical assumptions that not only go beyond the evidence, but *behind* the evidence.

A blatant example is how often Darwinians find it necessary to take refuge in methodological atheism. That's a tacit admission that the physical evidence alone doesn't yield evolution. Especially in historical sciences, it's necessary to extrapolate from the present to the past—as well as postulating interpolations to plug all the lacuna in the natural record. Darwinians must posit continuity. Linearity. Natural laws. That's not given in the raw evidence. Rather, that's a framing device. That's outside the extant evidence.

It's not as if we have live footage of land animals incrementally turning into whales—or fish turning into salamanders, turning into lemurs, turning into man.

You can rearrange fossil remains into an evolutionary narrative, but that's an artistic depiction. Nine parts imagination to one part evidence.

**iii)** You can appeal to the transcendental authority of Scripture to trump the alleged evidence. That's a blocking maneuver. And that seems to be what Oliphint is hinting at. But there are two problems:

**a)** He raises objections to the historicity of Adam, then leaves them hanging out there. There's nothing to robustly counter the objections that he himself put on public display. All the weight lies on one side of the seesaw. What impression does that make on the reader?

**b)** He doesn't make a case for the transcendental authority of Scripture. That's just assumed.

Towards the end he links to a list of resources, but most of those are systematic theology. Yet that's the very thing under fire.

In general, it's a mistake for an apologist to raise objections he isn't prepared to address head-on. It's one thing to raise objections for the sake of argument, as a preliminary move to go back and knock them



down—one-by-one. It's quite another thing to raise objections, then leave them intact. That's counterproductive. Showing the Darwinian triumphantly seated at one end of the seesaw, with nothing to counterbalance, much less overthrow, the ostensible evidence, is a pretty maladroit approach.

## The clockwork universe

*While the earth remains, seedtime and harvest, cold and heat, summer and winter, day and night, shall not cease (Gen 8:22).*

The scientific method treats the world as a closed system. A continuum of physical cause and effect. Nothing from the "outside" bypasses the chain of cause and effect.

And that's the basis for induction. The present resembles the past, and vice versa. And that, in turn, forms the basis for sciences of origins (e.g. cosmology, geology, paleontology, paleoanthropology).

And there's some truth to that. In the Biblical worldview, nature *generally* operates *as if* it's a closed system. *Ceteris paribus*, there's nothing wrong with presuming continuity.

And yet, according to the Biblical worldview, nature is actually an open system. Open to agents (e.g. God, angels, demons, ghosts, sorcerers, miracle-workers) who can, and sometimes do, bypass the causal continuum. Open to the introduction of causes outside the ordinary chain of physical cause and effect.

As Christians, we must make allowance for the possibility, and actuality, that induction breaks down at unpredictable points along the line. A miracle both interrupts and restarts the process. The natural order resumes after the miracle. But it resumes at a different point than if the miracle had not occurred. A miracle may not mere restart, but jumpstart or reset the process. Advance the outcome or change the outcome. Take miraculous healing.

That's not some ad hoc consideration. It's fundamental to the Christian worldview. To Christian supernaturalism and

dualism.

And that's something which theistic or deistic evolutionists refuse to take into account. They don't take that seriously. They operate as though nature really is a closed system. Indeed, some of them think that's the case. They are really back to the clockwork universe.

There are scientists with a very literal-minded view of reality. Victor Stenger is a case in point. They have a rule-bound mindset. They think nature always follows the rules. Indeed, they think nature ought to follow the rules. As though nature made them a promise. If a miracle happens, then nature broke its promise. A miracle is "cheating." They indulge in that childish personification of nature.

## Adam-of-the-gaps

I've been reading *Adam, the Fall, and Original Sin*, Hand Madueme and Michael Reeves, eds. It's an uneven collection of essays. For now I'd like to focus on the scientific question. Mdueme puts his finger on one difficulty with theistic evolution and/or old-earth creationism:

One weakness, however, is the potential of an Adam-of-the-gaps fallacy. Paleontology, paleoanthropology, and associated disciplines are judged basically reliable as sources of truth and they provide the main story; the task of the theologian is then to find a way to identify the historical Adam *within* that story (237).

That certainly looks like an ad hoc amalgam of two divergent paradigms. Young-earth creationism doesn't have that problem. But it trades that problem for a different problem: challenging the science that drives old-earth creationism and theistic evolution.

**1)** Let's some general observations about the scientific method. All things being equal, an operating assumption of scientists is that the past produces the future. Antecedent conditions effect subsequent conditions.

The same physical causes produce the same physical effects. In that respect, past and future resemble the present. Therefore, taking our knowledge of the present as a frame of reference, we can extrapolate forward and backward.

For instance, dating techniques presume constancy in the rate of natural processes. Likewise, evidence for human evolution based on population genetics (e.g. the

"bottleneck") presumes constancy in the rate natural processes.

Physical causes operate with mechanical regularity. They do whatever they were programmed to do—no more and no less.

**2)** Up to a point, that's a reasonable assumption. And it has some theological warrant. We call this ordinary providence.

So, for instance, a Christian goes to the doctor, under the assumption that diseases typically have physical causes which are physically treatable.

**3)** However, that's qualified. If nature takes its course, a terminal cancer patient will die.

Sometimes, however, a terminal cancer patient undergoes remission in answer to prayer. In that situation, past conditions don't produce or predict for future conditions. In that case, the outcome doesn't belong to the chain of events (i.e. physical causation).

That's because physical causes are not the only causes. Not even the only causes of physical effects.

That, however, interjects a degree of unpredictability into the presumption of continuity between past, present, and future.

The history of the world contains singularities. Outcomes discontinuous with prior states. Indeed, the world began with a singularity: fiat creation.

In addition to that macrocosmic singularity, the history of the world is punctuated by microcosmic singularities.

Miracles which bypass the causal continuum.

All things being equal, linear extrapolations from the present into the past are reasonable. But that means bracketing kinds of mental agency which produce immediate physical effects. By "immediate," I mean apart from an intervening physical medium. Candidates include God, angels, demons, ghosts, and human psi.

Because God usually operates behind the scenes, working via physical means, it's easy to ignore God when we do science. God is like a necessary background condition. Unobtrusive. We don't expect God to intervene at any particular time and place, so our default policy treats the course of nature as the norm.

But it's precisely because divine intervention is unpredictable that scientific prediction or retrodiction is unreliable to some imponderable degree. We can't quantify when or where God (or other agents) will interrupt the course of nature. That interjects an unstable element into historical reconstructions. The scientific method is arbitrary in that respect. It's true—except when it's false.

That's why pious Christians have a two-track policy. We presume ordinary providence, but we also pray.

Nature is like a machine. It has a default setting. But it also has a manual override. God can break the cycle in answer to prayer.

**4)** Moreover, this isn't just hypothetical. There's more to human history than ordinary providence. There's special providence. And miracles. And answered prayer. And the occult.

Let's consider some of the putative evidence for human evolution:

**i)** Comparative anatomy. There are fossil remains of creatures that have a humanoid appearance. Hands. Skulls. Bipedalism.

There are, however, problems with that line of evidence:

**a)** Ostriches and kangaroos are bipedal. But that doesn't relate them to man. Some bats, marsupials, and chameleons have opposable digits. But that doesn't relate them to man.

**b)** Moreover, bipedalism is unrelated to cognitive ability.

**c)** Modern humans coexist with apes and monkeys. We share morphological similarities, yet there are drastic cognitive differences. Why think fossil "hominids" must be anything other than extinct apes and monkeys?

**ii)** Apropos (i), some "hominids" use tools, yet that, by itself, isn't probative. There are animals that use tools, viz. crows, sea otters, green jays, trapdoor spiders, and woodpecker finches.

Or take beehives and spiderwebs. If apes and monkeys did that sort of thing on a larger scale, Darwinians would chalk it up to simian brainpower.

Most fossil artifacts aren't uniquely human in that regard. Cave paintings and musical instruments are unmistakably human. But much of the other "evidence" is quite ambiguous.

**iii)** Another line of putative evidence is the alleged correlation between cultural evolution and encephalization. That, however, is tricky to parse.

**a)** To begin with, the relationship between minds and brains is somewhat baffling. For instance:

<http://www.psych.ufl.edu/~steh/PSB4504/brainnecessary.pdf>

**b)** Knowledge is cumulative. Knowledge builds on knowledge. And the rate of progress can accelerate. We see that in the rapidity of technological advances. It takes a long time to get to the tipping point. After that, the rate of progress picks up pace. Crossing that threshold is the hard part.

Gen. Curtis LeMay reputedly said we should bomb the Viet Cong back to the Stone age. Suppose something like that happened to human civilization.

As long as modern know-how survived, we could probably get back to where we were in a few decades. If, however, the knowledge was lost or forgotten, then it would take centuries or probably millennia to start from scratch.

You can't have a Newton without a Kepler. You can't have an Einstein without a Riemann or Mach. If Einstein was born before Riemann or Mach, he wouldn't develop Relativity.

And it's a matter of space as well as time. If Linus Pauling, Paul Dirac, or Claude Shannon were born in the Amazon jungle, and never made contact with the outside world, their genius would go to waste.



In addition, some scientists, like Newton or von Neumann have a unique skill set. If we had to start all over again, you wouldn't have a Newton, Einstein, or von Neumann. You'd have other geniuses with different skill sets.

Although we might make the same scientific breakthroughs, we wouldn't make them in the same order. It might be sooner or later. You might have scientific theories which overlap with the theories we have, but the pieces would be rearranged. The pieces would come together in different ways at different times.

## Del Ratzsch on methodological naturalism

TGL: In your review *Design Theory and its Critics*, you wrote that "If (perhaps for overwhelmingly good reasons) science is restricted (even just methodologically) to 'natural' explanatory and theoretical resources, then if there is a supernatural realm which does impinge upon the structure and/or operation of the 'natural' realm, then the world-picture generated by even the best science will unavoidably be either incomplete or else wrong on some points. Unless one assumes philosophical naturalism (that the natural constitutes the whole of reality) that will be the inescapable upshot of taking even mere methodological naturalism as an essential component of scientific procedure." This suggests that the distinction between the two forms of naturalism collapses, but there seems to be little awareness of the argument. Do you intend to develop it further?

DR: I have discussed it some elsewhere (e.g., in "Natural Theology, Methodological Naturalism, and 'Turtles all the way down'" (*Faith and Philosophy*, Vol 21 #4, October 2004, pp. 436-455)).

[...]

The basic problem with pre-stipulated conceptual/theoretical boundaries is that if reality itself happens to fall outside those boundaries, theorizing within the confines of those boundaries will inevitably generate either incompleteness or error. But methodological naturalism just is a stipulated prohibition on anything outside the 'natural' playing any conceptual role in scientific theorizing and explanation. If it turns out that reality chooses to ignore our restrictions (and why on earth shouldn't it?), then theorizing forbidden to cross those

boundaries will inevitably be either incomplete or mistaken.

Here is an analogy. [All right - caught analogizing again.] Suppose that during the final pre-launch crew briefing for NASA's first manned mission to Mars, the head of NASA warns the crew of the dangers of starting public panics and instructs them to make no mention in any of their reports of aliens - regardless of what they happen to find on Mars. The restriction does make some sense. But suppose that the first thing the crew sees upon exiting their lander is an utterly undeniable Martian bulldozer. The question instantly arises: where did that come from? But the crew has a problem answering that question. Given the prohibition barring reference to aliens, the crew has only two options: (a) they can refrain from addressing the question, or (b) they can construct a theory of the chemical evolution of Martian bulldozers. But that means that their science of Mars will be either (a) woefully incomplete - leaving out perhaps the single most fascinating aspect of the mission - or (b) outrageously mistaken.

[...]

But even just methodological naturalism conjoined with aspirations for completeness has substantive implications. First, if one restricts science to the natural, then assumes that science can in principle get to all truth, then one has implicitly presupposed philosophical naturalism. But even if one merely stipulates methodological naturalism as essential to science, then assumes only that science is competent for all physical matters, or that what science (properly conducted in the long run) does generate concerning the physical realm will in principle be truth, then if the truth of the specific matter in question is non-natural, even the most excruciatingly proper naturalistic scientific deliverances on that matter may be wide of the mark,

typically in exactly the way a science built on philosophical naturalism would be. For practical purposes, that comes close to importing philosophical naturalism into the structure of science.

So whether methodological naturalism has substantive philosophical implications (contrary to the common denial) or is philosophically neutral depends upon what it operates in tandem with. At the least, methodological naturalism makes the de facto assumption that there is an identifiable realm of reality which is on the scientifically relevant level functionally self-contained, and which is on that level functionally de-coupled from the supernatural. That assumption is neither obvious, trivial, nor - since it is an empirical universal negative - demonstrable.

But to actually answer your question, I may try to push it a bit further. But despite the above (and some other) reservations and qualifications, I think that methodological naturalism is a useful - perhaps even essential - provisional strategy, and one not to be lightly overridden.

TGL: Much has been made of the importance of methodological naturalism, particularly as definitive of what makes something science. What do you think of the arguments in its favour?

DR: Arguments for its value as a provisional strategy may be right. But even as a strategy, it has to be used with care. Over-rigid adherence can (as indicated earlier) have consequences for the self-corrective nature of science, and it can have other consequences (as noted just above) if care is not taken concerning what assumptions it is employed with.

Arguments for it will depend in part on exactly what

methodological naturalism is, and more care is required there than is sometimes given. For instance, it is quite common to see methodological naturalism defined as a requirement that science be restricted just to natural concepts, resources, data, and theories, that being interpreted to mean that whether or not philosophical naturalism is true, science must proceed as if it is. (That, for instance, is the position of the National Center for Science Education - or at least of its director.) But the problem here is that (as Boyle pointed out three plus centuries ago) nature in a created universe might well - indeed most likely would - be very different from nature in a random, chance universe. Thus, the typical equating of a restriction to the natural with proceeding as if philosophical naturalism is true, turns out to beg some deeper questions.

Most of the actual arguments for methodological naturalism being a definitive, unchallengeable rule of science seem to me to be problematic. Very briefly, the three most common types of arguments are (1) arguments that anything non-natural is outside the realm of empirical detectability or testability, (2) arguments that allowing the non-natural into science is destructive in that it allows scientists to take the lazy way out in difficult scientific situations (simply saying "Well, God must have done that - no point in trying to figure it out", then wandering off to find the coffee pot) and (3) historical arguments claiming that the history of science has shown the bankruptcy of non-natural considerations in science. The first is the most prima facie plausible, but I think that there could be possible empirical cases in which the most reasonable conclusion would be that something supernatural was at work. (That's one of the cases I try to make in *Nature, Design and Science*.) Regarding the second, it is often the conviction that something is a product of design that keeps scientists in the hunt. Any company trying to reverse engineer a competitor's new

computer model pays particular attention to puzzling components - refusing to give up trying to understand it precisely because they believe it to be a product of design. And of course historically most scientists took nature to be a product of design, and saw themselves as in effect reverse engineering nature - trying (as Kepler is alleged to have said) to think God's thoughts after him. The fundamental intelligibility of nature consequent upon its being designed by God was one of the key motivations underpinning the whole scientific project.

<http://www.galilean-library.org/manuscript.php?postid=43816>

## The boy in the barbershop

**1.** I'm noncommittal on the antiquity of the universe. I'm open to old-earth creationism and new-earth creationism in that regard. A stock objection to mature creation is that it's deceptive. For instance, if the universe is only about 6-10K years old, then when we see a supernova, we're witnessing a nonevent. There never was a supernova corresponding to what we see, because the universe isn't old enough for the light to travel from the point of origin to earth, measured in lightyears.

**2.** However, that objection poses a conundrum for the critic of mature creation. It posits a discrepancy between appearance and reality. We see something in the present, but in reality, we're witnessing the past, like a photograph of an event taken from the distant past. So the "deception" is relative to the background knowledge of the observer. According to modern astronomy, the supernova we see may no longer exist. Yet an ancient observer would assume that if he sees it, it must be there. So the objection of deception cuts both ways.

**3.** This raises the problem of the observer in science. If physicalism is true, the observer is the brain, connected to sense organs. This means the observer never perceives the external world directly. Indeed, he can only see eyes with eyes. He can't directly observe the instrument he uses to make observations with. So he has no way of independently confirming that he even has sense organs. The observer can't observe himself apart from himself. He can't assume the role of an outside observer. He can't step outside of himself to observe what he's really like, or what the world is really like. All he has to go by are his impressions.

**4.** If anything, the problem is more acute regarding the origin of the world. Since that starts from nowhere, it could start anywhere. An absolute beginning is bound to be artificial. There's no right or wrong way to begin.

**5.** As a young boy, I remember sitting in a barbershop. I was sitting in the barber chair, having my hair cut. It was one of those neat swivel pump chairs. Behind me was a mirror all along that side of the shop. In front of me was another mirror. The combination of the two mirrors generated an infinite=y mirror. Sitting in the chair, I could see my reflection multiplied, receding into the never-ending distance, in ever smaller images. Boxes within boxes.

Of course, that's an optical illusion, but I knew it was an illusion because I was seeing myself. I enjoyed a privileged perspective.

Yet science is all about reducing the first-person viewpoint to a third-person viewpoint. Eliminating that indexical perspective to produce a universal viewpoint.

But in that event, what counts as the unbiased observer? What's the true frame of reference?

Which of those images in the infinity mirror is the correct representation of reality? We can't say the boy in the chair is the unbiased observer, because that's a unique and unrepeatable viewpoint. An outside observer can't tap into his experience. As the boy in the chair, who sees his own reflection, I know that there's an asymmetrical relation between the observer and the images. Yet that's not a third-person viewpoint. That's not the perspective of an outside observer.



In theory, the entire system—the boy, the mirrors, and the barbershop—could be boxes within boxes of an even larger image, like a picture on a wall. The observer could be standing outside the picture, looking at the picture of the boy in the barbershop.

As creatures within the universe, who's the objective observer? Who's the outside observer? Who sees things as they really are? Is the supernova like reflections in a cosmic infinity mirror—or the object producing the reflections?

6. Modern physics is very strange. The theory of relativity is counterintuitive. And quantum mechanics is even more baffling. There are multiple interpretations of quantum mechanics, and it's a choice between one weird interpretation and another weird interpretation.

## Science and possible worlds

At least since the 19C, if not earlier (16-17C), there's been an ongoing debate about whether Christianity and science stand in conflict. On the one hand, critics say science has falsified the creation account and the flood account while neuroscience has falsified the immortal soul. I've discussed those allegations on multiple occasions and have nothing new to say at the moment.

But at a presuppositional level, some apologists argue that the Christian worldview is necessary to justify the scientific interpretation. Elements of this argument include the claim that the rationality of the universe implies a mind behind the universe—while the reliability of human reason needs divine grounding. Likewise, it only works if God created man and the universe in a state of mutual preadaptation, so that the rationality of the universe is at least translucent to human reason, if not altogether transparent.

I think those are legitimate lines of argument, but rather than flesh them out, I'd like to turn to a different line of argument:

Stephen Jay Gould (1989) famously argued that evolutionary history is contingent...Gould claimed that if we could rewind the tape of history to some point in the deep past and play it back again, the outcome would probably be different.

Beatty (2006), however, has shown that there are two different senses of 'contingency' in play in Gould's work. In addition to what Beatty calls contingency as causal dependence—basically, sensitivity to initial conditions—there is a second form of contingency that

Beatty initially called contingency as unpredictability, but now calls contingency per se (Beatty 2016). These two senses of contingency correspond with two versions of the famous thought experiment that Gould (1989) deployed. Sometimes, Gould imagines rewinding the tape of history, tweaking an upstream variable, and then playing the tape back. On other occasions, he talks about playing the tape back from the same initial conditions. Beatty (2016) thinks that both senses of 'contingency' are important, and he takes it that the second sense—contingency per se—must commit us to some sort of causal indeterminism. On the other hand, Turner (2011a) has tried to give an account of this second sense of contingency that is neutral with respect to determinism. His suggestion is that what Gould really cared about was random or unbiased macroevolutionary sorting. Processes such as coin tosses, or random genetic drift, can be random or unbiased (in a sense) without violating causal determinism. One way to think about this is by adopting a frequentist conception of probability: the outcome of a coin toss could be causally determined by small-scale physical influences, but the outcome is still random or unbiased in the sense that over a long series of trials, the ratio of heads to tails will approximate 50:50.

Finally, historical contingency is a counterfactual notion, and although this issue has not gotten as much attention as it deserves, there is a nascent philosophical literature on historical counterfactuals (Tucker 2004: 227ff; Nolan 2013; Radick 2016; Zhao 2017 in Other Internet Resources). The debate about historical contingency can be construed as a disagreement about the truth of various historical counterfactuals. Gould claimed that if things in the

Cambrian had been slightly different, there would be no vertebrates today, let alone humans, while other convergentists claim that humanlike cognitive abilities, language, tool use, and sociality would have evolved even if other things had been different in the past—for example, if the non-avian dinosaurs had not gone extinct.

<https://plato.stanford.edu/entries/macroevolution/#HistCont>

That's also presuppositional. Is natural history contingent? If so, can we make truth-valued counterfactual statements about natural history (or the future, or that matter)? If that's the case, then what grounds the truth of counterfactual scenarios? According to the correspondence theory of truth, a statement about the past is true if it matches something that happened in the past. But in the nature of the case, counterfactual scenarios never happened in the actual timeline, so what makes them true?

The common explanation is to resort to modal metaphysics (i.e. possible worlds). Unexemplified timelines. But that pushes the question back a step. What's the metaphysical basis for possible worlds?

A Christian, or a Calvinist in particular, can say unexemplified timelines inhere in God's imagination and omnipotence. What might have been had God willed an alternative scenario to play out. It may even be the case that these are exemplified rather than unexemplified timelines if God created a multiverse. Unexemplified in our universe, but exemplified in a parallel universe.

So that's another line of argument for the necessity of the Christian worldview to underwrite the scientific enterprise.

Of course, that also needs to be fleshed out. But it's another promising strategy.

## Homologies

**1.** One of the traditional arguments for evolution is anatomical similarities between organisms. A more recent argument is genetic similarities between organisms.

But one question is whether these are two independent lines of evidence. To the extent that anatomical similarities are the result of similar genes, you have a cause/effect relationship between genetic similarities and anatomical similarities. Indeed, this suggests the appeal is circular. Organisms are anatomically similar because they are genetically similar.

I recently said, What's the relationship between greater similarity and sharing more of the same genes? How does genetic affinity and resultant similarity imply evolutionary genealogy? Isn't Singer's inference circular? In such comparisons, you select organisms that have the most in common. Similarity is your selection-criterion. So, by definition, you group organisms according to degrees of similarity or dissimilarity. But the way you arrange them doesn't imply that that's how they developed. Rather, the hierarchy of ascending commonalities is the result of what you selected for. So that relationship is imposed rather than discovered.

Take a bag of colored marbles that range along the spectrum. I can rearrange the random assortment according to any two marbles that are shades of the same color. The color of one marble is more like or less like the color of another marble. Some marbles are nearest in color, some are farthest, some are in-between. Some range along one side of spectrum, some along the other side. It's not

the marbles that single out that particular arrangement, but what I'm looking for.

Let's expand on that by taking another comparison. In traditional painting, red, yellow, and blue are primary colors while green and orange are secondary colors. You produce green by mixing blue and yellow. You produce orange by mixing red and yellow.

Two shades of green are alike because they share the same or similar amounts of blue and yellow. Lighter green has a higher percentage of yellow and lower percentage of blue. Darker green has a lower percentage of yellow and higher percentage of blue. So two shades of green are more alike or less alike depending on the amount of yellow and green they possess.

That's analogous to organisms that are more similar or dissimilar depending on similar or dissimilar genes.

However, while that's consistent with evolution, it doesn't imply evolution. To continue with my analogy, a painter mixes colors for variety. What if God likes variety?

**2.** A Darwinian might object that that's ad hoc. But actually it goes back to the ancient principle of plenitude. That's a theologically respectable rationale that long antedates Darwinism. So it wasn't concocted to deflect Darwinism.

There are, moreover, other explanations for similarity. Why do sharks and dolphins have the same torpedo shape? Because that's an efficient shape for their natural element.

Why do humans and monkeys have forward facing eyes? Because they share a common evolutionary ancestor?

One explanation for forward-facing eyes is that predators need binocular vision. But are fruit-eating monkeys predators?

Another explanation might be that humans need binocular vision for eye/hand coordination. We'd be unable to take full advantage of our hands, with the opposable thumb and fine-motor control, if we had eyes on the side of the head.

**3.** It might be objected that I've oversimplified the argument. To the extent that the fossil record is chronological, there's a developmental pattern.

However, that's difficult to assess. Common ancestry, per se, does not imply macroevolution. For instance, dogs have a common ancestor in wolves. That's consistent with evolution, but that's consistent with the falsity of evolution.

Are fossil "hominids" ancestral to man, or just extinct apes?

It can be misleading to judge what animals are good at from their anatomy. For instance, goats are surprisingly good tree climbers. They climb fruit trees. On the face of it, goats are poorly designed to climb trees.

Likewise, snakes don't seem to be well designed to climb trees, yet they do so with ease. If we didn't know from experience that snakes were good tree-climbers, could we tell from fossilized snake skeletons? Same thing with goats.

**4.** It also depends on possible alternatives. Consider old-earth creationism. Suppose God phases in life on earth. Introduces different natural kinds at different stages of



natural history. If we view the fossil record with that reference frame, is it consistent with fiat creation?

Perhaps a Darwinian would object that that's ad hoc. But is it?

Suppose dinosaurs aren't compatible with modern mammals. They require a different climate. Moreover, the dominance of dinosaurs is antithetical to the dominance of mammals, or vice versa. If they can't coexist, then they can only exist in sequential epochs, allowing for some transitional overlap.

Young-earthers have their own explanation, based on the disruptive effects of a global flood.

If, moreover, incremental evolution just doesn't have the internal resources to account for the origin of life, or bridge over incompatible body plans, then that invites theistic alternatives.

## The principle of parsimony

Many scientists or philosophers of science operate with two criteria: methodological naturalism and the principle of parsimony. They have other criteria as well. Right now I just wish to concentrate on simplicity, especially in terms of how that relates to methodological naturalism.

Before proceeding, we need to say more about simplicity as a criterion in scientific theorizing.

The view that simplicity is a virtue in scientific theories and that, other things being equal, simpler theories should be preferred to more complex ones has been widely advocated in the history of science and philosophy, and it remains widely held by modern scientists and philosophers of science. It often goes by the name of "Ockham's Razor." The claim is that simplicity ought to be one of the key criteria for evaluating and choosing between rival theories, alongside criteria such as consistency with the data and coherence with accepted background theories. Simplicity, in this sense, is often understood ontologically, in terms of how simple a theory represents nature as being—for example, a theory might be said to be simpler than another if it posits the existence of fewer entities, causes, or processes in nature in order to account for the empirical data. However, simplicity can also be understood in terms of various features of how theories go about explaining nature—for example, a theory might be said to be simpler than another if it contains fewer adjustable parameters, if it invokes fewer extraneous assumptions, or if it provides a more unified explanation of the data. There are many ways in which

simplicity might be regarded as a desirable feature of scientific theories. Simpler theories are frequently said to be more “beautiful” or more “elegant” than their rivals; they might also be easier to understand and to work with. However, according to many scientists and philosophers, simplicity is not something that is merely to be hoped for in theories; nor is it something that we should only strive for after we have already selected a theory that we believe to be on the right track (for example, by trying to find a simpler formulation of an accepted theory). Rather, the claim is that simplicity should actually be one of the key criteria that we use to evaluate which of a set of rival theories is, in fact, the best theory, given the available evidence: other things being equal, the simplest theory consistent with the data is the best one. Many scientists and philosophers endorse a methodological principle known as “Ockham’s Razor”. This principle has been formulated in a variety of different ways. In the early 21st century, it is typically just equated with the general maxim that simpler theories are “better” than more complex ones, other things being equal. Historically, however, it has been more common to formulate Ockham’s Razor as a more specific type of simplicity principle, often referred to as “the principle of parsimony”...However, a standard of formulation of the principle of parsimony—one that seems to be reasonably close to the sort of principle that Ockham himself probably would have endorsed—is as the maxim “entities are not to be multiplied beyond necessity”. So stated, the principle is ontological, since it is concerned with parsimony with respect to the entities that theories posit the existence of in attempting to account for the empirical data. “Entity”, in this context, is typically understood broadly, referring not just to objects (for example, atoms and

particles), but also to other kinds of natural phenomena that a theory may include in its ontology, such as causes, processes, properties, and so forth. It is important to recognize that the principle, "entities are not to be multiplied beyond necessity" can be read in at least two different ways. One way of reading it is as what we can call an anti-superfluity principle (Barnes, 2000). This principle calls for the elimination of ontological posits from theories that are explanatorily redundant. Mill also pointed to a plausible justification for the anti-superfluity principle: explanatorily redundant posits—those that have no effect on the ability of the theory to explain the data—are also posits that do not obtain evidential support from the data. This is because it is plausible that theoretical entities are evidentially supported by empirical data only to the extent that they can help us to account for why the data take the form that they do. If a theoretical entity fails to contribute to this end, then the data fails to confirm the existence of this entity. If we have no other independent reason to postulate the existence of this entity, then we have no justification for including this entity in our theoretical ontology. When the principle of parsimony is read as an anti-superfluity principle, it seems relatively uncontroversial. However, it is important to recognize that the vast majority of instances where the principle of parsimony is applied (or has been seen as applying) in science cannot be given an interpretation merely in terms of the anti-superfluity principle. This is because the phrase "entities are not to be multiplied beyond necessity" is normally read as what we can call an anti-quantity principle: theories that posit fewer things are (other things being equal) to be preferred to theories that posit more things, whether or not the relevant posits play any genuine explanatory role in the theories

concerned (Barnes, 2000). This is a much stronger claim than the claim that we should razor off explanatorily redundant entities. The evidential justification for the anti-superfluity principle just described cannot be used to motivate the anti-quantity principle, since the reasoning behind this justification allows that we can posit as many things as we like, so long as all of the individual posits do some explanatory work within the theory. It merely tells us to get rid of theoretical ontology that, from the perspective of a given theory, is explanatorily redundant. It does not tell us that theories that posit fewer things when accounting for the data are better than theories that posit more things—that is, that sparser ontologies are better than richer ones. Another important point about the anti-superfluity principle is that it does not give us a reason to assert the non-existence of the superfluous posit. Absence of evidence, is not (by itself) evidence for absence. Consider the following list of commonly cited ways in which theories may be held to be simpler than others:

- Quantitative ontological parsimony (or economy): postulating a smaller number of independent entities, processes, causes, or events.
- Qualitative ontological parsimony (or economy): postulating a smaller number of independent kinds or classes of entities, processes, causes, or events.
- Common cause explanation : accounting for phenomena in terms of common rather than separate causal processes.
- Symmetry : postulating that equalities hold between interacting systems and that the laws describing

the phenomena look the same from different perspectives.

Uniformity

(or homogeneity): postulating a smaller number of changes in a given phenomenon and holding that the relations between phenomena are invariant.

Unification

: explaining a wider and more diverse range of phenomena that might otherwise be thought to require separate explanations in a single theory (theoretical reduction is generally held to be a species of unification).

Lower level processes

: when the kinds of processes that can be posited to explain a phenomena come in a hierarchy, positing processes that come lower rather than higher in this hierarchy.

Familiarity (or conservativeness)

: explaining new phenomena with minimal new theoretical machinery, reusing existing patterns of explanation.

Paucity of auxiliary assumptions

: invoking fewer extraneous assumptions about the world.

Paucity of adjustable parameters

: containing fewer independent parameters that the theory leaves to be determined by the data.

<http://www.iep.utm.edu/simplici/>

One caveat: I think it's arbitrary to define simplicity as favoring bottom-up processes over top-down processes. If anything, a top-down process would be more economical.

Suppose a cosmologist challenges a creationist to address evidence for the antiquity of the universe. Suppose a

Darwinian challenges a creationist to address fossil evidence for the evolutionary narrative. Suppose a creationist responds by invoking mature creation or omphalism? That clearly violates methodological naturalism.

Of course, since methodological naturalism is methodological rather than metaphysical, since it doesn't prejudge (much less prove) how nature actually operates, why should we care whether we violate methodological naturalism? Isn't science supposed to describe how nature actually works?

But for now I'd like to focus on another point. Although methodological naturalism conflicts with mature creation, it also conflicts with Occam's Razor. For mature creation satisfies several virtues of the simplicity criterion. It posits a single agent (God), a single process (divine fiat), a common casual explanation (fiat creation). It posits fewer causes, processes, and events. It posits fewer changes. It provides a unified explanation. It's consistent with the data. Divine agency is not explanatorily redundant. To the contrary, this furnishes an elegant, economical account with enormous explanatory power. Far more so than mainstream cosmology and paleontology.

So we have conflicting criteria. Which takes precedence: Occam's Razor or methodological naturalism?

Likewise, suppose a Darwinian challenges a creationist to account for the genetic and morphological similarities between certain organisms? Suppose he points to a continuum of intermediate forms? Suppose the creationist responds by invoking the principle of plenitude. God chose to make a world with maximal variety. That, in turn, entails continuity and gradation.

Now that clearly violates methodological naturalism. Yet appealing to a divine intention to make a world in which most-all compossible combinations are exemplified satisfies several virtues of the simplicity criterion. Far more so than the evolutionary alternative, with its wasteful, inefficient version of natural history.



## The principle of plenitude

It's common for unbelievers to attack Christian theism by pointing out design flaws in nature. What's ironic about this tactic is that while unbelievers pride themselves on their respect for science, their appeal to design flaws is so unscientific.

### 1. THE UNIT OF OPTIMALITY

What's the fundamental unit of optimality? Is the fundamental unit an individual organism?

Suppose we ask, which is better designed: the snow leopard or the African leopard?

The question is meaningless because you can't judge design efficiency in isolation to the specific environment in which the organism must operate. A snow leopard is better designed for a frigid, mountainous habitat whereas an African leopard is better designed for the tropics. So optimal design is correlative. The African leopard would be suboptimally designed for the natural habitat of the snow leopard.

### 2. THE BALANCE OF NATURE

Apropos (1), suppose we could optimize the design of prey such that prey uniformly evaded capture by predators. Would that be a better design?

The deleterious result would be twofold: (i) predators would become extinct due to starvation; (ii) prey species would

become extinct due to overpopulation, overgrazing, and subsequent starvation.

Conversely, suppose we could optimize the design of predators. Would that be a better design?

The deleterious result would be twofold: (i) prey species would become extinct due to overpredation; (ii) predators would become extinct due to exhaustion of the food supply.

To maintain the natural balance, prey must elude capture often enough to maintain a replacement rate while predators must capture prey often enough to maintain a replacement rate.

If you improve one without improving the other, you destroy both. So what constitutes optimal design in predator and prey species is correlative.

### 3. TRADEOFFS

Which is better designed: a lion, leopard, or cheetah?

A cheetah is built for speed. In one respect that confers a competitive survival advantage. It can take down prey that outrun slower predators.

But its superior speed comes at a cost. It has a weaker bite than leopards and lions. It lacks the razor-sharp retractable claws. Unlike a male lion, it can't break the neck of prey with one swipe of the paw.

What about a lion? That has advantages. Because they live in groups, a lioness or two can stay behind to baby-sit cubs while the rest of the pride is out hunting. It's easier to

corner prey when you hunt in a pack. And having more hunters raises the odds of a successful kill.

But there are corresponding disadvantages. More mouths to feed. So one must hunt more often. Also, bigger animals need to eat more, although they can also take down larger prey.

There's a pecking order in terms of who gets first dibs of the kill. The alpha males get the "lion's share."

If another lion dethrones the alpha male, it will kill the cubs. So one advantage offsets another advantage.

What about the leopard? It represents an engineering compromise or mean between the powerful lion and the fleet-footed cheetah. It enjoys the upsides and downsides of a solitary predator.

Is an anteater better designed than a leopard? In one respect, the specialized design of the anteater confers a competitive survival advantage. It can corner the market on a particular food source.

But the attendant downside is that it's totally dependent on that narrow food source. If, due to natural disaster, ants, termites, and grubs are in short supply, it will starve.

By contrast, the leopard, with its flexible design, is far more adaptable. It has many food sources. In one respect, that's a competitive survival advantage.

But by the same token it must compete with other predators (e.g. lions, cheetahs, hyenas, cape hunting dogs) for the same prey.

Man is a limiting case of engineering tradeoffs. On the one hand, man is one of the most naturally defenseless creatures on earth. But the compensation is his superior intelligence—aided by good eyesight and the opposable thumb.

#### **4. INTENTIONALITY**

Optimality is correlative with intentionality. To assess design, you have to know what the engineer intended to achieve. For instance, there are more accurate ways to tell time than a cuckoo clock. But that doesn't mean a cuckoo clock is poorly designed. It wasn't made to maximize accuracy.

On the face of it, the animal kingdom seems to be designed to exhibit the sheer diversity of possible strategies, solutions, combinations, and permutations.

The principle of plenitude trumps the law of parsimony.

#### **5. DYTELEOLOGY**

Since unbelievers reject natural teleology, they forfeit the right to say anything in nature is ill-designed. Something can only be poorly designed in case it was meant to perform a certain function. But if the watchmaker is blind, then the watch wasn't ever meant to tell time. That's adventitious. Whether it's fast or slow is not a design defect.

## Scripture and scientific realism

Over and above the argument from evil, I suppose the most popular and “respectable” objection to Christianity or Scripture is the scientific objection. This can target specific examples, like the creation account and the flood account, or it can be more general, like the filter of methodological naturalism.

The specific objection takes the position that Scripture doesn’t fit the facts. Biblical descriptions are contradicted by the scientific evidence. They don’t match up with the world of empirical observation.

Of course, Christians of various stripes (e.g. YEC, OEC, ID-theory, theistic evolution) present specific counterarguments. But let’s suppose, for the sake of argument, that all these Christian counterarguments misfire. Suppose we had no alternative explanation. Would that be a defeater for the inerrancy of Scripture?

Ironically, one basic problem with scientific objections to Scripture is internal to science itself. And that involves the role of the scientific observer. Here is how one philosopher describes the epistemic situation of the percipient:

“First of all, our sense organs by themselves reveal nothing. They work in conjunction with our brains, and it is our brains that convert the information they accumulate into our experience of colors, tastes, sounds, and so on. Without brains we would have no experience, no consciousness, at all. In the second place, our brains convert this information from the senses into the kind of experiences they do because

our brains are structured the way they are. If our brains were constructed differently, they would convert that information into different kinds of experiences...If our brains were built differently we might experience light waves of various frequencies differently than we do. We might experience a wider or narrower range of colors, or no colors at all. Instead of experiencing light waves as color we might experience them as various kinds of tingles, or heat, or in some way we can't even imagine (as people blind from birth can't imagine colors). In short, the world as it appears to us through the senses is not the world as it is in itself but rather a consequence of the world as it is in itself interacting with sense organs and brains like our own. In addition, our senses detect only some aspects of that world. Unlike electric fish, we don't sense objects entering electric fields. Unlike bees, we don't directly sense ultraviolet light. This means that a deep knowledge of the physical world requires getting beyond the way the world discloses itself to us in perceptual experience. The goal of physics is to describe the world that underlies perception and the world to which we have no perceptual access at all," M Philips, *The Undercover Philosopher* (Oneworld Publications, 2008), 18-19. "But even in this world our brain produces a world of experience that goes well beyond the information presented to the brain by the senses. The brain ceaselessly edits and elaborates on that information. What we see, for example, is always both more and less than what meets the eye. This is true not only when we hallucinate, but also in normal perception," *ibid.* 19. "For one thing, the brain is highly selective...The brain also makes corrections and fills in missing information. If it simply reproduced the information recorded on the retina, we would see the world upside down, and have

a big black hole in our visual field (the blind spot). The brain also sees to it that the color of objects we see remains relatively constant despite big changes in the color of the light in which we see them. A leaf looks green to us at midday, when the illumination is white sunlight, and also at sunset, when the illumination is mainly red (a phenomenon called 'color constancy'). The brain also fills in color at the periphery of our visual field...the fact that we see color at the periphery is the result of the brain filling in on the basis of the information it has," *ibid.* 20.

**1.** On the face of it, this generates a dilemma. For Philips' analysis of the percipient would seem to lead to very skeptical conclusions concerning the possibility of scientific knowledge. Something close to phenomenalism. All we know are appearances. The way things appear to us. We can never bridge the gap between appearance and reality.

But in that case, even if you had a mismatch between a scientific description and a Biblical description, the scientific evidence is only phenomenal evidence: evidence of how things appear to us. It doesn't put us in touch with the underlying facts.

As such, a description might be true to reality even though it doesn't correspond to what we perceive—or scientifically reconstruct.

Take a videogame. To play the game, you need a user interface, viz. a game controller or input device, like a keyboard or joystick, steering wheel, &c., along with an output device.

For instance, in a racing simulator you use a pedal, clutch, and steering wheel. This includes simulated effects like

sound reproduction and force feedback.

Of course, this isn't a real steering wheel, even if it looks like one. It's just a way of telling the computer what to do.

The empirical phenomena of an input or out device don't reveal anything about the electronic hardware generating the simulation.

By the same token, while there's a correlation between what you do and what happens, that doesn't give you a window into how it happens. You don't see the electronic hardware in action. You only see the simulated effects of the electronic hardware.

You can win the game without knowing how the gizmo works. You can manipulate the joystick and successfully navigate the virtual world without discovering the real machinery.

I'd add that this hiatus is exacerbated in case our brain is the byproduct of a mindless evolutionary process.

**2.** If anything, Philips understates the problem. Appealing to physics won't bridge the gap. Although physics may go beyond naked eye observation, it can never go behind sensory perception or the structure of the brain. A physicist is just as dependent on the converter-box of the brain as an ancient stargazer.

**3.** Of course, a Christian might take issue with Philips' physicalism. Since, however, physicalism is one of the usual operating assumptions in scientific objections to the Bible, then there's no reason, at this stage of the game, to challenge that piece of the package. For if physicalism undermines the possibility of scientific knowledge, then



that, in turn, undermines scientific objections to Scripture. So a Christian can grant that assumption for the sake of argument and then let the atheist suffocate on his stifling assumptions.

However, there is a potential, if partial, comeback to this sort of objection. As one philosopher puts it:

“This line of defense appears to crash, however, on the example of a cognitively disabling pill—call it DISABLEX. This is a pill that terminally disables one’s cognitive faculties, so that none is any longer reliable. How can you right now be sure that you have never taken any such pill? Appealing to the present deliverances of your faculties would seem vicious, since these are of course deliverances that would be made misleading by your having taken the pill,” E. Sosa, “Natural Theology and Natural Atheology,” D. Baker, ed. *Alvin Plantinga* (Cambridge 2007), 104.

“Does DISABLEX pose a problem for us? Well, consider right now the possibility that we did once take such a pill. How do we properly get to assume that we did not? How so, if not just by relying on our faculties in the sort of default way in which we normally do? But by so relying, we manifest our commitment to the claim that our faculties are indeed reliable, our commitment to this shown at least in our intellectual practice,” *ibid.* 104.

“For the claim that you have taken the pill is a self-defeating claim. Both believing that you have taken the pill and even suspending judgment on that question is epistemically self-defeating. The contrary claim, that you have taken no such pill, follows logically from what is epistemically obligatory and self-sustaining, namely, the commitment to the reliability of your faculties.

Therefore, it is hard to see how you could possibly go wrong epistemically not only in affirming the reliability of your faculties but also in affirming anything you can see to follow logically from that, including the consequence that you have never taken any such pill," *ibid.* 104-05.

"And the same goes for Plantinga's evolutionary argument. Again, believing that our faculties are unreliable is self-defeating, as is even suspending judgment on that question. On the question whether your faculties are reliable, you have no rational choice but to assent, therefore, and so you would be within your rights to draw the further conclusion that if your origins are evolutionary, then such origins cannot make your faculties unreliable," *ibid.* 105.

However, there are several basic problems with Sosa's comeback:

**1.** It equivocates over the concept of "reliability." The fact that we may rely on something doesn't render that reliable. A man with brain cancer must still rely on his unreliable brain (unless he has friends who compensate for his mental impairment). A drunk driver must still rely on his inebriated brain.

But this doesn't change the fact that his perception of reality is seriously distorted. Sure, it may be self-defeating for the affected party to claim that he is mentally impaired. If he's mentally impaired, then he may be in no position to bear witness to his own state of mind. But, of course, this creates no presumption that the affected party is not severely impaired.

**2.** *Apropos* (1), the fact that a Darwinian must rely on his brain doesn't presume that his brain is reliable. It only

means that this is all he has to work with. Philips analysis is simply a description of how the brain appears to the brain. We have to use our brain to examine our brain, and compare our brain with the brains of other animals. We're doing the best we can with what we've got.

But this doesn't presume the reliability of the underlying process. It may be an accurate description of an unreliable process. The end-result looking in the mirror. A man who's high on acid can accurately describe his hallucination. His impressions of reality may be misimpressions, but he can provide a trustworthy description of an untrustworthy perception.

**3.** Furthermore, even if the testimonial claim is self-defeating, we need to ask what makes it self-defeating. It may not be the testimonial claim in itself. Rather, it may be the logical implication or probable consequence of an incoherent scientific position. In that case, the inconsistency hardly shows you have no rational choice but to affirm the very position which generates that tension.

The question at issue is not the reliability of our faculties, per se, but the reliability of our faculties given certain theoretical preconditions. If an atheist or Darwinian posits certain initial conditions which undermine rationality, then that doesn't undermine rationality, per se. Rather, it undermines the postulate.

**3.** Moreover, this is a best-case scenario. And that's the conundrum. Even if you assume the brain is sufficiently reliable to describe itself, the result of that description yields a skeptical conclusion.

And if that's the conclusion we derive from the assumption that our brain is reliable, then the alternative assumption

would yield an even more skeptical conclusion. You end up with radical skepticism however you slice it. Different degrees of radical skepticism.

**4.** There is another equivocation as well. The brain could be quite reliable, but also be quite selective. That is to say, it could be quite reliable in doing just what it's supposed to do, but its range is very restricted.

For example, a human eye has poor nocturnal vision. This doesn't mean the human eye is generally or intrinsically untrustworthy. It doesn't mean the human eye is defective.

It merely means the human eye is not designed or adapted to function as well at night—compared a feline eye. That's not a design flaw. Within its intended parameters, it may be quite efficient. It accurately samples what it was made or meant to sample.

Of course, if you think the brain (or its sensory extensions) is the byproduct of an undirected process, then all bets are off. In that case, there's nothing the brain is supposed to do.

**5.** From a Christian standpoint, the way out of the fly-bottle is the presupposition of God's creative and providential control. Even if our mind, brain, and senses are highly selective, and even if they fall short of letting us know what the sensible world is like without our sensory filtering device, they are reliable within their intended parameters. The sample is representative.

## Perception & transcendental theism

Thomas Nagel is a leading secular philosopher. He even admits to having a strong emotional aversion to God's existence. He doesn't want God to exist.

However, unlike many atheists, Nagel is a fairly independent thinker who frankly admits the inadequacies of the standard secular paradigm. For instance:

For the most creatures, however, objectivity extends no farther than this. Their lives are lived in the world of appearances, and the idea of a more objective reality has no meaning.

But once we come to recognize the distinction between appearance and reality and the existence of objective factual or practical truth that goes beyond what perception, appetite and emotion tell us, the ability of creatures like us to arrive at such truth, or even to think about it, requires explanation.

The problem has two aspects. The first concerns the likelihood that the process of natural selection should have generated creatures with the capacity to discover by reason the truth about a reality that extends vastly beyond initial appearances—as we take ourselves to have done and to continue to do collectively in science...The second problem is the difficulty of understanding naturalistically the faculty of reason that is the essence of these activities.

But whenever we take such a reasonable detached attitude toward our innate dispositions, we are

implicitly engaged in a form of thought to which we do not at the same time take that detached attitude. When we rely on systems of measurement to correct perception, or probability calculations to correct intuitive expectations, or moral or prudential reasoning to correct instinctive impulses, we take ourselves to be responding to systematic reasons which in themselves justify our conclusions, and which do not get their authority from their biological organisms. They could not be backed up in that way.

In the perceptual case I can recognize that I might be mistaken, but on reflection, even if I think of myself as the product of Darwinian natural selection, I am nevertheless justified in believing the evidence of my senses for the most part, because this is consistent with the hypothesis that an accurate representation of the world around me results from senses shaped by evolution to serve that function. That is not a refutation of radical skepticism, since evolutionary theory, like all of science, depends on the evidence of the senses.

This is the second problem: What is the faculty that enables us to escape from the world of appearance presented by our prereflective innate dispositions, into the world of objective reality? And what, besides consciousness, do we have to add to the biological story to make sense of such a faculty?

Perception connects us with the truth only indirectly. When I see a tree, I see it because it is there, but not just because it is there. Perception is not a form of insight: I do not grasp the presence of the tree immediately, even though it may seem so prior to reflection. Rather I am aware of it because the tree causes a mental effect in me in virtue of the character

of my visual system, which we may suppose has been shaped by natural selection to react in this way to light reflected from physical objects. Having such a system together with other perceptual and motivational dispositions enables me to survive in the world. So it is only in a complicated and indirect sense that when I see a tree, I see it because it is there

*Mind and Cosmos* (Oxford 2012), 73-74,79-80, 82.

**i)** Nagel is rehearsing an ancient philosophical conundrum: the hiatus between appearance and reality. And even though he's aware of the difficulty, he understates the difficulty. Having said "I am nevertheless justified in believing the evidence of my senses for the most part, because this is consistent with the hypothesis that an accurate representation of the world around me results from senses shaped by evolution to serve that function," he admits that this "is not a refutation of radical skepticism, since evolutionary theory, like all of science, depends on the evidence of the senses." So his appeal is circular.

**ii)** In addition, when he appeals to "senses shaped by evolution to serve that function," that is contrary to naturalistic evolution. He's offering a teleological description, but if naturalistic evolution is true, then evolution didn't shape our senses to serve *any* function.

Quine has made similar observations. For instance:

It would address the question of how we, physical denizens of the physical world, can have projected our scientific theory of that whole world from our meager contacts with it; from the mere impacts of rays and

particles on our surfaces and a few odds and ends such as the strain of walking uphill. *From Stimulus to Science* (Harvard 1999), *ibid.* 16.

There is a puzzle here. Global stimuli are private: each is a temporally ordered set of some one individual's receptors. Their perceptual similarity, in part innate and in part modeled by experience, is private as well. Whence then this coordination of behavior across the tribe? *ibid.* 20.

The sensory atomist was motivated, I say, by his appreciation that any information about the world is channeled to us through the sensory surfaces of our bodies; but this motivation remained obscure to him. It was obscured by his concern to justify our knowledge of the external world. The justification would be vitiated by circularity if sensory surfaces and external impacts on nerve endings had to be appealed to at the outset of the justification. *Confessions of a Confirmed Extensionist and Other Essays* (Harvard 2008), 328.

There is much clarity to be gained by dropping the project of justifying our knowledge of the external world but continuing to investigate the relation of that knowledge to its sensory evidence. Obscurity about the nature of the given, or epistemic priority, is then dissipated by talking frankly of the triggering of nerve endings. We then find ourselves engaged in an internal question within the framework of natural science. There are these impacts of molecules and light rays upon our sensory receptors, and there is all this output on our part of scientific discourse about sticks, stones, planets, numbers, molecules, light rays, and, indeed, sensory receptors; and then we pose the problem of



linking that input causally and logically to that output, *ibid.* 328.

Much as I admire [David] Lewis's reduction, however, it is not for me. My own line is a yet more sweeping structuralism, applying to concrete and abstract objects indiscriminately. I base it, paradoxically as this may seem, on a naturalistic approach to epistemology. Natural science tells us that our ongoing cognitive access to the world around us is limited to meager channels. There is the triggering of our sensory receptors by the impact of molecules and light rays. Also there is the difference in muscular effort sensed in walking up or down hill. What more? Even the notion of a cat, let alone a class or number, is a human artifact, rooted in innate predisposition and cultural tradition. The very notion of an object at all, concrete or abstract, is a human contribution, a feature of our inherited apparatus for organizing the amorphous welter of neural input, *ibid.* 402-03.

The conclusion is that there can be no evidence for one ontology as over against another, so long anyway as we can express a one-to-one correlation between them. Save the structure and you save all. Certainly we are dependent on a familiar ontology of middle-sized bodies for the inception of reification, on the part both of the individual and of the race; but once we have an ontology, we can change it with impunity, *ibid.*, 405.

This global ontological structuralism may seem abruptly at odds with realism, let alone naturalism. It would seem even to undermine the ground on which I rested it: my talk of impacts of light rays and molecules on nerve endings. Are these rays, molecules,

and nerve endings themselves not disqualified now as mere figments of an empty structure? *ibid.* 405.

Naturalism itself is what saves the situation. Naturalism looks only to natural science, however, fallible, for an account of what there is and what what there is does. Science ventures its tentative answers in man-made concepts, perforce, couched in man-made language, but we can ask no better. The very notion of object, or of one and many, is indeed as parochially human as the parts of speech; to ask what reality is really like, however, apart from human categories, is self-stultifying. It is like asking how long the Nile really is, apart from parochial matters of miles or meters. Positivists were right in branding such metaphysics as meaningless, *ibid.* 405.

So far as evidence goes, then, our ontology is neutral. Nor let us imagine beyond it some inaccessible reality. The very terms 'thing' and 'exist' and 'real,' after all, make no sense apart from human conceptualization. Asking after the thing in itself apart from human conceptualization, is like asking how long the Nile really is, apart from our parochial miles or kilometers. *ibid.*, 416.

So it seems best for present purposes to construe the subject's stimulus on a given occasion simply as his global neural intake on that occasion. But I shall refer to it only as neural intake, not stimulus, for other notions of stimulus are wanted in other studies, particularly where different subjects are to get the same stimulus. Neural intake is private, for subjects do not share receptors, *ibid.* 463-64.

But in contrast to the privacy of neural intakes, and the privacy of their perceptual similarity, observation sentences and their semantics are a public matter, since the child has to learn these from her elders. Her learning then depends indeed both on the public currency of the observation sentences and on a preestablished harmony of people's private scales of perceptual similarity, *ibid.* 464.

These reflections on ontology are a salutary reminder that the ultimate data of science are limited to our neural intake, and that the very notion of object, concrete or abstract, is of our own making, along with the rest of natural science and mathematics, *ibid.* 471.

**i)** That's the dilemma. How does the mind escape the world of appearances to come into contact with objective reality? How does appearance map onto reality?

**ii)** Science tries to present an objective, third-person description of the world. But science must rely on the subjective, first-person viewpoint of the human observer. How can science bootstrap an objective understanding from the "meager input" of our sensory receptors? How can science reliably extrapolate from "impacts of light rays and molecules on our sensory surfaces or nerve endings" to a global depiction of the outside world? Indeed, even talk of nerve endings and sensory receptors depends on the realm of appearance. On how our body appears to us. For instance, we have to use our eyes to see our eyes. If we see our eyes through our eyes, what are we really looking at? So the appeal is circular.

At this level we can't directly appeal to other observers to corroborate our own perceptions, for they are in the same

boat—and, in any case, our knowledge of other observers is filtered through our own perceptions.

**iii)** Here is where transcendental theism can break into the circle. Let's begin by defining a transcendental argument:

As standardly conceived, transcendental arguments are taken to be distinctive in involving a certain sort of claim, namely that X is a necessary condition for the possibility of Y—where then, given that Y is the case, it logically follows that X must be the case too.

<http://plato.stanford.edu/entries/transcendental-arguments/>

**iv)** So, for instance, if God designed our sensory perceptual system, and if that's preadapted to our physical environment, which God also designed, then our senses are generally reliable to perform what they were designed to do.

**v)** That, itself, is a fairly modest claim. It doesn't tell you in advance what they were designed to do. It doesn't specify the scope of their reliability. In principle, this is consistent with anything from direct realism through indirect realism and phenomenalism to idealism.

**vi)** It does, however, *ground* the reliability of sensory perception in a way that atheism cannot. The senses are trustworthy when we use them to do whatever they were designed to do.

**vii)** That's an argument from creation and providence. But there's also an argument from revelation. If the Bible is divine revelation, then there's a sense in which the Bible

gives us a second pair of eyes. A God's-eye view of the world. God's knowledge of the world doesn't arise from the world of the senses.

We can't get outside ourselves. We can't access the world behind the senses. But God's viewpoint is truly external.

**viii)** Of course, God speaks to us in sensory language. Revealed truths assume an analogy between appearance and reality. They overlap at the relevant point of comparison. Even if our mental representation of the world were a metaphor, metaphors convey knowledge.

Indeed, God created that analogical correspondence. That's why he can use this medium to reveal truths about the physical world, truths about history, truths about the past and the future.

**ix)** Now this kind of argument admittedly has a limitation. Transcendental arguments must begin from some starting-point or another. If an atheist rejects the starting-point, then the argument will be ineffective. If we grant Y, and X is a necessary condition of Y, then that commits us to X—but what if we don't grant the premise?

**x)** So this has the limitations of any conditional or hypothetical argument. But that doesn't make it a flawed argument. Persuasion is not the only aim of argumentation. We may use an argument to expose the cost of atheism. What price is the atheist prepared to pay to maintain his atheism? Will he commit intellectual suicide?

We're pushing the atheist. Pushing him to the ledge. We can't stop him from jumping, but that will betray the defiant irrationality of the atheist. In order to deny God, he must deny himself. The price of hating God is self-hatred.

**xi)** This also has implications for the relationship between philosophy and theology, general and special revelation. On one model, special revelation is subordinate to general revelation. You must begin with general revelation. And that, in turn, will adjudicate special revelatory claimants.

But on the model I'm proposing, we need special revelation to ratify our knowledge of the external world. Appeal to general revelation assumes the reliability of sensory perception (as well as reason and memory). But unless God vouches for sense knowledge, unless we have that external check on our private perceptions, there's no overriding reason to trust our senses.

So the relationship between general and special revelation is dialectical. Mutually validating. Without general revelation, special revelation is blind; without special revelation, general revelation is lost.

Consider psychotics. They may have acute hearing and 20/20 vision. But it makes no difference, for they are trapped in the prison of the mind.

To be lost inside your own mind is far more terrifying than if you lose your way in the woods. In a godless world, that's our fate.

## What do we see when we see?

I'm going to reproduce some recent correspondence of mine. My words in red, his words in blue.

I see that this guy is saying the same thing that I've been saying for years. This is the paradox of scientific realism. Seems to me that a scientific theory of sensory perception immediately leads to indirect realism. But in that event, the apparently objective, 3rd-person description of the sensory processing system is a disguised subjective, 1st-person description of how the world merely appears to the percipient.

It seems to me that only divine revelation can broker this issue.

Mind you, I don't agree with the other stuff he says (which I don't quote). I don't agree with his alternative. But that's because, absent divine revelation, we are truly in the dark.

*Because the word "consciousness" can be used in so many different ways, confusion often arises around statements about its nature. The way I use the word is not in reference to a particular state of consciousness, or particular way of thinking, but to the faculty of consciousness itself-the capacity for inner experience, whatever the nature or degree of the experience.*

*A useful analogy is the image from a video projector. The projector shines light onto a screen, modifying the light so as to produce any one of an infinity of images. These images are like the perceptions, sensations, dreams, memories, thoughts, and feelings that we experience-what I call the "contents of consciousness." The light itself, without which no images would be possible, corresponds to the faculty of consciousness.*

*We know all the images on the screen are composed of this light, but we are not usually aware of the light itself; our attention is caught up in the images that appear and the stories they tell. In much the same way, we know we are conscious, but we are usually aware only of the many different experiences, thoughts, and feelings that appear in the mind. We are seldom aware of consciousness itself. Yet without this faculty there would be no experience of any kind.*

*The faculty of consciousness is one thing we all share, but what goes on in our consciousness, the content of our consciousness, varies widely. This is our personal reality, the reality we each know and experience. Most of the time, however, we forget that this is just our personal reality and*



*think we are experiencing physical reality directly. We see the ground beneath our feet; we can pick up a rock, and throw it through the air; we feel the heat from a fire, and smell its burning wood. It feels as if we are in direct contact with the world "out there." But this is not so. The colors, textures, smells, and sounds we experience are not really "out there"; they are all images of reality constructed in the mind.*

*It was this aspect of perception that most caught my attention during my studies of experimental psychology (and amplified by my readings of the philosophy of Immanuel Kant). At that time, scientists were beginning to discover the ways in which the brain pieces together its perception of the world, and I was fascinated by the implications of these discoveries for the way we construct our picture of reality. It was clear that what we perceive and what is actually out there are two different things.*

*This, I know, runs counter to common sense. Right now you are aware of the pages in front of you, various objects around you, sensations in your own body, and sounds in the air. Even though you may understand that all of this is just your reconstruction of reality, it still seems as if you are having a direct perception of the physical world. And I am not suggesting you should try to see it otherwise. What is important for now is the understanding that all our experience is an image of reality constructed in the mind.*

[http://twm.co.nz/prussell\\_bio.html](http://twm.co.nz/prussell_bio.html)

*The key to this new model of reality is an understanding of how we perceive reality. Advances in physics, psychology, and philosophy have shown that reality is not what it seems. Take vision, for example. When I look at a tree, light reflected from its leaves is focused onto cells in the retina of my eye, where it triggers a cascading chemical reaction releasing a flow of electrons. Neurons connected to the cells convey these electrical impulses to the brain's visual cortex, where the raw data is processed and integrated. Then—in ways that are still a complete mystery—an image of the tree appears in my consciousness. It may seem that I am directly perceiving the tree in the physical world, but what I am actually experiencing is an image generated in my mind.*

*The same is true of every other experience. All that I see, hear, taste, touch, smell and feel has been created from the data received by my sensory organs. All I ever know of the world around are the mental images constructed from that data. However real and external they may seem, they are all phenomena within my mind.*

*This simple fact is very hard to grasp; it goes against all our experience. If there is anything about which we feel sure, it is that the world we experience is real. We can see, touch and hear it. We can lift heavy and solid objects; hurt ourselves, if we're not careful, against their unyielding immobility. It seems undeniable that out there, around us, independent and apart from us, stands a physical world, utterly real, solid and tangible.*

*But the world of our experience is no more "out there" than are our dreams. When we dream we create a reality in which events happen around us, and in which we perceive other people as individuals separate from us. In the dream it all seems very real. But when we awaken we realize that everything in the dream was actually a creation of our own mind.*

*The same process of reality generation occurs in waking consciousness. The difference is that now the reality that is created is based on sensory data and bears a closer relationship to what is taking place in the real world. Nevertheless, however real it may seem, it is not actually "the real world". It is still an image of that world created in the mind.*

*It is important to distinguish between two ways in which we use the word "reality". There is the reality we experience, our image of reality; and there is the underlying reality that has given rise to this experience. The underlying reality is the same for all observers. It is an absolute reality. The reality I experience, the reality generated in my mind, is a relative reality. It is relative to my point of view, my past experience, my human senses and my human brain.*

*The fact that we create our image of reality does not mean, as some people misconstrue, that we are creating the underlying reality. Whatever that reality is, it exists apart from our perception of it. When I see a tree there is something that has given rise to my perception. But I can never directly perceive this something. All I can ever know of it is the image appearing in my mind.*

*When, two centuries ago, Bishop Berkeley proposed that we know only what we perceive, his contemporaries debated whether or not a tree falling in a forest made a sound if no one was there to hear it. From what we now know of the psychophysiology of perception, we can say the answer is "No". Sound is not a quality of the underlying reality. There may be movements in the air, but the interpretation of those movements as sound is something that happens in the mind—whether it be the mind of a human being, a dog or a woodpecker.*

*Similarly with light. Whatever the tree is in physical reality, it is not green. Light of various frequencies is reflected from the tree to the retina of the eye, where cells respond to the amount of light in three frequency ranges (the three primary colors). But all that is passed back to the brain are electro-chemical impulses; there is no color here. The green I see is a quality created in consciousness. It exists only in the mind.*

*The same is true of our perception of distance. The pattern of light that falls on the retina creates a two-dimensional image of the world. The brain estimates distance by detecting slight differences between data from the left and right eyes, the focus of the eyes, relative movement, and past experience as to the likely size of a tree. From this data it calculates that the tree is fifty feet away. A three-dimensional image of the world is then created with the tree placed "out there" in that world, fifty feet away. Yet, however real it may seem, the quality of space and distance that we experience is created in the mind.*

<http://twm.co.nz/prussell.htm#Perception>

Divine revelation seems to be, in general, known by us through the senses. But then we don't have the sort of objective access to it that you think we lack in the case of the external world. How does divine revelation solve the problem of the external world's darkness (epistemically speaking) to us?

You need to distinguish between divine revelation coming to us through a sensory medium, and what revelation tells us about the sensible world, including the medium of transmission.

It's like the difference between a radio wave as a carrier wave for a radio broadcast, and the content of the message.

Yes, but I'm having a hard time understanding what the distinction is supposed to help: if we are in the dark about the world because of the way our senses tell us about it, if we lack any objective reason to

believe that the world is the way it appears to us through our senses, then this would count in any cases of ostensible divine revelation to be known by way of the senses as well.

To use the radio analogy, if I have a bad receiver or a receiver such that there's no problem in principle with the suggestion that it might greatly distort messages received from various transmitters, then I can't seem to use messages received by way of the receiver in support of its reliability; to take evidence from the receiver as evidence of its reliability is to presuppose its reliability already, after all.

If the receiver is bad, you get gibberish. The information you get isn't wrong—rather, it's unintelligible.

If, by contrast, what you hear is understandable, then you know that the message wasn't fundamentally corrupted or garbled in transmission.

Try a different comparison:

If I look at a garden through tinted glass, I won't know what color the flowers really are.

If, however, I read a poem with tinted glasses, the fact that my medium filters the input doesn't change the fact that I can know what the poem means. For the meaning is, abstract propositional—even if the medium by which I become acquainted with the meaning is concrete and filtered.

Or, to take a different example, what's the difference beyond white noise and a message in Morse code?

Both employ sensory media. But one has a meaningful, intelligible pattern whereas the other is random.

That may have been a bad analogy. Radios don't quite have the capability that sense organs coupled with human brains do.

This is what I am saying. If we are in the dark about what the world is like given only our senses, then we are equally in the dark about ostensible cases of divine revelation in the world and what they are like. The problem is that an epistemic "gap" between our senses perceptions and the actual way the world is would apply equally when the object of our sense perceptions are revelations from God (e.g., the bible).

Perhaps I am just unclear on what you mean when you say that "divine revelation can broker the issue". You should agree, I think, that if my senses, just taken by themselves, are inadequate at telling me what my computer or my favorite Starbucks location is really like, then they are equally inadequate at telling me what the Bible I hold in my hand is really like. But then what do you mean when you say that divine revelation can broker the issue?

No, it's not equivalent. There's a difference between raw sensory input (like shapes and colors) and structured information.



Okay, I think I am understanding better now, though I don't know how this helps. I only know of a piece of paper as having information on it through my senses; if my senses are unreliable in their suggestion to me that the paper is solid, colored, etc., why are they any more reliable in portraying the paper as containing information on it? or in portraying the information correctly?

First of all, I never said the senses are unreliable. The question is what they are designed to achieve. They could reliably aid us in navigating our physical environment even if they didn't tell us what things are really like apart from our perception. All that requires is a correlation, like a code.

Propositional information processing is self-correcting inasmuch as a statement on a page wouldn't make any sense unless it was transmitted with a fairly high degree of fidelity to the original.

That's not the case with mere sensation. To take a personal anecdote, when I was 35 I went to see a

neuro-ophthalmologist . He wasn't your average eye doctor.

In the course of my examination he asked me, in passing, if I was color blind. I said that, to my knowledge, I was not.

He then had me look at something which revealed the fact that I'm partially color blind. I think in the blue-green spectrum or something like that.

Before then I never knew that I was partially color blind. I always took for granted that I was seeing the same spectrum as everyone with normal vision. I had no standard of comparison. No point of contrast. I'd lived and functioned for 35 years without being aware of that visual impairment.

However, linguistic propositions are different. Either they make sense or they don't. You can't have a severely corrupted content stream and still have something intelligible at the end of the transmission.

Of course, it's possible to have some errors in transmission, and we can generally correct that because, once again, we're dealing ideas, concepts—and not just sensory impressions that stand for nothing.

Where linguistic propositions are concerned, the check lies in the significance of the statement. Not just squiggles of ink, but squiggles of ink which must have a highly specified pattern to communicate meaning.

## The limits of science

**i)** I think scientific realism is paradoxical. Here's one reason. Scientific realism aims at providing an objective, third-person description of the world. Not only is that the aim, but that's a presupposition.

However, science ultimately depends on observation. On the human observer. So underlying the third-person perspective is a first-person perspective. And it's hard to see how science can bootstrap a third-person perspective from a first-person perspective.

**ii)** But the paradox runs even deeper. According to a scientific analysis of sensory perception, we don't perceive the world directly. Rather, our perception of the world is mediated by various intervening processes. Physical objects generate sound waves, light waves, &c. That's a form of coded energy or coded information. When that reaches our eyes, ears, and other sensory relays, that's translated into different coded energy. Say, from electromagnetic signals to electrochemical signals.

The upshot is that my internal representation of the external world is coded information. I have a mental image of a tree. But if the scientific analysis of sensory perception is correct, then my mental representation isn't a miniature image of the tree, but a coded analogue.

Yet if that's the case, then there's no reason to assume the mental representation resembles the external object, any more than musical notation resembles sound.

We tend to think of the eyes as cameras which take photographs of the outside world. The difference between the tree “out there” and my mental image is basically a difference in scale and dimensionality (i.e. a 2D image of a 3D object).

But it’s hard to see (pardon the pun) how a process of coding energy is likely to yield a readout that resembles the distal stimulus.

**iii)** And that’s not the end of the paradox. For we’re having to use sensory perception to analyze sensory perception. A circular procedure. So we can’t get behind the process to study the process apart from the process, for we are part of the very process we study! The percipient perceiving himself.

In a scientific analysis of sensory perception, we’re tacitly assuming a viewpoint independent of the observer. A viewpoint over and above the process. We imagine the tree “out there.” We imagine the tree generating light waves. We track the light waves as they impinge on the retina. We continue to trace the process from the outside into the brain.

But that’s an illusion. For the scientific analysis is ultimately on the receiving end of the process. Hence, we’re never in a position to retrace the process.

But in that event, the deceptively objective scientific description is even further removed from reality than appears to be the case.

So the conclusion circles back and falsifies the premise. That leaves us totally in the dark.

**iv)** And it's truly insoluble given naturalism. Contrast that to Christian theism. If God made us, if God made the world, then I can understand how God could coordinate what the tree is really like, outside the observer, with the observer's mental picture of the tree. God could design a process in which the output resembles the input.

But how would an unguided evolutionary process be able to compare what the tree is really like with our mental representation of the tree? There's no overarching intelligence to compare the two in advance and create a chain-of-custody in which appearance and reality eventually match up.

**v)** Unbelievers argue for methodological naturalism on the grounds that leaving divine intervention out of the picture contributed to the tremendous progress and success of modern science and technology. Science continues to explain things that ignorant, superstitious folk used to explain by recourse to gods and demons.

From a historical standpoint, there may be a grain of truth to that portrayal, but I think it's largely true of pagan polytheism. In polytheism, there is no unifying principle, no centralized command-and-control. Rather, you have a turf war between competing gods, who vary in their knowledge and power. Indeed, the gods themselves are the product of a cosmic process.

But in OT monotheism, there's a single sovereign Creator God behind everything that happens. So everything is coordinated. God creates an order of second causes.

vi) Scientific realism also assumes or stipulates the uniformity of nature. And there's a measure of truth to that. That's somewhat analogous to divine providence. But

according to providence, natural events are guided by a higher intelligence, unlike the uniformity of nature—which is driven by mindless forces.

vii) In addition, from a Christian standpoint, historical causation includes factors like answered prayer and coincidence miracles.

These involve divine “intervention.” This type of “intervention” doesn’t necessarily “interrupt” the “natural” course of events. Not like jumping into the middle of things to change course. Rather, it’s more like a stacked deck where the cards were shuffled ahead of time to yield a specific, predetermined sequence of events. Viewed from the outside, it all looks perfectly “natural.” But there’s a higher intelligence directing the process behind-the-scenes to yield a particular conjunction of seemingly fortuitous events.

This is generally imperceptible, because the significance of the outcome is only meaningful to a particular individual in need. He recognizes how this outwardly ordinary event is extraordinarily opportune for him.

There’s no telling how often answered prayer or coincidence miracles are a driving force in history, for you have to be an insider to appreciate the answer or the “coincidence.” But these are “causes” no less than “natural” causes.

## A blind and deaf camcorder engineer

**1.** I'm going to revisit a pet issue of mine. I'm a realist about the external world. There's an extramental world, independent of observers. So I'm not a metaphysical idealist.

But in two respects I'm an antirealist. The uniformity of nature is an axiom of scientific realism. The physical world operates according to a continuous chain of physical cause and effect. It's like a machine.

And I agree that the closed system view of nature is the default setting. But it has a manual override. There are personal agents with powers of mental causation who can manipulate nature to produce outcomes that bypass natural processes. Take miraculous healing. That's discontinuous with antecedent conditions. It circumvents the chain of causes. It interjects a new cause, a new starting-point, that's not traceable to the causes leading up to that outcome.

So that places limits on our ability to extrapolate from the present to the past or future. All things being equal, uniformity is the norm, but all things considered, we must always be open to the possibility of events that circumvent the default mode.

**2.** The other is the issue of sensory perception. We don't perceive the physical world as is. Rather, that's mediated through the sensory processing system.

It's like we have a camcorder in our minds/heads that records sights and sounds. What we see or hear is a mental



copy of the external stimulus.

Recording is a representational process, where the copy is supposed to resemble the original. Now imagine a blind and deaf camcorder engineer. Because he can't see and hear, he can't compare the copy with the original. So he can't tell if they matchup.

Consider naturalistic evolution producing a biological camcorder through dumb luck. And this would have to develop independently on countless occasions. The process can't compare the copy to the original to distinguish a match from a mismatch. It requires an outside observer to make that comparison. An observer who's not part of the circle.

However, even if the designer can see and hear, there's another complication, because there are different ways to sample the same physical object. Two observers may see the same object: one has color-vision while the other is color-blind. They see the same thing but they don't perceive the same thing. Likewise, one observer may have the acuity to detect a camouflaged animal that's invisible to another observer.

Some animals have different senses, like infrared perception, polarized light, scent trails, echolocation, and electromagnetic signals. So their inner camera takes different kinds of pictures.

Science fiction posits superheroes with X-ray vision. Sensory relays can sample the same object at different scales of magnitude. It can peel back the layers to see the inside as well as the outside. So there's no one true viewpoint.

Or take a music score. That's encoded music. An abstract record to reconstruct a musical performance. The score doesn't sound like anything. It's just a set of symbolic markings.

Then there's the ineluctable circularity in the fact that we must use our senses to analyze our senses. We can never get behind our senses. My own description of the process is deceptively objective in that regard.

Ultimately we're dependent on God to design a sensory perceptual system where the mental representation is an approximately accurate and adequate sample of the external stimulus.

Only God can break into the circle to provide an external check. It's like communication. If what you hear on the receiving end is gibberish, then the signal was garbled in transmission. But if an intelligible message comes through, that means there's a match between the input and the readout.

So we depend on God to design a system in which the copy is an approximately accurate and adequate sample of the original. Even then, appearances may be several steps removed from reality. Mountains seem smaller and closer at a distance. So the mind must interpret what it perceives to make necessary corrections or adjustments.

Science can never falsify revelation because science requires revelation to provide the intersubjectival benchmark. Only the Creator can stand back of the process to make perception correspond to reality.

# Adam

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## Recurring mistakes in debating the historical Adam

I'm going to comment on a recent post by Peter Enns:

<http://www.patheos.com/blogs/peterenns/2015/05/11-recurring-mistakes-in-the-debate-over-the-historical-adam/>

**1. It's all about the authority of the Bible.** I can understand why this claim might have rhetorical effect, but this issue is not about biblical authority. It's about how the Bible is to be interpreted. It's about hermeneutics.

It's always about hermeneutics.

I know that in some circles "hermeneutics" is code for "let's find a way to get out of the plain meaning of the text." But even a so-called "plain" or "literal" reading of the Bible is a hermeneutic—an approach to interpretation.

Literalism is a hermeneutical decision (even if implicit) as much as any other approach, and so needs to be defended as much as any other. Literalism is not the default godly way to read the Bible that preserves biblical authority. It is not the "normal" way of reading the Bible that gets a free pass while all others must face the bar of judgment.

So, when someone says, "I don't read Genesis 1-3 as historical events, and here are the reasons why," that person is not "denying biblical authority." That person may be wrong, but that would have to be judged on some basis other than the ultimate conversation-stopper, "You're denying biblical authority."

The Bible is not just "there." It has to be interpreted. The issue is which interpretations are more defensible

than others. Hence, appealing to biblical authority does not tell us how to interpret the Bible. That requires a lot more work. It always has.

"Biblical authority" is a predisposition to the text. It is not a hermeneutic.

**i)** That's a half-truth. To begin with, there's a common calculated ploy on the part of "progressive Christians" to recast the issue of Biblical authority in terms of hermeneutics. The ruse is typically used by theological revolutionaries whose agenda is to secularize Christianity and redefine the church from within. They don't begin by openly attacking the authority of Scripture. That would be too provocative. That would trigger instant opposition.

Instead, they resort to a softening up exercise. They insist that this is not about the inspiration of Scripture, but the interpretation of Scripture. They don't really believe that, but it's a useful tactic. It dupes the unsuspecting. There are many examples. Take the claim that Paul doesn't really condemn homosexuality.

**ii)** Enns is, himself, a purveyor of this tactic. Take his infamous book on **INSPIRATION AND INCARNATION**. Now, that was already bad enough. But I always figured that he was saying less than he really believed when he wrote it. The book was a trial balloon. If he got a favorable reception, then he'd feel free to stake out an even more radical position.

And, in fact, after he was fired from WTS, he openly denied the historicity and inerrancy of Scripture. Although his attack was originally masked in "hermeneutical" categories, that was a decoy.

I'm not saying the distinction between authority and interpretation is inherently suspect. That can be a legitimate distinction. But it's often abused—and deliberately so—to conceal an ulterior agenda.

**iii)** In addition, the way he frames the issue is deception. For liberals typical read Gen 1-3 just as "literally" as conservatives. Liberals typically think the narrator intended to recount historical events. They just think he was mistaken. He didn't know any better. He *couldn't* know any better. Let's quote two liberal scholars on Genesis:

Etiology may be defined as "a narrative designed in its basic structure to support some kind of explanation for a situation or name that exists in the time of the storyteller." The term "etiology" may thus be applied to any narrative giving the past, historical reason for a present reality (the present of the author)...Often in Genesis, an episode is concluded with an etiological connection that helps the reader understand why something is as it is, and secondarily prepares the reader for the next unit of the book. So, for example, the Privemal History uses etiologies to explain sabbath law (2:1-3), marriage (2:24), serpentine locomotion (3:14), human hatred of snakes (3:15), pain in childbirth (3:16), and many others. B. Arnold, Genesis (Cambridge 2009), 10-11.

Over the last 10 to 15 years this term has been embraced by evangelical Christians who also accept biological evolution. Of course, the issue of Adam is a point of disagreement. Some who identify themselves as "evolutionary creationists" accept that there was a historical Adam. In other words, they tack Adam on the tail end of evolution.

But I disagree with this approach. It would be similar to attaching a 3-tier universe at the end of cosmological evolution. I doubt anyone wants to do that. Why? It's categorically inappropriate. We cannot mix modern science (biological evolution and cosmological evolution) with ancient science (de novo creation of Adam and a 3-tier universe).

Those who pin Adam to the tail end of evolution are scientific concordists because modern genetics offers no evidence for his existence. Their belief in Adam comes from Scripture, not science. And from my perspective, scientific concordism always falls short. Now there are some who attempt to argue that Adam was taken from a population of humans and that he was the first person to be in a relationship with God. The analogy used is that Adam is like Abraham in that he was called by God. However, this is definitely not in the Bible. Genesis 2 does not talk about Adam being called from some group of humans. Genesis 2 is a creation account and clearly states that the Lord made Adam de novo from the dust of the ground.

<http://biologos.org/blog/interpreting-adam-an-interview-with-denis-lamoureux-part-2>

De novo creation is the ancient conceptualization of origins found in the Bible. This term is made up of the Latin words de meaning "from" and novus "new." Stated more precisely, it is a view of origins that results in things and beings that are brand new. This type of creative activity is quick and complete. It appears in a majority of ancient creation accounts and it involves a divine being/s who act/s rapidly through a series of dramatic interventions, resulting in cosmological structures (sun, moon, stars) and living

organisms (plants, animals, humans) that are mature and fully formed.

Considering the limited scientific evidence available to ancient peoples, this conceptualization of origins was perfectly logical. As with all origins accounts, including those held by us today, the ancients asked basic etiological questions (Greek *aitia*: the cause, the reason for this). These included: Where did these things or beings come from? Why are they this way? Who or what is responsible for their origin? There was no reason for ancient peoples to believe the universe was billions of years old, and they were unaware that living organisms changed over eons of time as reflected in the fossil record. Instead, the age of the world was limited to the lengths of their genealogies, many of which were held by memory, and therefore quite short. Biological evolution was not even a consideration because in the eyes of the ancients, hens laid eggs that always produced chicks, ewes only gave birth to lambs, and women were invariably the mothers of human infants. Living organisms were therefore immutable; they were static and never changed. In conceptualizing origins, ancient people used these day-to-day experiences and retrojected them back to the beginning of creation (Latin *retro*: backward; *jacere*: to throw). Retrojection is the very same type of thinking used in crime scene investigations. Present evidence found at the scene is used to reconstruct past events. In this way, the ancients came to the reasonable conclusion that the universe and life must have been created quickly and completely formed not that long ago. And this was the best origins science-of-the-day.

Grasping the notion of *de novo* creation is one of the keys to understanding Genesis 1 and the origins debate. This creation account refers 10 times to living



creatures reproducing “according to its/their kind/s.” Young earth creationists and progressive creationists argue that this phrase is incontestable biblical evidence against biological evolution, because God created separate groups of organisms. They term these groupings “created kinds” or “baramins” (Hebrew *bārā’*: to create; *min*: kind). However, this popular anti-evolutionist belief that the Creator intervened dramatically in the creation of individual groups of plants and animals fails to appreciate the ancient mindset and its intellectual categories. The phrase “according to its/their kind/s” reflects an ancient phenomenological perspective of living organisms (Note: this is not to be confused and conflated with our modern phenomenological perspective. What the ancients saw, they believed to be real and actual, such as the literal movement of the sun across the sky. In contrast, what we see today, we understand to be only apparent and a visual effect, such as the “movement” of the sun). Ancient people always saw that birds reproduce birds, which reproduce birds, which reproduce birds, etc. They retrojected this experience back into the past and came to the logical conclusion that there must have been some first or original birds that the Creator had made *de novo*. Thus, the *de novo* creation of living organisms, such as birds in Genesis 1, is based on the classification of life in static or immutable categories, as perceived by ancient peoples like the Hebrews. More specifically, it reflects an ancient biology; and in particular, an ancient understanding of taxonomy.

<http://biologos.org/blog/was-adam-a-real-person-part-i>

Notice that Denis Lamoureux and Bill Arnold both think Genesis was meant to be a book of origins. A book of firsts. The narrator intended his account to explain the source of many familiar and fundamental, present-day aspects of human experience by tracing them back to their historical point of origin. Where did the world come from? Did it always exist? Or did it begin to exist? Where did plants and animals come from? Where did humans come from? Why do humans die? Why do humans suffer?

That understanding of Genesis doesn't require any prior commitment to the veracity of the account. Rather, it assumes the viewpoint of the narrator for interpretive purposes. It understands the text on its own terms, according to the assumptions and intentions of the narrator.

So Enns has the relationship precisely backwards. The authority of Scripture *is* the bone of contention—*not* hermeneutics. Liberals like Arnold and Lamoureux construe Genesis in the same basic way as conservatives. The parting of the ways comes downstream. They feel free to reject what the text asserts to be the case.

***2. You're giving science more authority than the Bible.*** This, too, may have some rhetorical effect, but it misses the point.

To say that science gives us a more accurate understanding of human origins than the Bible is not putting science "over" the Bible—unless we assume that the Bible is prepared to give us scientific information.

There are numerous compelling reasons to think that Genesis is not prepared to provide such information—namely the fact that Genesis was written at least 2500 years ago by and for people, who, to state the obvious, were not thinking in modern scientific terms.

One might respond, "But Genesis was inspired by God, and so needs to be true."

That assertion assumes that "truth" is essentially synonymous with historical accuracy and that a text inspired by God in antiquity would, by virtue of its being the word of God, need to give scientific rather than ancient accounts of origins.

One basic problem with this formulation is that it misdefines the issue. The question at issue is not whether Gen 1-3 is written in scientific terms, but whether it makes factual claims.

**4. Both Paul and the writer of Genesis thought Adam was a real person, the first man.** Denying the historicity of Adam means you think you know better than the biblical writers. More rhetorical punch, but this assertion simply sidesteps a fundamental interpretive challenge all of us need to address on one level or another.

All biblical writers were limited by their culture and time in how they viewed the physical world around them. This is hardly a novel notion of inspiration, and premodern theologians from Augustine to Calvin were quite adamant about the point.

No responsible doctrine of inspiration can deny that the biblical authors were thoroughly encultured, ancient people, who spoke as ancient people. Inspiration does not cancel out their "historical particularity," no matter how inconvenient.

Any notion of inspiration must embrace and engage the notion that God, by his Spirit, speaks within ancient categories.

We do indeed "know more" than the biblical writers about some things.

Notice that in #'s 2 & 4, Enns implicitly contradicts what he said in #1. Now he's admitting that this really is about Biblical authority. He thinks the narrator was ignorant. He thinks the account is erroneous.

Or course, that's only possible if he himself interprets the account "literally" in the sense that he thinks the narrator intended to record historical events. If the narrator never meant his account to be about real people, real places, and actual events in the past, then what he wrote couldn't be wrong even in principle. A necessary precondition of historical error is the determination to make statements that match reality.

This may be a hermeneutical issue in abstraction, but at a concrete level, Enns has resolved the hermeneutical questions to mean that Gen 1-3 makes factual claims. He simply thinks the author got it wrong. Either Enns is prevaricating, or he's so conditioned by his polemical tactics that he fails to recognize his contradictory objections.

***5. Genesis as whole, including the Adam story, is a historical narrative and therefore demands to be taken as an historical account.*** It is a common, but nevertheless erroneous, assumption that Genesis, as a "historical narrative," narrates history.

Typically the argument is mounted on two related fronts:

(1) Genesis mentions by name people and places; we are told that people are doing things and going places. That sounds like a sequence of events, and therefore should be taken as "historical."

(2) Genesis uses a particular Hebrew verbal form (waw consecutive plus imperfect) that is used throughout Old Testament narratives to present a string of events—so-

and-so did this, then this, then went there and said this, then went there and did that.

As the argument goes, we are bound to conclude that a story that presents people doing things in a sequence is an indication that we are dealing with history.

That may be the case, but the sequencing of events in a story alone does not in and of itself imply historicity. Every story, whether real or imagined, has people doing things in sequences of events.

This does not mean that Genesis can't be a historical narrative. It only means that the fact that Genesis presents people doing things in sequence is not the reason for drawing that conclusion.

The Lord of the Rings masterfully records in great and vivid detail people (and others) doing things in sequence. But is it still pure fiction. A Tale of Two Cities does the same, but that doesn't make it a reliable guide to historical events.

**i)** To begin with, that oversimplifies the conservative position. It's not merely a sequence of events, but a *causal* sequence of events. Genesis says some things happened at a later date because other things happened before then. Historical causation. For instance, humans die because they were denied access to the tree of life when Adam and Eve were expelled from the Garden. Later humans are linear descendants of the first breeding pair. God sent the flood because humanity was engulfed in depravity. And so on.

**ii)** Enns is correct that, in theory, a fictional history can have the same format. But notice how radical that is if systematically applied. The conservative argument is that it's artificial to sequester Gen 1-3 from the rest of Genesis, or the rest of the Pentateuch. This unit is part and parcel of a continuous narrative. Indeed, this is what initiates the aftermath. If, therefore, you regard Gen 1-3 as fictional,

then, to be consistent, you should treat Gen 4-11 as fictional, or the calling of Abraham, or the calling of Moses, or the 10 plagues, or the wilderness wandering. Enns is probably prepared to take that to its logical extreme. But when he's in attack mode, keeps his cards closer to his vest.

***7. Since Adam is necessary for the Christian faith, we know evolution can't be true.*** Evolution causes theological problems for Christianity. There is no question of that. We cannot simply graft evolution onto evangelical theology and claim that we have reconciled Christianity and evolution.

The theological and philosophical problems for the Christian faith that evolution brings to the table are hardly superficial. They require much thought and a multi-disciplinary effort to work through. For example:

Is death a natural part of life or unnatural, a punishment of God for disobedience?

What does it mean to be human and made in God's image?

What kind of God creates a process where the fittest survive?

How can God hold people responsible for their sin if there was no first trespass by a first human couple?

A literal, historical, Adam answers these and other questions. Without an Adam, we are left to find other answers. Nothing is gained by papering over this dilemma.

But, here is my point: The fact that evolution causes theological problems does not mean evolution is wrong. It means we have theological problems.

Normally, we all know that we cannot judge if something is true on the basis of whether that truth is disruptive to us. We know it is wrong to assume one's

position and then evaluate data on the basis of that predetermined conclusion.

We are also normally very quick to point out this logical fallacy in others. If an atheist would defend his/her own belief system by saying, "I reject this datum because it does not fit my way of thinking," we would be quick to pounce.

The truth of a historical Adam is not judged by how necessary such an Adam appears to be for theology.

**i)** Enns takes the truth of human evolution for granted, but that's hotly contested. Indeed, even some very prominent Darwinians concede that the theory of evolution has failed, thus far, to identify mechanisms adequate to generate the outcome.

**ii)** Because Enns is intellectually superficial, he fails to appreciate the skeptical consequences of evolutionary psychology for the reliability of human reason. You can't remove the Creator and leave the creature intact. You undermine human rationality in the process.

Theistic evolution can attempt to salvage human reason by positing a guided or directed process. But one issue is whether that's a makeshift position.

**iii)** Actually, it's perfectly logical to say that if Christian theology is true, and evolution conflicts with Christian theology, then that falsifies evolution. Whatever you take to be true forms the frame of reference. So Enns's position is logically reversible. It all depends on your standard of comparison.

To be a Christian is to evaluate claims from a Christian perspective. By definition, a Christian will assume a Christian position. A Christian will assume the truth of

Christian theology. Otherwise, he wouldn't be a Christian believer.

**iv)** Apropos (iii), the problem with how he frames the issue is that a Christian believer is someone who already crossed that checkpoint. The question of whether or not Christian theology is true is now behind him. He wouldn't be a Christian believer in the first place unless he had already resolved that question in his mind, and resolved it in favor of Christianity. This is not the situation of an agnostic who's considering the Christian faith. For a Christian believer, the truth of Christian theology *is* a "predetermined conclusion" at *that* stage of his deliberations.

At best, Enns's only makes sense in reference to professing Christians who are revisiting that question, who are now questioning their Christian faith. It's no longer settled in their minds. They have reopened the inquiry. They may conclude that Christian theology is unbelievable.

To accept a tenet that doesn't fit a Christian way of thinking is to cease thinking like a Christian. At that point he's no longer operating within a Christian framework. That's not a choice between two different ways of conceiving Christian theology, but a choice between accepting or rejecting Christian theology.



## Scientific challenges to Adam

In the latest round of the ongoing debate over the historicity of Adam, it might seem to some Christians that the traditional belief is taking on water with mounting scientific evidence to the contrary. Sure, Christian apologists can continue to fight rearguard actions. Practice guerilla tactics. We can always regroup. Come up with ingenuous explanations to save the phenomena, but doesn't the effort look increasingly desperate? Shouldn't we do the honorable thing and concede defeat? We gave it the old college try, but the opposition won fair-n-square.

Of course, that way of framing the issue takes certain things for granted regarding the state of the evidence. And that, itself, is hotly contested.

But for now I'd like to make a different point. In the history of ideas, including the history of philosophy and science, every major idea, right or wrong, is bound to be challenged. There will always be new challenges to old ideas, right or wrong.

One of the striking things about the history of ideas is that once a major idea is introduced into the discussion, it rarely goes away. There are precious few knockdown arguments in the history of ideas. Major ideas, along with competing ideas, are very tenacious.

What usually happens, in the course of debate, is not a case where one side wins while the other side loses. Rather, after every debate, each side becomes a bit more sophisticated. It takes the objections into account and develops a more refined version of the original position. This dialectical

process goes on generation after generation. It's a constant battle, back-and-forth.

For every argument there's a counterargument. However often you beat back the challengers, there will always be a new challenger just over the hill. For instance, Darwinism has continuously reinvented itself.

Yes, it may look like special pleading when Christians defend the historical Adam against the "latest scientific evidence," but that's hardly unique to Christian dogma. These debates are inherently cyclical. Both sides periodically retool their arguments.

The arguments today aren't just the same arguments from a century ago. And the arguments a century from now won't be just the same as they are today. So we need to keep things in perspective. Because we live in the present, our outlook is necessarily blinkered.

## "Inspired myth"

Defenders of Peter Enns sometimes invoke the category of “inspired myths.” They justify this category as a divine accommodation to historical horizon of ANE readers. A scientifically accurate account would be unintelligible to ancient readers.

And it is, of course, true, that a creation account written in modern technical jargon would be unintelligible to ancient readers. However, assuming (arguendo) that Darwinism is true, it would be possible to express evolutionary ideas in popular language or picturesque descriptions.

If Gen 2 can describe the creation of the woman from the man, then the narrator could describe the creation of human beings from lower animals. The narrator could use the same basic imagery or process. God creates animals, then God uses that raw material to make the first man and woman (or the first men and women). If Gen 2 can depict God making a woman from the body of a man, then the narrator could also depict God making a man from the body of an animal. That would be theistic evolution, cast in terms understandable to ANE readers.

So “inspired myth” is a solution to a pseudoproblem. It operates on a false assumption regarding what was communicable to ancient readers. Assuming (arguendo) that theistic evolution is actually the way that God made mankind, it would be possible to express that idea in idiomatic terms already available to the narrator (e.g. animation, mediate creation, the imago Dei). It could go something like this:

**So the Lord God caused a deep sleep to fall upon a beast of the earth, and while it slept took one of its ribs and closed up its place with flesh. And the rib that the Lord God had taken from the beast he made into a man. Then the Lord God breathed into his nostrils the breath of life, and the man became the image of God.**

So the fact that Gen 1-2 doesn't give us an evolutionary creation account, even though that would be easy to do, invalidates the argument for revealed mythology.

## God's audible voice

Having done a general commentary on Craig's treatment of Gen 1-3, I'd like to zoom in on one detail:

The anthropomorphic nature of God, which is merely hinted at in chap. 2, becomes inescapable in chap 3, where God is described as walking in the garden in the cool of the day, calling audibly to Adam...many features of these stories are fantastic. That is to say, they are palpably false if taken literally.

<https://www.youtube.com/watch?v=OC9zwO0Gw40&t=165s>

- 1.** Is Craig suggesting that if Gen 2-3 attributes an audible voice to God, that's palpably false if taken literally? In his overall treatment of the account, that's one of the "fantastic" features he singles out as metaphorical.
- 2.** If so, that's a remarkable position for a Christian apologist to take. It would be understandable from John Spong or Rudolf Bultmann. If he's stating a general principle, then it can't be confined to Gen 2-3 or Gen 1-11. The same principle extends to the patriarchal narratives, Exodus, Numbers, Deuteronomy, the Historical Books, the Prophets, the Gospels, Acts, &c.
- 3.** Over and above Scripture, many Christians claim that God spoke to them in an audible. I'm not suggesting that we should credit every reported voice of God. But if enough Christians say God spoke to them in an audible voice, that's evidence that it happens some of the time. Not all of them are wackos or charlatans.

**4.** Perhaps, though, what Craig means by an "audible" voice is not a voice you hear in your mind, not God communicating telepathically, but a physical external voice. If God spoke to someone in an audible voice, and someone else was standing next to him, they'd both hear the voice. An objective sound. Maybe that's what Craig deems to be "fantastic" and "palpably false".

If so, what is the basis of Craig's objection? Surely God can miraculously structure sound waves to create a disembodied, but external voice. I'd at that even on the telepathic interpretation, God is able to communicate the same message to two or more people at the same time.

**5.** But maybe what Craig has in mind is not a disembodied voice, but an embodied voice. If God is an incorporeal being, then he can't use an audible voice in that sense.

But consider the Angel of the Lord. Consider the "mechanics" of the Angel of the Lord. In the OT, angels sometimes have physicality. They can materialize and dematerialize. In principle, the Angel of the Lord might have one of two modalities:

**i)** God takes possession of an actual angel. A preexistent angelic being—like Michael or Gabriel. He uses the angel as a vehicle to express himself—akin to how God sometimes takes possession of a human seer.

**ii)** God creates a temporary body every time the Angel of the Lord appears. A temporary material vehicle to speak to humans and interact with the physical surroundings. And it ceases to exist after it serves the immediate purpose. It might be a humanoid body, or a luminous body, depending on how God wants to present himself.

**6.** But maybe Craig's point is not that God's audible voice is "palpably false" considered in isolation, but as one more contribution to the overall scene in Gen 2-3. One of several cumulative, telltale signs that "these stories are fantastic (i.e. palpably false if taken literally)".

Yet the "fantastic" details are a fixture of biblical supernaturalism. Unfortunately, Craig's treatment of Gen 1-3 is a gift to infidels. He argues that Gen 1-3 is pious fiction. While he avoids the term, that's what his position amounts to. And to judge by his treatment of Gen 1-3, we can expect him to treat the flood account as fictional, too.

## Is Genesis "mytho-history"?

After completing his research program on penal substitution, Craig moved on to his next research program regarding the historical status of Genesis. This seems to be an interim report, but I'm guessing it's a forecast of his final views:

<https://www.youtube.com/watch?v=OC9zwO0Gw40&t=165s>

No one was expecting Craig to emerge from his studies a young-earth creationist. I wonder if he even bothered to read the best of the young-earth creationists. The question was whether he'd land on the side of old-earth creationists like Vern Poythress and John Collins or the BioLogos crowd. Now we know.

Myths are not always best interpreted literalistically... Now we want to make application of these insights to Gen 1-11...A non-literal interpretation of these narratives (Gen 1-3) is very plausible. First and foremost is the creation of the world in 6 consecutive 24-hour days. A description that doesn't require a knowledge of modern science to recognize as metaphorical.

**i)** An equivocation or category error that runs through his analysis is failure to distinguish between symbol and metaphor. While a metaphor is symbolic, it doesn't follow that a symbol is metaphorical. A metaphor is a literary device. By contrast, a symbolic be an object in the real world. For instance, the tabernacle and the temple were loaded with symbolism, but they weren't metaphors.



**ii)** I'm inclined to agree with him that Gen 1 isn't strictly chronological. The major impediment to that interpretation is the relationship between day one and day four. The diurnal cycle is already operative on day one. Sunrise and sunset are what constitute morning and evening, dawn and dusk. So days 1-3 appear to be solar days.

**iii)** That said, nonlinear narration doesn't imply a metaphorical story. Take documentaries with flashbacks. That's nonlinear narration. But that doesn't make a documentary metaphorical. So Craig's inference is illogical. In fairness, maybe he's provided a stronger argument in one of the precedent episodes in the series.

Next is the humanoid deity which appears in chapters 2-3—in contrast to the transcendent Creator of the heavens and the earth in chapter 1.

That's such a wormy chestnut. Naturally God is more "transcendent" in Gen 1. It's an account of creation in general. Inorganic, inanimate, and subhuman creation. By contrast, God is interacting with humans in Gen 2-3, so God is inevitably more down-to-earth in that context. God doesn't relate to human beings the same way he relates to rocks and trees and stars.

The anthropomorphic nature of God, which is merely hinted at in chap. 2, becomes inescapable in chap 3, where God is described as walking in the garden in the cool of the day, calling audibly to Adam, who is hiding from him...Read in light of Gen 3, God's creation of Adam in Gen 2 takes on an anthropomorphic character as well. Here God is portrayed like the Mesopotamian goddess...shaping bits of clay into a human being, or the Egyptian god...sitting at his potter's wheel, forming man—as fashioning man out of the dust of the ground

and then breathing into his nostrils the breath of life so that the earthen figure comes to life.

We're not told whether God similarly formed the animals when—I quote—out of the ground the Lord God formed every beast of the field and bird of the air (2:19). But we can't help but wonder if they weren't formed in the same way as man.

When God takes one of the sleeping Adam's ribs, closes up the flesh and builds a woman out of it, the story sounds like a physical surgery which God performs on Adam, followed by building a woman out of the extracted body part.

Similarly, given God's bodily presence in the garden, the conversations between God and the protagonists in the story of the fall—namely Adam, Eve, and the serpent, read like a dialogue between persons who are physically present to one another. God's making garments for Adam and Eve out of animal skins and driving them out of the garden sound like physical acts by the humanoid god.

Given the exalted, transcendent nature of God described in the creation story, the Pentateuchal author could not possibly have intended these anthropomorphic descriptions to be taken literally. They are the figurative language of myth.

**i)** The general problem with this objection is that he fails to take Pentateuchal angelology into consideration, including the theophanic angel (Angel of the Lord). Paradigm examples include Gen 18, Exod 3 & Exod 33. In fact, Craig fields a question about that. His response is that God isn't identified as the Angel of the Lord in Gen 2-3. But that's

shortsighted. Readers would be expected to understand Gen 2-3 against the background (or foreground) of the Pentateuch generally. Everything isn't stated all at once. Details are filled in over the course of the Pentateuchal storyline. Certain characters are introduced with minimal exposition. You learn more about them as the plot progresses.

**ii)** He reads more into the creation of Adam than is actually stated. The description is sketchy and impressionistic. While it triggers associations with a potter (which is no doubt intentional), it doesn't detail that comparison. So the intention is probably that the creation of Adam is analogous to pottery, but not the same process.

**iii)** God poses rhetorical questions to elicit a confession.

Moreover, many features of these stories are fantastic. That is to say, they are palpably false if taken literally. And here I'm talking about features of the narrative that the author himself would have plausibly thought fantastic...For example, chap 2 begins by saying that when God created man, it had never rained upon the earth. Now this seems fantastic. Ancient Israelites understood the water cycle, as is abundantly attested throughout the OT. In light of chap. 1's affirmation that God had separated the waters above from the waters below, it's hard to believe that the author thought that there was ever a time in the earth's history when the earth was utterly devoid of rain.

It never dawns on Craig that Gen 2 describes the land of Eden, not the earth in general. The garden was situated somewhere in Mesopotamia. It's watered by one of the rivers. The reader should envision something like a riparian zone or a fluvial island.

Then there is the description of the garden of Eden, with its tree of life and tree of the knowledge of good and evil. These are plausibly symbolic. The idea of an arboretum containing trees bearing fruit, which if eaten would confer immortality or yield sudden moral knowledge of good and evil, must have seemed fantastic to the Pentateuchal author. Keep in mind here that we are not dealing with miraculous fruit—as if God would on the occasion of eating impose immortality or supernatural knowledge of good and evil on the eater, for these were against his will. The fruit is said to have their effect even contrary to God's will.

**i)** The tree of life wasn't forbidden.

**ii)** Although Craig thinks it's "fantastic" that the God would on the occasion of eating confer supernatural knowledge of good and evil on the eater, contrary to his prohibition, what's the exegetical evidence that the narrator shared Craig's scruples? Indeed, it turns out that eating the forbidden fruit is punitive in itself. They expect one thing but what they experience is not what they hoped for. A rude surprise. A shocking revelation.

To take a comparison: suppose you're told not to eat berries from a particular bush. But you disregard the warning. Turns out the berries are poisonous. That in itself is a punishment for flouting the admonition. You ate the berries because they look delicious. Maybe they are delicious. But the pleasure is short-lived.

They don't know in advance what the tree of knowledge represents. They only know what the Tempter told them it stands for. They take his word for it. Then they found out the hard way it's not what they were counting on.

The garden of Eden may have described an actual existing geographical location—plausibly the Persian Gulf oasis, but like Mt. Olympus in Greek mythology, that site may have been employed to tell a mythological story about what happened at that site.

Does he apply the same reasoning to the patriarchal narratives, or the Exodus, or the Gospels?

Then there is the notorious walking and talking snake in the garden. Now he makes for a great character in the story: conniving, sinister, opposed to God. Perhaps a symbol of evil. But not plausibly a literal reptile such as you might encounter in your own garden. For the Pentateuchal author knew that snakes neither talk nor are intelligent agents. Again, the snake's personality and speech cannot, like Balaam's ass, be attributed to miraculous activity on the part of God lest God become the author of the Fall. The snake is not identified as an incarnation of Satan. Rather, he is described simply as the craftiest of the beasts of the field which the Lord God had made—a description which is incompatible with his being Satan.

**i)** Craig is evidently unaware of the fact that Hebrew syntax is ambiguous. Does it include the Tempter in the animal kingdom (comparative construction), or exclude the Tempter from the animal kingdom (partitive construction)? The context must decide.

**ii)** God has created a causal order in which things have an effect even when misused or abused. Even when we break God's law. If you commit fornication or adultery, God isn't going to suspend the possibility of pregnancy. The reproductive system will still perform its God-given design,

even though you act contrary to his commands and prohibitions. Whether the effect is natural or supernatural has no bearing on theodicy.

When you look at snakes in the ancient Near East, they are used as symbols for a wide range of things...they could be worshipped but they could also represent evil and sinister powers...so snakes could be regarded as wicked and so forth.

True, but in that event the original audience might well be expected to recognize in the Tempter, not a reptile, but a malevolent numinous being. In that case, the designation of the Tempter is paronomastic. A code name or pun to play on the evil, sinister connotations of snake-gods.

"...upon your belly you shall go"—this sounds like an etiological explanation of why snakes slither on the ground.

**i)** As Walton explains in his commentary on Genesis, imprecations against venomous snakes were commonplace in the ancient Near East. The imagery involves a contrast between a snake poised to strike, and a snake facedown. For instance, a cobra, with its short, backset fangs, must raise itself to a vertical position to strike (unlike vipers). Facedown is not an attack position.

**ii)** That interpretation also dovetails with the imagery of the next verse. Snakes usually bite the lower extremities. So the curse is not an etymology about why snakes slither, but continues the serpentine symbolism by treating the Tempter like a snake—thereby evoking a range of cultural associations with "snakes".

**iii)** Keep in mind that in many cultures, humans adopt animal names, hoping to reflect whatever is impressive about the animal. Merely having an animal name carries no presumption that the individual is in fact an animal.

When God finally drives the man and his wife out of the garden of Eden, he stations at its entrance "cherubim, and a flaming sword which turned every way to guard the way to the tree of life" (Gen 3:24). What makes this detail fantastic is that the cherubim were not thought to be real beings but fantasies composed of a lion's body, a bird's wings, and a man's head. The Jewish commentator Nahum Sarna...observes that the motif of composite human/animal/bird figures was widespread in various forms throughout the ancient Near East, and he thinks that it is prominent in both art and religious symbolism and that the biblical cherubim seem to be connected with this artistic tradition. Cherubim filled multiple roles in the biblical tradition, such as symbolizing God's presence or God's sovereignty. Artistic representations of such creatures were to be found in the tabernacle and the temple, including in the holy of holies. Sarna points out that they are the only pictorial representation permitted in Judaism—an otherwise anti-iconic religion. They don't violate the prohibition against images because they are purely products of the human imagination and so do not represent any existing reality in heaven and earth. And thus images of them could be made in ancient Israel without breaking the second commandment prohibiting images of things in heaven or on earth, for the cherubim were not real.

**i)** Are the cherubim in Ezekiel not real beings but artistic fantasies? Are the cherubim in Ezekiel mere figments of human imagination? To the contrary, the artistic cherubim in the tabernacle are modeled on real angels. A point of correspondence between heaven and earth.

**ii)** The Mosaic code allows for pictorial representations of flora in the tabernacle.

**iii)** How does it follow that pictorial representations are permissible so long as they are purely products of human imagination rather than representing real things in heaven? Isn't the problem of idolatry nearly the opposite? The idolater misrepresents God by depicting deities that are figments of the human imagination. That don't correspond to what God is really like? Would an idol of Baal or Ishtar not violate the second commandment because Baal and Ishtar don't exist?

And yet, here in Gen 3, they are posted as guards, at a time and place in history, along with a rotating, flashing sword to guard for an indeterminate time the garden of Eden against man's reentry into the garden. Now since cherubim were regarded as creatures of fantasy and symbol, it's not as if the author thought what realism would require—that the cherubim remain at the entrance to the garden for years on end until it was either overgrown with weeds or swept away by the flood.

**i)** Even if we grant how he frames the issue, it raises speculative questions about angelic psychology. Do angels get bored? Do angels get tired? How do angels ordinarily pass the time? Do they require external stimulation? From what little Scripture reveals about angels, they seem to be telepathic. If so, they presumably have a group



consciousness. They can tap into the minds of fellow angels. In that respect, their minds may roam far and wide even if they are "stuck" in one place.

**ii)** However, that's all unnecessary. Why assume the same cherubim guarded the garden round-the-clock? The text doesn't say that. Why not rotate? How about two-hour shifts?

For that matter, why assume the garden requires sentinels on duty round the clock? The text doesn't say that. Why not leave it unguarded unless and until a human approaches, at which point cherubim resume their stations.

## Prediluvian history

I'm going to repost some comments I left at Lydia McGrew's blog reviewing Walton's book on *The Lost World of Adam and Eve*. My comments are not directly in response to her review, but in response to other commenters.

Some professing Christians have an oddly compartmentalized plausibility structure. For instance, I've read things by Stanley Jaki on Genesis, Lourdes, and Fatima. Jaki rejects the traditional interpretation of Gen 1-3 on naturalistic grounds, yet he takes Lourdes and Fatima very seriously. What makes Lourdes or Fatima credible, but Gen 1-3 incredible?

Posted by steve hays | March 24, 2015 2:30 PM

MarcAnthony:

"Presumably the available evidence."

That raises a host of interesting questions:

**i)** Many times, we have no evidence for a historical event over and above historical accounts of the event in question. Sometimes there may be independent corroborative physical evidence, but oftentimes not.

What's our evidence for the Battle of Waterloo? Historical accounts.

Depending on one's view of Scripture, the account of Gen 2-3 is, itself, evidence for the occurrence of what it records.

**ii)** There are people who think Gen 2-3 is literally ridiculous, but implicitly believe that a consecrated wafer contains the entire body, blood, soul, and deity of Christ. Seems like an oddly segregated belief-system to me.

**iii)** Normally, humans are the product of a human male impregnating a human female. But if the Virgin Birth is true, then that's an exception—just as the creation of Adam and Eve would be exceptional.

Now, if you did a full medical workup on Jesus, I assume he'd be indistinguishable from someone conceived by procreation. If, however, God bypassed ordinary natural processes in the conception of Jesus, the available evidence will be consistent with either a natural or supernatural origin. Both interpretations are empirically adequate and empirically indistinguishable—but only one is right.

Suppose I arrive late at the feeding of the five thousand. I see a crowd eating fish and bread. I assume fishermen caught the fish in the nearby lake, while bakers produced the loaves of bread. And that's a reasonable operating assumption, given my limited evidence.

If, however, Jesus miraculously multiplied fish and bread, then my inference was wrong. It didn't take that factor into consideration.

**iv)** Apropos (iii), how we evaluate the evidence depends, in part, on presuppositions that we bring to the evidence. Presuppositions that lie outside the evidence proper—although there may be evidence for our presuppositions.

If the effect is the end-result of allowing nature to take its course, then that's one thing. If the effect is the immediate result of supernatural agency, that's another thing. And it may not be possible to retroengineer the cause from the effect. We may be able to retrace the process provided that it was a normal process. But what's the evidence for the proviso?

To take a comparison: in robotics it's possible to make a robot that can make other robots like itself. Most robots will

be made by other robots. But the initial robot in the series must be designed and constructed by an engineer.

From a scientific standpoint, I don't believe that either heliocentrism or geocentrism is true. These are relative reference frames concerning relative motion.

Now, if you take it to the next step by asking about the underlying causes of their respective motion(s), like gravity, then the physics will be very different.

Posted by steve hays | March 21, 2015 11:12 PM

[Wittgenstein] once greeted me with the question: "Why do people say that it was natural to think that the sun went round the earth rather than that the earth turned on its axis?" I replied: "I suppose, because it looked as if the sun went round the earth." "Well," he asked, "what would it have looked like if it had looked as if the earth turned on its axis?" E. Anscombe, **AN INTRODUCTION TO WITTGENSTEIN'S TRACTATUS** (Harper & Row, rev ed.,1965), 151.

Posted by steve hays | March 22, 2015 12:30 PM

I think we need to draw some distinctions, or at least make some implicit distinctions explicit:

**i)** We should distinguish between what Gen 1-3 means, and whether its meaning is normative for Christians.

**ii)** Apropos (i), some theologians do it backwards. They begin with what they think is true, then interpret Gen 1-3 accordingly. They discount interpretations which they think are false.

Problem is, they don't let the text speak for itself. They often begin with their modern scientific understanding.

That's their standard of comparison. They then use that as the interpretive grid. But, of course, that's anachronistic.

**iii)** Apropos (ii), exegesis typically seeks to ascertain original intent or authorial intent. The text means what the author intended to convey by his choice of words.

An exegete consciously avoids imposing his own preconceptions onto the text. Rather, he attempts, if only for the sake of argument, to assume the viewpoint of the author. For instance, a Dante commentator will view the text through the Dante's cultural lens. Not what makes sense to the commentator, but what would make sense to Dante—given Dante's time, place, and outlook.

**iv)** One potential objection is that, given the dual authorship of Scripture, what is normative is divine intent, not human intent. Indeed, Walton tries to salvage inerrancy by recourse to speech-act theory. For him, the narrator's locutions are errant, but the divine illocutions, behind the locutions, are inerrant.

However, an obvious problem with that dichotomy is that we can only access the illocutions via the locutions. Typically, an author uses certain locutions to express his illocutions.

God communicates truth through the instrumentality of the human author. Hence, the human intent expressed in human locutions can't be at cross-purposes with the divine intent or divine illocutions.

**v)** A theistic evolutionist can be a theist for philosophical reasons and an evolutionist for scientific reasons.

The problem, from a Christian perspective, is when there's an effort to make theistic evolution intersect or coordinate with Scripture. That characteristically results in hybrid interpretations. The "Adam" of theistic evolution isn't the

Adam of Genesis. At best, the "Adam" of theistic evolution is a makeshift construct. Equally artificial from both an exegetical and scientific standpoint.

**vi)** In principle, one can bypass that stopgap compromise by sidelining Scripture altogether. However, Christianity claims to be a revealed religion. Biblical revelation can't be sidelined if the result is to remain Christian.

If, however, the correct interpretation is theologically normative, then evolution can't be permitted to leverage either the interpretation of Scripture or the content of Christian theology.

Posted by steve hays | March 21, 2015 11:45 PM

Let's provide a baseline standard of comparison—between the Adam of Genesis and the Adam of theistic evolution (of which there are various models).

In Gen 2-3:

- i)** Adam has no animal, human, or prehuman ancestry.
- ii)** Adam is directly created from inanimate raw materials.
- ii)** Eve is directly created from organic matter (i.e. a tissue sample supplied by Adam).
- iii)** All humans, past and present, are descendants of Adam and Eve.
- iv)** Humans die because Adam and Eve were banished from Eden, which cut them off from the tree of life.

Posted by steve hays | March 22, 2015 12:03 PM

Step2:

"Lydia, Let me just ask directly..."

While we're at it, it would be instructive for Step2 to lay his own cards on the table. Are you an atheist? Secular Jew? Liberal Catholic? Lapsed Catholic?

What's your frame of reference? What's the tacit plausibility structure that you're bringing to your criticisms of Lydia's reviews?

"(technically they should have died that very day)"

**i)** That's a stereotypical village atheist objection. One problem with that objection is the critic's conceit that the narrator was too dense to realize that he made God contradict himself, as if God forgot his threat.

Even if you deny the inspiration of Scripture, a prudent exegete doesn't simply presume that a storyteller is blatantly inconsistent. Rather, a prudent exegete considers what it must have meant to the storyteller.

**ii)** "In/on the day that" is an idiom for "when." That's why more literal versions reproduce the phrase as is in [Gen 2:4](#) while more dynamic versions render it idiomatically in 2:4.

By itself, the adverb ("when") doesn't specify the time at which something will happen. Rather, that's the earliest starting point at which it can happen. It can happen anytime after that terminus ad quo, but not before that.

"On a similar debate at Feser's blog somebody brought up the notion that Adam/Man was an in-tribe reference, the first of his tribe but not the first of his kind."

What's the exegetical argument for that claim?

"There are references to agriculture in Genesis and all evidence puts towards agriculture being a much later

development than the biological evolution of our species."

To begin with, I believe that Lydia rejects "the biological evolution of our species." Therefore, your objection is predicated on an operating assumption that she doesn't grant.

You suffer from a persistent inability to engage people on their own grounds. You need to cultivate critical detachment and critical sympathy. That's an intellectual virtue.

"If you include the other activities Adam's descendants were described doing in the Bible only a few generations later such as building a city, raising livestock, making flutes and lyres, and forging bronze and iron, the picture is much clearer and harder to dismiss. Constructing simple musical instruments like flutes has some evidence at 42,000 years ago, building wooden settlements and raising livestock are unknown before 15,000 years ago and the oldest known copper mine only dates to 9000 years ago."

**i)** Know-how can be independently discovered. For instance, it's not as if learning how to make fire was a onetime event.

**ii)** Likewise, newfound knowledge can be lost. Know-how can be forgotten. War, famine, natural disaster, epidemics, &c., can not only wipe out settlements, but wipe out the knowledge required to pick up where things left off.

If you were to ask a 19C AD Egyptian how the pyramids were built, he wouldn't have a clue. Consider scholarly debates about the logistics of the Easter Island statues, or the construction and function of Stonehenge.

Step2 seems to be operating with a "stately progress of science" model, but technological innovation can be, and



often is (esp. in the past), sporadic, geographically isolated, and subject to interruption or reversal.

"Otherwise 'spiritual death' is a misnomer."

**i)** I'm curious as to where Step2 comes up with these very confident proclamations. What commentaries have you read? What exegetical monographs have you read? Or are you just winging it based on what seems obvious to you, from your own cultural standpoint—millennia later?

**ii)** In the Pentateuch, to be alienated from God is to be alienated from the source of life and wellbeing. Take how the Pentateuch characterizes the moral and spiritual degradation of pagan nations.

Posted by steve hays | March 23, 2015 1:04 PM

Step2:

"...all evidence puts towards agriculture being a much later development than the biological evolution of our species."

One of the problems with that claim is the way it posits the development of "agriculture" long after the emergence of the human species.

Aside from the ambiguity of what constitutes "agriculture," it also turns on what type of evidence would signal the moment when the human species came on the scene. What kind of evidence demarcates humans from nonhuman hominids? What kind of evidence early in the paleoarcheological record do you think uniquely identifies a human presence—in contrast to nonhuman hominids? Morphology? Artifacts? If the latter, what kind of artifacts?

Posted by steve hays | March 23, 2015 2:34 PM

Step2's archeological objections are confused at multiple levels:

**i)** He doesn't bother to cite the passages he alludes to. What does he mean by "agriculture"? Is he alluding to the "garden" of Eden? To [Gen 3:18-19](#)? To Noah's "vineyard"?

At the risk of stating the obvious, there's such a thing as wild wheat and wild grapevines. That doesn't require selective breeding. Sowing seed doesn't require artificial selection. You can get drunk on fermented grape juice.

**ii)** Suppose, for the sake of argument, that the descriptions in [Gen 4:17-22](#) are anachronistic. That doesn't ipso facto mean the account is unhistorical. For instance, take the historical plays of Shakespeare—like *Julius Caesar*. This is about people who really existed. About a real event (the plot to assassinate Julius Caesar). It is set in a real place (Rome).

However, the characters speak English rather than Latin. And in the original performance, the actors wore Elizabethan garb rather than period Roman attire.

So even if (ex hypothesi) [Gen 4:17-22](#) is phrased in anachronistic terms, that doesn't make it unhistorical. Rather, that would be a case of the narrator using imagery or terminology from his own time, familiar to his own audience, to describe the past. By comparison, Bible prophecy describes the future using imagery and terminology contemporaneous with the prophet and his immediate audience.

**i)** Step2 seems to be dependent on a particular English translation. However:

**ii)** The Hebrew text doesn't use the technical jargon of forging or smelting metal. Just consult standard commentaries (e.g. Hamilton, Matthews).

**iii)** Hebrew uses the same word for copper and bronze. Although bronze is an alloy, copper is a native metal.

In addition, there are surface copper deposits. It doesn't require copper "mines" to access. Depends on the quantity required.

Likewise, meteoric iron is a native metal. Ancient people used meteoric iron before they developed metallurgy.

**iv)** In addition, metal artifacts can be melted down to reuse the metal to make a newer artifact. So some earlier artifacts are destroyed in the process. There goes the "evidence."

**v)** To piggyback on Lydia's observation, Genesis situates Eden somewhere in Mesopotamia. Likewise, the ark bottoms out on the Armenian plateau. That's the setting for "early man" in Genesis.

Hence, even if the deluge was local, Noah's flood devastated the original human population centers (where Genesis places man). You can disagree, but my immediate point concerns the inner consistency of the narrative.

Keep in mind, too, that since this is both a flood plain and river basin, debris would wash downstream into the sea. It would literally wash the archeological evidence down the drain. That's what it is: a drainage basin.

**vi)** [Gen 4:17](#) doesn't specify what the structures were made of. Suppose they were wooden structures. Would that survive millennia of erosion (and periodic flooding)?

Suppose it was a tent city (cf. 4:20), like Plains Indian communities.

What if these were adobe buildings? Mud huts made of sun-dried mud-brick (with thatched roofs). Those are perishable

structures. Consider how little has survived in the Nile Delta from Pharaonic times.

**vii)** It's not uncommon for stone buildings to be dismantled to reuse the blocks to build something else.

**viii)** Having livestock (4:20) does not imply selective breeding. These can be tame wild animals.

**ix)** It isn't necessarily easy to distinguish wild animals from domesticated animals. Consider debates about whether Dingoes are wild canines or feral dogs.

**x)** In addition, feral livestock may interbreed with compatible wild species. They "revert." So that complicates the analysis. Consider feral pigs which interbreed with wild pigs. That produces hybrids.

**xi)** The text says nothing about pottery. And "pottery" is equivocal. Does that refer to earthenware that's fired in a kiln (e.g. ceramic, porcelain)? Or sun-dried clay pots (e.g. terracotta)? The latter are quite perishable.

Posted by steve hays | March 25, 2015 1:41 PM

In reply to Zachary:

**i)** "Incest" is a vague designator inasmuch as the term itself fails to distinguish between parental incest and sibling incest. Although parental incest is intrinsically evil, that doesn't mean sibling incest is intrinsically evil.

**ii)** In addition, the Levitical regulations combine purity codes with a penal code. That's because ancient Israel was a theocratic nation-state. Like any nation-state, it has a penal code. Many laws are moral laws.

But additionally there is a focus on ritual purity, due to Israel's cultic holiness. These don't concern intrinsic good and evil. Rather, their function is emblematic.

Some laws are tied to the unique redemptive-historical status of Israel, whereas other laws regulate or sanction the kinds of social behavior that any nation-state must legislate.

Posted by steve hays | March 25, 2015 12:38 PM

In fact it's said that there's a critical period after which children lose the ability to master a language—if they were deprived of linguistic exposure. Yet that wouldn't make feral children subhuman.

Posted by steve hays | March 23, 2015 4:17 PM

Luke Breuer:

"I question the truth of this. See my comment about autistic children."

Your comment on autistic children doesn't interest me. How's that even comparable?

On the one hand are children with normal brains, but no exposure to speakers during the critical period of language acquisition.

On the other hand are children with underdeveloped brains (in some respects) who are exposed to speakers during the critical period.

In addition, autistic kids range along a continuum. Some are savants.

You're somebody who disagrees for the sake of disagreement.

Posted by steve hays | March 23, 2015 5:30 PM

Tony:

"Steve, your last comment has a tinge of badgering and bullying."

Tony, constructive dialogue presumes an adequate degree of common ground. Unless one is using an interlocutor as a foil, it can be a monumental waste of time to debate someone whose plausibility structure is so different from yours that the two of you can't see eye-to-eye on anything concerning the issue at hand. You pour ever more arguments down a bottomless drain.

Every intellectual discussion must take certain things for granted. Absent sufficient common ground, the conversation quickly becomes sidetracked into endless preliminary issues.

There's nothing wrong with asking-or even demanding-that a critic tell us where he's coming from. If he is committed to an outlook that's antithetical to the outlook of the writer, then further discussion is typically futile-unless it's simply convenient to use him as a foil to rebut stereotypical objections.

Posted by steve hays | March 25, 2015 3:24 PM

## Consciousness and evolution

We live in a time when many "evangelical" Christians are desperate to harmonize evolution with as much traditional theology as they can salvage. Of course, this isn't a new development. It's been going on ever since Darwin published his landmark book. In addition, the popularity of the evolution in church circles tends to wax and wane. Some periods are more accepting while other periods are more resistant. But at the moment we're living in a time when the pace of acceptance is accelerating.

Although the theory of evolution raises many theologically significant questions about creation, providence, divine revelation, and Biblical hermeneutics, the flashpoint has always been human evolution.

According to evolutionary theory, human intelligence evolved because the brain evolved. Human intelligence tracks brain development. As the brain became bigger and more complex, hominids became smarter.

However, one of the most ironic and interesting developments in late 20C philosophy has been the "hard problem of consciousness." On that view, consciousness has properties that are not reducible to a physical state.

There are several different arguments feeding into this position. And it's been developed by secular philosophers. These are default physicalists. They dearly wish there was no hard problem of consciousness.

If one or more of the arguments for the hard problem of consciousness are sound, then advances in neuroscience are impotent to solve the problem.

Now, the hard problem of consciousness blows a huge hole right through the center of human evolution. For if the hard problem of consciousness is insoluble, then evolutionary psychology is false. But how can human evolution be true if evolutionary psychology is false? There's a clash of two essentially different paradigms.

In addition, the hard problem of consciousness dovetails seamlessly with traditional Christian dualism, where man is a composite of a physical body and an incorporeal soul. The soul is the source of consciousness (mind, personality).

Although many Christians feel harried by the "evidence" for evolution, there's a sense in which the hard problem of consciousness is a gift to beleaguered Christians. This is a bulwark against human evolution. An impregnable bulwark, if it's soundly argued.



## Craig on Adam and Eve

I'm going to comment on this podcast, which is a mixed bag:

<http://www.reasonablefaith.org/the-historical-adam-and-eve>

**Dr. Craig:** Before we conclude that the sky is falling, the sky is falling, it isn't true that the whole story of human sin and redemption falls to pieces if you deny the historical Adam and Eve. As I share in the Defenders class, the doctrine of original sin, though common to Catholicism and most Protestant denominations, is not characteristic of Eastern Orthodoxy. The Eastern churches – like Russian Orthodox and Greek Orthodox – do not hold that all of mankind falls in Adam's sin and inherit original sin from Adam. They do believe in a historical Adam. That is true. But it isn't the case that the whole story of sin and redemption falls apart without Adam and Eve. For the Orthodox Christian, Adam is simply the floodgate, so to speak, through which sin enters into the world and then spreads to the rest of humanity. But it could have entered at any point when you think about it. There was nothing particularly special about that point. So, as important as Adam and Eve are, we mustn't think that the doctrine of original sin is inherent to Christianity because it is just not. It is part of Catholicism and Protestantism for the most part, but it is not characteristic of Orthodoxy.

That certainly illustrates Craig's big tent philosophy. However, Christianity is a revealed religion. The criterion

isn't Eastern Orthodoxy but Biblical revelation.

**Dr. Craig:** What he is talking about there is the genetic diversity that is exhibited by the human population on Earth. The claim is that you can't get that kind of genetic diversity from a bottleneck of just two people. You need a few thousand. I've heard as low as 2,000 individuals as this bottleneck.

What we need to understand is that these are genetic estimates based upon mathematical modeling and projections into the past. We know that that kind of mathematical modeling is based upon certain assumptions that may or may not be true, and can sometimes be wildly incorrect in their projections. So, although Coyne has a great, great deal of confidence (I think he even speaks of scientific certainty), that, I think, is hyperbole.**[4]** It could well be the case that these mathematical models are simply incorrect. I don't want to minimize the challenge that is presented by the genetic data, but it is not as cut and dry as what Coyne presents it. I talk a little bit about this in the Defenders class in the section of Doctrine of Man where we look at the question of the origin of humanity.

This reminds me of global warming. Climatologists make predictions based on computer models. But, of course, their predictions have been wide of the mark.

**Dr. Craig:** No, the age isn't the problem. The problem is the population size. In order to get this amount of genetic diversity, the claim is you needed to have at least 2,000 people originally to result in this.

One of the assumptions that is based upon is that the rate of mutation doesn't change. But if the mutation

rates are changing then they could accelerate and that could produce greater diversity than one might expect. You might say that increasing diversity would have a selective advantage so this perhaps would be a kind of accelerating process. Again, we just don't know that these mutation rates have been constant over all of these thousands of years.

That raises two issues:

- i) Even on naturalistic grounds, science requires unprovable operating assumptions.
- ii) Moreover, the Biblical doctrine of human origins isn't naturalistic. So there's even less reason to presume mechanistic uniformity.

**Dr. Craig:** All right. He is talking here about the so-called "Mitochondrial Eve." That is to say, astonishingly, geneticists have established that all human beings on Earth are descended from this single woman who he claims lived about 140,000 years ago. Scientists have called her, in reflecting on the biblical Eve, the Mitochondrial Eve.

**Kevin Harris:**but that genes on the Y chromosome trace back to one male who lived about 60,000-90,000 years ago.

**Dr. Craig:** This is the so-called Chromosomal Adam, again playing on the biblical figures. So the claim is that the Chromosomal Adam – the Adam from whom all persons are descended today – lived around 60,000-90,000 years ago, but the woman lived around 140,000 years ago. That doesn't match up, right? Well, I am no geneticist, but recently Michael Murray, who is involved in the BioLogos movement and with the Templeton Foundation, sent me an email in which he

said some recent studies have just reestimated the dates of the Mitochondrial Eve and Chromosomal Adam and they've determined that they were roughly contemporaneous.

**Kevin Harris:** Really?

**Dr. Craig:** Yes! Which, if that is correct, that is just astonishing. This could be Adam and Eve. It could be the original human pair that we are talking about. So this evidence might come back to bite Coyne. Coyne knows more about this than I do, but I am simply reporting what I have been told that would make one really sit up and think about this.

At any rate, what it would show would be, again, the uncertainty of these dating approximations. They are based on mathematical models, and they are subject to radical revision.

That illustrates how tentative the science is.

**Dr. Craig:** I think the most plausible take for those who want to deny that Adam and Eve were literal persons would be to say that the literary genre of Genesis 1 and 2 and 3 is not meant to be historical; that this is something like myth or fable or something that teaches some deep truths in the way, say, that Aesop's fables teach deep truths. But it would be a mistake to take these as literal people. These are not meant to be taken in that way. That would be the most plausible spin, I think, for those who want to take the non-literal view. The really hard part for that, though, is that Jesus and Paul seemed to take it literally. They seem to think that there really was such a person as Adam in which case you'd have to either say that they were wrong (which raises all kinds of problems) or you could say that this was just a part of their incidental

beliefs but not part of what they actually taught. For example, Paul may well have believed that the Earth was flat for all we know. He probably believed that the sun went around the Earth based on their perception. But they nowhere teach that. They don't teach this as Christian doctrine. Maybe you could say that about the historical Adam. It is a really difficult problem as to how you are going to sort this out. For that reason, I am inclined to stick with the literal Adam and Eve until absolutely forced by the evidence to abandon that view. I think we are far from that point. **[7]**

**i)** Although that's better than outright capitulation, it's weak and unstable. One issue is what science can prove. Ironically, proponents of methodological atheism shoot themselves in the foot. They rightly perceive that if an omnipotent, interventionist God exists, then you can't stipulate the uniformity of nature. In principle, God can do anything anytime or anywhere.

Moreover, God's involvement in human affairs is often direct.

**ii)** The narrator of Genesis was not a modern theistic evolutionist. That's not his frame of reference. That can't be driving his outlook.

## Going ape over Adam

**i)** Dennis Venema seems to be the big gun at BioLogos these days. This year he's done a running series attacking Vern Poythress, before he turned his guns on W. L. Craig.

I don't know where Venema gets the theistic component of theistic evolution. Perhaps that's from the fine-tuning argument. However, Venema is a biologist by training, whereas the fine-tuning argument would seem to be the provenance of an astronomer. If so, then for the branch of science he's least qualified to assess, he thinks the evidence points to supernatural origins, and in the branch of science he's best qualified to assess, he thinks the evidence is indistinguishable from naturalistic origins. That doesn't inspire confidence in his synthesis.

**ii)** I think creationists are sometimes guilty of special pleading. That's hardly a fatal admission, for from my reading, Darwinians are often guilty of special pleading. From the standpoint of somebody like William Provine, Venema's theistic evolution is a makeshift position.

To be on the defensive posture tends to be a position of weakness. Instead of giving positive reasons for his position, or reasons for why he thinks the alternative is wrong, someone on the defensive is simply attempting to deflect criticism. That puts him at a disadvantage. May look like special pleading. Because creationism is under constant attack, it can foster that impression, but that's because the critics, the person on the offensive, enjoys a tactical advantage.

Yet every side in this debate (young-earth creationist, old-earth creationist, Intelligent design theorist, theistic evolutionist, deistic evolutionist, naturalistic evolutionist) plays offense and defense at one time or another.

Every side begins with set of facts. What they take to be a core of well-established facts. And that functions as their standard of comparison when they evaluate the evidence or prima facie counterevidence.

Every position must contend with obstreperous data that don't easily assimilate into their paradigm. Yet, in principle, you could flip that around. You could make the recalcitrant data your starting point, and use that as the standard of comparison. There's nothing that automatically selects for or privileges what subset of evidence will constitute the benchmark in relation to which "anomalous" data must be reinterpreted and harmonized.

I'm not saying the choice is purely arbitrary. But everyone is in the same boat in that regard, even if they occupy different decks.

**iii)** Venema strikes me as a good student. Someone who believes what he's taught, learns the rules, and follows the rules. Unquestioning. Submissive. Dutiful.

Following the rules can produce good science. Following the rules can make small, incremental contributions to scientific knowledge.

But that can also inhibit scientific progress. Venema doesn't seem to have the kind of mind that moves science forward in dramatic new directions. That opens new vistas in the frontiers of science. That requires a more creative and iconoclastic turn of mind.

**iv)** With those preliminaries out of the way, I will venture a few comments on this post:

<https://biologos.org/blogs/dennis-venema-letters-to-the-duchess/adam-eve-and-human-population-genetics-part-6-common-ancestry-nested-hierarchies-and-parsimony>

On the face of it, this is one of the more impressive arguments for common descent. I'll just mention some of the questions and considerations that come to mind when I read something like this:

**v)** One point of contention is how much DNA humans generally share with the great apes, or chimps in particular. 98% is a popular figure. but that doesn't strike me as very significant one way or the other.

**a)** To begin with, the higher the figure, the harder it is to account for drastic differences between humans and great apes. It threatens a paradox.

**b)** More to the point, I doubt this is relevant to the creation/evolution debate. Even before the advent of comparative genomics, it was obvious that humans have more in common with some animals than others. We have more in common with mammals than reptiles. We have more in common with some mammals than other mammals. By process of elimination, we will have more in common with one particular species than other species.

That's inevitable given biological diversity, which can be arranged along a spectrum of similarity and dissimilarity. Given that continuum, there's bound to be degrees of increasing similarity and dissimilarity. Bound to be species that range along our section of the continuum. Bound to be



a species most like us. You can arrange them in ascending or descending orders of similarity, with many borderline cases.

**c)** Apropos (b), suppose we view DNA as a blueprint. That's a popular, if simplistic, metaphor. Why would two species have similar blueprints? From a theological standpoint, the answer is that if God wants to make two similar species, he will give them similar blueprints.

So in that respect, genetics doesn't furnish independent evidence for common descent. That's a circular appeal.

The deeper question is why God would want to create two kinds of animals that are alike. And the answer, or at least one answer, is that God wanted to create a world full of variety. Variations illustrate divine ingenuity. In that event, some animals will be more alike while other animals will be more unlike.

So I don't think that provides even prima facie evidence for common descent. It's entirely consistent with creationism.

**vi)** However, Venema is appealing to a more specific kind of evidence for common descent. Not designed commonalities, but acquired characteristics. Historical accidents (e.g. deletion of the same DNA letter in three primate species).

For humans and great apes to share that in common implies common derivation. Can't be coincidental.

Well, what about that inference?

**a)** Let's take a comparison: how did lactase persistence develop? Would it be possible for humans to adapt to adult milk consumption if enough adult humans sampled milk or

dairy products on a regular basis? Even if that was initially nauseating, when food is scarce, humans will eat anything.

**b)** Assuming that adaptive mutation is possible, then lactase persistence could develop repeatedly and independently in isolated populations by the same process of adaptation.

**c)** Finally, in terms of DNA sequences, is it just happenstance where these "letters" occur, or *must* their placement be in a certain order for the code to be functional?

If so, then even if you had independent genetic developments, you'd *expect* the pattern to be the same in case the pattern must be the same. If certain "letters" are out of place, then it's selected out. The code won't work. The organism won't be viable.

Mind you, I believe the code has enough redundancy that it can survive some errors.

So those are some doubts I have about the validity of his inference.

## Going ape over Adam

Doug Wilson recently quoted N. T. Wright saying:

And it leads me to my proposal: that just as God chose Israel from the rest of humankind for a special, strange, demanding vocation, so perhaps what Genesis is telling us is that *God chose one pair from the rest of early hominids for a special, strange, demanding vocation*. This pair (call them Adam and Eve if you like) were to be the representatives of the whole human race . . .

That gave rise to the following exchange:

### **Tim Enloe**

From what little you cited, it looks like Wright affirms a literal, historical Adam and Eve, but you interpret his denial of young earth and affirmation of evolution as denial of the literal, historical Adam and Eve. That sort of thing is what bugs me about the reactionary style of young earth rhetoric: it's just as sloppy as much of what comes from the other side.

### **steve**

Because, Tim, he doesn't affirm the "literal, historical Adam and Eve" of Scripture, but a substitute that would be unrecognizable to the narrator and the original audience.

He's reassigned the historical referents to something utterly extraneous to the text. His interpretation has no more basis in the text than saying Adam and Eve were really extraterrestrials, or androids created by alien

cyberneticists.

You can't just edit out the Adam and Eve of the narrative, splice in a pair of hominids, and keep everything else intact. That's cutting something out of the Genesis account, cutting something out of the evolutionary narrative, then selectively combining two different stories by adding a new set of characters to replace the original.

## Genesis, monogenesis, and polygenesis

While some postevangelicals run screaming from what Gen 1-2 says about the creation of man, the account is rather remarkable, if you think it about. It may be so familiar to us that we miss it.

The account teaches monogenesis: all humans descend from a single pair of ancestors. If, however, you think Genesis is just pious fiction, and the narrator was guessing at the origin of man, why would he posit monogenesis rather than polygenesis?

After all, in the view of postevangelical scholars, the narrator had no idea how man actually originated. Indeed, he couldn't—given his lack of scientific knowledge.

But if we grant their assumption for the sake of argument, then wouldn't be at least as likely if not more so that the narrator would posit polygenesis? To my knowledge, it's not uncommon for some people-groups to view themselves as intrinsically superior to other people-groups. And they use a theory of racial superiority to justify the conquest and subjugation of other people-groups. It would be very convenient to ground that pretension in a theory of separate origins. Different people-groups originated independently of each other, which accounts for the (alleged) superiority of one in relation to the other.

Although this may be more commonly associated with European imperialism and American slavery, the general attitude is hardly confined to that. To my knowledge, the Japanese traditionally view themselves as superior to other people-groups, and that justified their wars of conquest. Likewise, consider Aristotle's theory of natural slavery. I've

also read that some African and South American tribes teach polygenesis.

Take another comparison: in Greek mythology, some men are fathered by gods. Yet there's a pecking order in the pantheon. If Zeus is your father, I assume that might put you a few notches above somebody who was fathered by Hermes, or somebody who had merely human parents. You have a superior or inferior pedigree.

If the Pentateuch is pious fiction, surely it would be very logical for the narrator to make the Israelites a separate and superior race. To say the Israelites and Canaanites were created independently of each other, which is why God treats both groups differently.

But, of course, that's not the actual story. Rather, all people-groups share a common origin in Adam. That threads its way through the creation of Adam and Eve, the survivors of the flood, the Table of Nations, and so forth.

I don't think it's coincidental that the Pentateuch teaches monotheism as well as monogenesis. Polytheism and polygenesis naturally go together inasmuch as each god or goddess of sufficient power could create a human or humanoid breeding pair or population. In Genesis, by contrast, there's only one Creator.

Evolution teaches polygenesis. On that theory, although humans have a common ancestor, they don't have an absolute point of common origin. Rather, they're an offshoot of the evolutionary tree of life. They have animal ancestors. In addition, there's interbreeding between different hominids.

## Adam and I, Robot

There's a paradoxical relationship between Adam and modern science. On the one hand there's the evolutionary challenge to the historicity of Adam and Eve. Of course, evolution has, itself, been challenged—but I'd like to make a different point.

Ironically, hard science fiction and AI research present scenarios that parallel Adam and Eve. Let's grant, for discussion purposes, that AI is feasible. Suppose you're a cyberneticist. You have a number of judgment calls to make.

The only kind of intelligence you can give a robot or computer is humanoid intelligence. That's because humans are the most intelligent species on earth. So that's the template. Moreover, the cyberneticist is human. In programming a computer or robot to think, how humans think is his only frame of reference.

Like Adam, the robot will have instant adult intelligence and innate knowledge.

Since the computer or robot has humanoid intelligence, that raises the question of whether to go all the way by making an android.

Now, because the android had no childhood, it will have no memories of a time before it came online. Its first memoir will be the moment it was switched on. That's like Adam's first moment of consciousness. He suddenly comes alive, as a self-aware adult.

An alternative is to make the android think it's human. After all, the android already thinks like a human. Has human reason and emotions. If you were to tell the android that it wasn't human, that might create cognitive dissonance or mental instability.

So you might program the android with false memories of a happy nonexistent childhood. It would be the cybernetic equivalent of Last Thursdayism: "There is no logical impossibility in the hypothesis that the world sprang into being five minutes ago, exactly as it then was, with a population that "remembered" a wholly unreal past. There is no logically necessary connection between events at different times; therefore nothing that is happening now or will happen in the future can disprove the hypothesis that the world began five minutes ago."

That's a psychological version of mature creation or even Omphalism.

Or you might tell the android that due to illness or accident, it suffers from retrograde amnesia. That's why it can't remember its childhood.

To be sure, that's deceptive, but it's deceptive in the sense that if a senile person thinks her husband or parents are still alive, we will play along with her anteograde amnesia since it would be heartless to tell her that they are dead. It comforts her to believe they are still alive. Not only would it serve no good purpose to traumatize her, but since she's so forgetful, you'd have to constantly remind her that they are dead, so that she'd periodically experience the grief afresh as if it was the first time. That would be wantonly cruel.

By the same token, you might spare the feelings of the android by making it think it was human, that it had a



normal childhood.

Obviously, there are ways in which an android might discover that it's an artificial lifeform. In that event, you might simply erase the traumatic memory.

There are lots of different ways a science fiction writer can develop an android character—ways that parallel mature creation and the special creation of Adam. In addition, for people who take AI research seriously, this isn't just hypothetical. Rather, these are issues which a successful cyberneticist would have to confront. In that respect, the role of the cyberneticist is rather like the Creator in Genesis.

## Life from life

An interesting principle in Gen 1 is that it takes life to make life. Unlike dead, impotent idols, the "living God" creates the world. And he makes living creatures who reproduce. So it takes one living thing to make another living thing. Life is *transmitted* from one living thing to another. Procreation is an act of *sharing* and *transferring* life from a being that's already alive. Regeneration involves the same principle on a spiritual plane.

This principle is illustrated in the creation of Adam ([Gen 2:7](#)), where the Angel of the Lord breathes into the inanimate body of Adam, thereby making it alive.

Procreation is like a candlelight service, where one burning candle lights another candle until the sanctuary is flooded with candlelight. That's how the human race spread from a single breeding pair.

## Genesis and polygenesis

I'm going to comment on this post:

<http://michaelsheiser.com/TheNakedBible/2012/07/genesis-13-face-compatible-genome-research/>

Genesis 1 describes the creation of human beings. (The process is put in pre-scientific or supernatural terms, and so doesn't give us a scientific perspective on how this happened).

The human beings of Genesis 1 are not in a garden in Eden (there is no garden of Eden in Genesis 1; the command to "subdue the earth" would speak of the whole earth, wherever humans are, not Eden, which is nowhere in view).

Genesis 2 describes a distinct and separate creation of two humans. (Again, the process is put in pre-scientific or supernatural terms, and so doesn't give us a scientific perspective on how this happened).

The two humans of Genesis 2 are in a garden in a place called Eden (which is clearly not synonymous with the earth since it has specific geography on the earth).

Since the two humans created in Genesis 2 are not the humans created in Genesis 1, the two humans in Genesis 2 cannot be seen as the progenitors of the humans of Genesis 1. The humanity of Genesis 1 was to image God in all the earth, not Eden, and so the Genesis 1 creation speaks of a divine origin (by whatever means) of human life on the planet. The humans of Genesis 2 are parallel to and consistent with

those goals, but their story is more specific. They have a more particular purpose, which is revealed in Genesis 3.

This view does not require that all human beings come from a single pair of humans. Rather, there were humans on the earth along with the pair known as Adam and Eve. It therefore matters not if the human genome data requires more than a single pair of humans. This view also doesn't require one specific view of how humans wound up here, so long as God is in the process.

ESV and other translations cheat here, translating 'erets as "land" to avoid tension with **Gen 1:11-12**, where the same word is used when God did indeed have the earth bring forth the plants prior to the creation of humans.

The whole point is that someone COULD begin with entirely new presuppositions about Gen 1-2 and read the text in a different way. So, when I get questions in the comments, I'm answering like a person with those "other" presuppositions. And I've said that many times. What you really need to do is start thinking about what if the genetics material is correct. That's far more useful. I don't think the science is settled, but in another 5-10 years, as genetics keeps advancing, this may be at the level of something unassailable. At that point, as has been done for centuries, biblical scholars and theologians will need to re-assess the meaning of Scripture. That process isn't at all new (a heliocentric solar system used to be thought heretical). This enterprise will either be done well, or not. It's best to start thinking about it now.

The post was intended (as I keep saying) as an exercise in reading the text at face value in the event

the statistical genetics argument put forth by Venema (and embraced by others).

**i)** I view the relationship between Gen 1-2 quite differently than Heiser. I think these are two distinct, but overlapping creation accounts. Gen 1 is a general creation account whereas Gen 2 is more specific. Gen 1 is cosmic or global whereas Gen 2 is local.

Gen 1 sets the stage for Gen 2. We'd expect the Bible to contain a creation account that describes how the one true God is the Creator of all contingent beings.

But Scripture takes a special interest in the origin and history of mankind. After sketching the creation of man in Gen 1, Gen 2 goes into more detail regarding the origin of man and his immediate environment. Humans didn't live everywhere. Since the human race began with a single breeding pair, their ancestral homeland is naturally quite localized.

Gen 2 isn't about the origin of fauna and flora in general, but about the first humans and their aboriginal habitat in particular. "Subduing" the earth is a long-range task.

**ii)** It isn't "cheating" to translate the same word differently if the context is different.

**iii)** The relationship between Gen 1-2 is like the relationship between Gen 6-7, where Gen 7 circles back around and fills in more details.

**iv)** To say "The human beings of Genesis 1 are not in a garden in Eden (there is no garden of Eden in Genesis 1)" is a deceptive argument from silence. Gen 1 isn't meant to tell the whole story. Taken by itself, Gen 1 is intentionally

incomplete. By design, it was meant to be supplemented by Gen 2, especially in reference to Day 6 (the creation of man).

There's a difference between "Gen 1 does not say if humans were in the Garden" and "Gen 1 says humans were not in the Garden." Heiser is inferring a negation from silence. But that's fallacious. Gen 1 leaves it open.

**v)** We can't directly compare the sequence of events in Gen 1 with Gen 2 because Gen 2 lacks the seven-day frame of reference. Likewise, Heiser fails to distinguish a sequence *between* different "days" (Gen 1) and a sequence *within* the (unspecified) timeframe of Gen 2.

We wouldn't expect Gen 2 to be systematically synchronous with Gen 1, for Gen 2 doesn't cover all the same ground. Rather, it takes many of the prior stages in Gen 1 for granted.

This view makes other passages in the early chapters of Genesis more comprehensible. For example, the classic "conundra" created by Gen 4:8-17 are now easily answered. The question of where Cain's wife came from is not difficult — she came from the other humans out there in the world into which Adam and Eve were expelled. Other people were already there. When Cain worries (Gen 4:13-14) that someone will find him and kill him after he murdered his brother and is exiled, his worry becomes legitimate — there are lots of people out there in the cold, cruel world, and he has no family now for protection. When Gen 4:17 has Cain building a city (did his wife help?) this view handles that with aplomb — there were lots of other people already living to help him construct his city.

The traditional view has great difficulties in Genesis 4. It must either affirm that only Adam, Eve, and Cain are living after Abel is murdered (and that is the plain implication of Genesis 4) or posit (i.e., invent) long stretches of time for Cain to find a wife also born from Adam and Eve later on, and then more stretches of time to have enough people born and grown so Cain can build a city — something he obviously couldn't do by himself. These have been classic dilemmas given a traditional approach to Genesis.

The traditional view DOES need to invent long stretches of time to avoid Cain building a city by himself. And is the text really saying that Cain feared people yet unborn would kill him in 20 years or so?! That's special pleading if there ever was any. It's a real problem, not an imagined one. In other words, regardless of the Adam issue, these are problems for a traditional view of Adamic humanity, and have been well traveled for centuries

You'd need a workforce of hundreds or thousands to build a city — and that doesn't count all the mothers staying at home with kids. You are simply dramatically under-estimating.

**i)** We need to distinguish between what the narrator says and what a character within the narrative (e.g. Cain) says. The narrator's viewpoint is normative. What Cain says is not. Cain may just be imagining things.

**ii)** Cain's statement is proleptic. Adam and Eve had other kids (Gen 5:4). The prediluvians lived for hundreds of years. The population would expand exponentially. Likewise, Cain's own offspring could help him build the "city."

**iii)** Why would humans who are unrelated to Adam's family avenge Abel's death? Cain envisions a blood feud, where murder dishonors the victim's kinfolk. But if the humans

whom Cain alludes to aren't relatives of Abel, they wouldn't even know who Cain is, much less would they be motivated to execute him. A revenge killing only makes sense if the avengers are relatives of Abel.

**iv)** Heiser exaggerates what is meant by a "city." As one commentator notes:

The city refers to some form of fortification. Hulst explains, "Any settlement, more-or-less permanently inhabited, protected by the erection of a 'fortress' or simple wall, can be called 'ir,'" B. Waltke, *Genesis: A Commentary* (Zondervan 2001), 99.



## Adam and Israel

There are two ways of looking at this parallel. You could say that the Adam story came first and then the Israelites just followed that pattern. But there is another way. Maybe Israel's history happened first, and the Adam story was written to reflect that history. In other words, the Adam story is really an Israel story placed in primeval time. *It is not a story of human origins but of Israel's origins.*

The parallels between Israel and Adam that we see above tell us that the particular people in mind are Israel. Adam is "proto-Israel."

<http://biologos.org/blog/adam-is-israel>

Professing Christians who are desperate to reconcile Gen 1-3 with evolutionary theory might find this reinterpretation appealing. However, I'd like to draw attention to one of the many problems besetting this reinterpretation. The comparison between "the Adam story" and the Exodus is only as good as the historicity of the Exodus. Enns himself recognizes the issue:

Christianity is a historical faith, and so evangelicals have a vested interest in defending the fundamental historical character of the Bible...If the events surrounding Israel's entrance to and deliverance from Egypt— which includes the events at Sinai and the wilderness—can be shown to be fiction, the heart of the Old Testament's theological content is drained of its life force.

<http://peterennsonline.com/wordpress/wp-content/uploads/2007/12/exodus-and-the-problem-of->

[historiography-rr-new-version-final-dec-05.pdf](#)

I daresay scholars who doubt or deny the historicity of Gen 1-3 generally doubt or deny the historicity of the Exodus. They don't think the Biblical story of Israel's origins is more factual than the Biblical story of human origins. They don't believe in the burning bush, rods turning into snakes, the Ten Plagues, the parting of the Red Sea, the Angel of the Lord, the pillar of fire, the Shekinah, the miraculous provision for Israel in the wilderness.

So even if, for the sake of argument, we grant the parallel between Adam and Israel, that's comparing one fictional story with another fictional story. This wouldn't be a case of Israel's history happening first, then "the Adam story" written afterwards to reflect that history. Rather, this would be a case of both written together with a view to each other, where the Exodus is the imaginary counterpart to "the Adam story," and vice versa.

## Pet cemetery

Here, two noted creationists argue that the naledi fossils are human:

<http://www.coesci.org/jcts/index.php/jctsb/article/view/44/61>

<http://www.coesci.org/jcts/index.php/jctsb/article/view/51/68>

I don't have an a priori objection to that identification. I do, though, have two reservations:

**i)** One argument for the human identification is that the remains are situated in a very cramped location. You have to crawl there.

However, is it possible that the floor of the cave is higher than it used to be, due to cumulative debris building up over the intervening time? In other words, was there originally more space between the ceiling and the floor?

From what I've read, the cave is located in a river valley. What about the possibility of flooding? Would that deposit debris in the back of the cave?

I don't know the elevation of the cave. And, of course, the topography may have changed over time.

**ii)** The tacit assumption is that the agents who buried the remains were the same kind of creature as what was buried. However, humans sometimes bury animals. Not only

do you have modern pet cemeteries, but there was the ancient Near Eastern custom of equid burial. Cf. K. Way, **DONKEYS IN THE BIBLICAL WORLD: CEREMONY AND SYMBOL** (Eisenbraus, 2011), chap. 3. Likewise, you have Egyptian animal mummies, viz. cats, jackals, crocodiles, bulls. baboons.

What if naledi was an ape that held special associations for humans? They buried it for the same reasons that some people bury pets or some ancient people buried or mummified animals?

Point is: you can't just assume that naledis were buried by naledis.

## Theriolatry

Todd Wood responded to some feedback regarding his recent naledi posts:

<http://toddcwood.blogspot.com/2016/05/homo-naledi-feedback.html>

That included a response to my post:

<http://triablogue.blogspot.com/2016/05/pet-cemetery.html>

**i)** I'll comment on his response to me, but before I get to that I'd like to back up a bit. I don't object in principle to the human identification of naledi. For instance, given the vast variety of dog breeds, some of which are scarcely recognizable in relation to each other or the wild canines from which they derive, by the same token you could have considerable variation in humans.

**ii)** In addition, I'm not challenging a burial hypothesis.

**iii)** That said, Todd himself says naledi had a brain the size of an orange. That, of course, raises the question of whether a creature with a brain that size could have human intelligence. Admittedly, the correlation between mind and brain is complex. I'm a substance dualist. Young children have simpler, smaller brains than adults, yet they have cognitive abilities that adults typically lose. Young kids can sponge up languages. They have retentive rote memory. So perhaps a creature with a brain the size of an orange could

have human intelligence. But that demands more discussion.

Over on Triablogue, we find these questions:

is it possible that the floor of the cave is higher than it used to be, due to cumulative debris building up over the intervening time? In other words, was there originally more space between the ceiling and the floor?

Yes, definitely.

What about the possibility of flooding? Would that deposit debris in the back of the cave?

No, there is no evidence of any of that in the Dinaledi chamber. That point has been emphasized more than once. These bones did not wash into the back of the cave.

I'm afraid Todd misunderstood the thrust of my question. I wasn't suggesting the fossils were deposited in the cave by flooding. Rather, my second question was piggybacking on my first question. Would repeated flooding be a possible source of debris which, over time, effectively lowered the ceiling of the cave—by raising the floor, through cumulative layers of debris?

The tacit assumption is that the agents who buried the remains were the same kind of creature as what was buried. However, humans sometimes bury animals.

That's true. I thought of that myself, but I'm not sure it gets us anything. As hard as it is to believe someone

would crawl that far underground to bury their own child, I'm not sure it's any easier to believe they would do that for a beloved pet. The only thing it would get you is the ability to affirm the burial hypothesis while saying that Homo naledi isn't human.

I find that response unsatisfactory in several respects:

**i)** Todd's objection is predicated in part on the inaccessibility of the location. Yet he conceded that originally, the site might have been more accessible. There may have been more space between the floor and the ceiling at the time of burial. But that concession weakens the premise of his objection, does it not?

**ii)** I'm puzzled by his saying "I'm not sure it gets us anything...The only thing it would get you is the ability to affirm the burial hypothesis while saying that Homo naledi isn't human."

But surely that's a consequential alternative explanation. There's the hypothesis that it wasn't human and wasn't buried. There's the hypothesis that it was human and was buried. Then there's a third hypothesis that I proposed, which splits the difference.

**iii)** Moreover, he doesn't seriously engage my argument. My counterexamples weren't confined to pet animals. I gave two examples of ancient burial customs involving animals. The first involves donkeys. As Kenneth Way documents, in the monograph I cited, donkeys had symbolic/ceremonial significance in the ancient Near East, which is why they were sometimes buried. Among other things, Way mentions ancient cultural associations between donkeys and socioeconomic status, scapegoat rituals, sacrificial rites, death, divination, and donkey deities. These associations

wouldn't even occur to a modern reader. It's so far removed from our worldview.

Likewise, I mentioned the ancient Egyptian practice of mummifying animals. That's in part because Egyptian mythology has theriomorphic deities. (Hinduism is another example in kind.) Surely it takes as much effort to mummify animals as it did to bury naledi.

In certain pagan cultures, animals aren't merely animals. Animals were vested with religious, numinous, or preternatural significance. They could represent deities. You have this in various American Indian cultures as well as indigenous African religions, in addition to Hindu and Egyptian mythology. From what I've read, theriolatry, theriomancy, and theriomorphism were widespread in paganism.

We need to make allowance for the mindset of ancient humans when we interpret burial rituals. It may take a special effort for modern people, even Christians, to assume that viewpoint, because it's often so alien to our own view of animals. The heathen outlook differs both from Christianity and secularism with respect to the animal world.

As I understand it, Todd thinks a local naledi community used the cave as a family crypt or cemetery for its own dead. That's possible.

But I'm questioning a non sequitur in the argument. The inference that if burial presumes human intelligence, and the remains are naledi, then they were buried by naledi—in which case naledi were human. Naledi buried their own kind.



I'm documenting the fact that ancient humans sometimes bury animals. Some ancient humans have a cult of animals. Theriolatry. They attach sacral significance to some animals. As a result, they go to some trouble in disposing of the remains (e.g. burial, mummification). So it's possible that the naledi remains are extinct apes.

And that might be more consistent with the subhuman brain size. That's not what we normally associate with an adult human brain.

## Modularity

One of the challenges to creationism is explaining similarity between different species.

The evolutionary explanation is generally that they are similar because they share a common ancestor. Mind you, the evolutionary inference is not that straightforward since evolutionists also believe that some similarities developed independently.

Alternative creationist explanations include common design and common function. Both have some explanatory value, but they are too generic to account for certain kinds of similarities.

Between about 20-33 min. in this presentation:

<http://toddcwood.blogspot.com/2017/06/igh-conference-monday.html>

Todd Wood reviews the stock explanations, then offers a different proposal. He draws an analogy between genomic modularity and language.

If you compare two texts in same language, they will share many similarities. Is that because they have a common ancestor? Generally, that's not the explanation.

The reason, rather, is that a language has limited characters (alphabet) and limited vocabulary. Likewise, it has a standard syntax. As a result, two texts have many repeated words and grammatical forms.

By analogy, genomic modularities are not homologies. Not intermediates but mosaics.

Wood uses a linguistic analogy, but we could also use a musical analogy. Two compositions by different Baroque composers will have many similarities because they employ the same rules of musical composition. A common scale, notation, instruments, musical forms, &c.

## Bipedal apes

The cranium, known as MRD, is noticeably different from known *A. afarensis* skulls. MRD is smaller with a much more projecting face. Down the center of the skull runs a sagittal crest for attachment of jaw muscles. The skull is longer and narrower than *A. afarensis* skulls. To my eye, MRD looks more like a living ape like a gorilla than *A. afarensis* does.

The existence of bipedal animals that look so similar to us raises many questions about God's design and their relationships to each other. How many created kinds of upright apes are there? In past analyses, *Paranthropus* seems well-separated from other australopiths, and *A. afarensis* and *A. africanus* are also very distinct. Are these patterns merely the result of a sparse sample of species? Will we eventually find that all bipedal apes belong to one created kind, distinct from humans? What can this new skull tell us about even less well-known fossils like *Ardipithecus* or *Sahelanthropus*?

<https://humangenesis.org/2019/08/28/a-face-for-australopithecus-anamensis/>

**i)** I'm not quite sure what Todd means by bipedal animals that look so similar to us given what he says about MRD. However, that may be tangential to his main point.

**ii)** To consider the question in general, Darwinians and atheists will take this to be yet another example of how science continues to put the squeeze on Christianity. There's increasingly less that makes human beings unique. Science keeps chipping away at human exceptionalism. One

theological outpost after another falls to the invincible march of evolutionary biology. Christians are constantly in retreat. Constantly ceding ground to evolution. At least that's how it looks to Darwinians and atheists.

**iii)** But is that the case? Even in Gen 1-2, it's clear that humans share much in common with the animal world. That's because we're embodied agents and earthlings. Ancient Jews and Christians could see that humans have animals bodies. Physically, our bodies function like other animals. It's not as if modern science provides a revolutionary perspective in that regard. Prescientific observers could see that just fine.

**iv)** I don't see that bipedal apes pose any greater threat to human exceptionalism than animals with forward-facing eyes. It's my impression that different body designs maximize an organism's ability to exploit a particular niche. Obviously we've never seen bipedal apes in action, but that presumably enables them to take advantage of certain opportunities their environment presents that quadrupedal apes cannot exploit.

But there are tradeoffs in any body design. Gains in one respect are offset by losses in other respects. Leopards lack the power of lions, but that's offset by their superior tree-climbing ability. Cheetahs can outrun prey that's too fast for leopards and lions, but that's offset by weaker jaws and lack of razor-sharp claws.

**v)** There's the question of what makes something unique. It is a single unique feature or a unique combination of ordinary features?

**vi)** What makes humans unique isn't primarily our bodies but our minds. Suppose a wolf had a human body. That

wouldn't make it human. A lupine mind in a human body would be a disastrous mismatch. It wouldn't survive. It has the wrong kind of intelligence to operate with a human body.

**vii)** This doesn't mean human bodies are unimportant to human identity. But they are secondary in the sense that human bodies are instruments of human minds. A human mind requires a body that enables it to do human things. A human mind in the body of a dolphin would be stultifying and maddening.

If you hand a mediocre tennis player the racket of a world-class tennis player, that doesn't make him a world-class tennis player. Conversely, a world-class tennis player can beat a mediocre player with an off-the-shelf racket—no matter how good the racket the mediocre player has. Same thing with pool. It isn't the cue or the balls that make the difference. Although Heifetz plays better with a Guarneri or Stradivarius, handing that violin to a mediocre violinist doesn't transform him into Heifetz. Imagine what Newton could do with a computer.

A body is just a medium. It's generally a necessary medium for humans to develop their potential and exercise their humanity, but it's what the operator does with it that's special, and not the medium in itself.

Like animals, we produce offspring and raise offspring, but human parents and their offspring both get far more out of the experience than animals because we have more complex minds. Lower animals may not even have minds. If they do have minds, they have very simple minds. Like animals, humans engage in sex, but we get far more out of the experience because we have more complex minds. There's so much more we can take in.

**viii)** It's like science fiction stories about extraterrestrials. What kind of bodies does the writer give them? If they rely on advanced technology, they need body parts that enable them to build and operate fancy gadgets. They require bodies suitable to their alien intelligence and alien proclivities.

## Kabwe

Worth watching the whole video (all 7 minutes):

<http://toddcwood.blogspot.com/2019/09/fossil-focus-kabwe.html>

Among other things:

If it's human, what's it doing way down in Africa at such an early radiometric date (around 300,000 years ago)? That's considerably before the earliest signs of civilization that we see in the Middle East...What does this mean for dispersal after the flood.

On a YEC or OEC paradigm, humans originate in the Middle East. Regarding how Kabwe-type humans migrated to African and how that antedates civilization in the Middle East by however long, perhaps there is no good YEC explanation.

However, depending on where we put the last ice age in relation to man, that would have a highly disruptive effect on civilization so that after the thaw, humans might have to start from scratch. Pre-ice age civilization would be largely lost and forgotten. That might fit into an OEC timetable, don't know about a YEC timetable.

There's a stone age, bronze age, iron age, age of writing timetable that's post-ice age. But humans are capable of independently developing the same technology. So Gen 4 doesn't have to be intercalated into that timetable.



## Table games

There are plenty of things that evolution explains quite well that creationism struggles with. For example, why are there australopiths? Why not make humans extremely distinct from the mammals? Why even make primates at all? Evolution explains primates as the distant relatives of modern humans, and australopiths fit in that model very well. Creationism (of any stripe) doesn't really explain that very well.

<http://toddcwood.blogspot.com/2017/02/is-genesis-history-q.html>

**i)** One problem is the question of coherence. If humans were extremely distinct from mammals, we wouldn't be human.

**ii)** Let's take a comparison. Humans like to play games. Some games are very different from each other, viz. chess, Go, Backgammon, roulette, Yahtzee, scrabble, Monopoly, Mahjong, pool.

You also have different games that use the same deck of cards, viz. Poker, blackjack, Bridge, Baccarat. Finally, you have variations on the same game, viz. seven card stud, five card draw, Texas Hold'em, Omaha High.

What accounts for the similarities and differences? On the one hand, humans like to play very different games. That accounts for dissimilarity.

On the other hand, humans like to explore the range of possible variations within tighter limitations. Consider how

many different card games we could devise if we restricted ourselves to the same deck of cards.

There are different ways to illustrate intellectual creativity. One way is through dissimilarity. Inventing things that are very different from each other. Another way is through similarity. In a way, it's a greater challenge to produce interesting variations with fewer options.

One creationist explanation for the spectrum of biological similarity and dissimilarity is a demonstration of God's creative ingenuity. And that's something which human creativity mimics.

## Adam, Eve, and chimpanzees

Recently, an increasing number of professing believers has decided to jettison the historical Adam. The clincher has been the degree of similarity between humans and chimpanzees.

Now, the specific comparisons have been challenged by Intelligent-design theorists. However, it's still the case that humans are more like chimps than salamanders.

According to evolution, we account for the similarity based on common ancestry. As a rule, similarity reflects affinity. Degrees of similarity mirror degrees of kinship. Organisms that are more alike are more closely related while organisms that are less alike are more distantly related. By "related," I mean in terms of common ancestry.

Is there an alternative explanation consistent with special creation? Take the principle of plenitude. According to Christian thinkers like Leibniz, Aquinas, and Augustine, God made a world with maximal diversity. God made a world which would combine as many variations as possible.

(In addition, Aquinas thinks organisms have a hierarchical arrangement—from highest to lowest.)

Although that's theological, there are secular versions of the principle, viz. the multiverse and the modal realism of David Lewis.

And on the face of it, the natural world does look like just about every conceivable strategy is represented. So this isn't just an abstract postulate.

Now, assuming that organisms range along a continuum (i.e. degrees of similarity or dissimilarity), it's inevitable that humans will be more like some animals, and less like others. And if that's the case, then there may well be one animal that humans are more like than other animals.

That isn't due to common ancestry, but graded diversity. If God made a full-spectrum world, then humans will resemble some creatures more than others—for the world was designed to exhibit a wide range of biological similarities and dissimilarities. Every feasible or compossible permutation will be represented.

Incidentally, when I speak of a scale (spectrum, continuum) of diversity, I don't mean that in strictly linear terms. That's an incidental connotation of the spatial metaphors. I don't think all organisms can be arranged according to a single principle of continuity and discontinuity. In comparing two organisms, they may be alike in one or more respects, but unlike in other respects. My argument doesn't require linearity.

To take a comparison, consider all the different styles of chess sets. Some chess sets are more alike, while others are less alike. That's because humans value artistic diversity. And the world we inhabit seems to reflect God's artistic diversity.

Another example is musical variation. Classical composers would demonstrate their ingenuity by ringing the changes on a particular theme. Notable examples include Pachelbel's Canon, Handel's The Harmonious Blacksmith, Bach's Goldberg Variations, Beethoven's Diabelli Variations, Brahms's Variations on a Theme by Haydn, and Vaughan Williams' Fantasia on a Theme by Thomas Tallis.

I'm reminded of Paul's statement about "the plan of the mystery hidden for ages in God who created all things, so that through the church the manifold wisdom of God might now be made known..." ([Eph 3:9-10](#)).

As Hoehner says, this carries the connotation of "most varied."

This is not an ad hoc alternative. It's a comprehensive explanation, based on one overarching principle. That's economical. It antedates the creation/evolution debate, so it's not a stopgap that was pressed into service to stave off the Darwinians. And there's no presumption that God wouldn't, shouldn't, or didn't design a world with maximal variation.

## Adam in Scripture

Currently, the historicity of Adam is a hot button topic in evangelicalism. In one sense, this is nothing new. Back in the 1970s, the inerrancy of Scripture was a hot button topic in evangelicalism. In addition, the historicity of Adam has been an issue ever since Darwin.

So these debates go through generational cycles. Nothing really changes. In every generation, you have conservative Christians and liberals. You also have some professing Christians who try to split the difference. The players change, but the play remains the same.

Every generation will have a remnant of Bible-believing Christians, along with however many nominal Christians. That will continue until Jesus returns.

The current controversy, represented by spokesmen like Peter Enns and Daniel Kirk. Kirk and Enns focus on Paul's view of Adam in Rom 5 and 1 Cor 15—although Enns has his own take on Gen 1-5.

Now, from a Christian standpoint, if all we had to go by was **Gen 1-5**, **Rom 5**, and **1 Cor 15**, that would be more than sufficient to establish the historicity of Adam.

However, I'd like to point out that this focus is misleading, for the Biblical witness to Adam is broader than Genesis, Romans, and 1 Corinthians. Here are five more passages that clearly bear witness to Adam:

*1 Adam, Seth, Enosh ([1 Chron 1:1](#)).*

*4 He answered, “Have you not read that he who created them from the beginning made them male and female, 5 and said, ‘Therefore a man shall leave his father and his mother and hold fast to his wife, and the two shall become one flesh’? 6 So they are no longer two but one flesh. What therefore God has joined together, let not man separate” ([Mt 19:4-6](#)).*

*38 the son of Enos, the son of Seth, the son of Adam, the son of God ([Lk 3:38](#)).*

*26 And he made from one man every nation of mankind to live on all the face of the earth, having determined allotted periods and the boundaries of their dwelling place ([Acts 17:26](#)).*

*13 For Adam was formed first, then Eve; 14 and Adam was not deceived, but the woman was deceived and became a transgressor ([1 Tim 2:13-14](#)).*

In addition, [2 Cor 11:3](#) refers to Eve—which presupposes Adam.

Over and above passages that clearly bear witness to Adam are some other passages that possibly or probably bear witness to Adam: [Job 31:33](#); [Ps 82:7](#); [Hos 6:7](#).

For instance, David Clines defends the Adamic referent in his commentary on Job, while Thomas McComiskey defends the Adamic referent in his commentary on Hosea.

Finally, there's a secondary reference to Adam in [Jude 14](#).

I'd point out that the references to Adam in Matthew, Luke, and 1 Chronicles aren't merely conventional, but theologically significant.



## Defining the "historical Adam"

With Peter Enns pushing the envelope, I assume it's only a matter of time before the PCA (as well as the OPC, URCNA, &c.) has to decide where to draw the line. Thus far discussion tends to coalesce around the "historical Adam." However, it's important to keep in mind that that phrase is quite ambiguous.

In principle, someone could affirm the historicity of Adam without affirming that Adam and Eve were the first humans, or the progenitors of the human race. One tactic is to claim that God singled out a couple of Neolithic farmers.

Likewise, someone could affirm that Adam and Eve were the first humans without affirming that Adam and Eve were the first hominids. In principle, someone could affirm that Adam and Eve were real people, consistent with an evolutionary history of early man. One tactic is to claim that God took two protohuman hominids and humanized them.

If, therefore, the PCA wishes to reaffirm the traditional understanding of Adam and Eve, it will need to use a narrower formulation than the "historical Adam." It will have to add further qualifications to eliminate theistic evolution—if that's its goal.

# Creationism

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## The flood and the flat-earth

One of the glaring incongruities in reading standard attacks on Noah's flood is the total disconnect between the view of the world which critics ascribe to the narrator, and the view of the world which critics use as their frame of reference in attacking the flood account.

On the one hand, critics tell us that the narrator subscribed to a triple-decker cosmography. On this model, the earth was flat. The "earth" comprised a single landmass or supercontinent, with mountains at the "corners" or "ends" of the "earth" to support the sky. The sky was a solid dome with sluice gates allowing the cosmic sea to precipitate rain and snow. Under and around the supercontinent was the primeval sea.

When, however, critics attack the coherence of the flood account, they pose objections like this: How did all the animals cross natural barriers to reach the ark? And how did they disperse? How could the ark accommodate so many species? How could animals adapted to very different climates and diets survive on the ark? How much water would it take to submerge Mount Everest? What would be the rate of precipitation to generate so much water? What would be the rate of runoff for the floodwaters to subside?

But an obvious problem with this whole line of attack is the way in which these critics using the wrong model of the world to attack the flood account. Notice the systemic failure to use a triple-decker cosmography as the point of reference when disputing the logistics of the flood. Yet the same critic assures us that the prescientific narrator was operating with a triple-decker cosmography.

Well, assuming for the sake of argument that this is the case, then the stock objections miss the mark. Indeed, we end up with two mutually exclusive arguments.

The critic needs to ask what natural barriers the animals had to cross on a flat-earth with a single landmass to reach the ark as well as disperse. Needs to ask the number of "species" which occupied this supercontinent. Needs to ask the number of ecological zones on this supercontinent. Needs to ask the size of the flat-earth. How much rainwater would it take to submerge the flat-earth?

Is the flood account internally coherent given the "primitive" cosmography which the critics ascribe to the narrator? Isn't that the proper way to direct the question?

Critics need to get their stories straight. If they are going to attribute a triple-decker cosmography to Genesis 1, then that also has to be the frame of reference for Gen 6-9.

It doesn't speak too highly of their intelligence when critics raise self-contradictory objections to Gen 1-9. For one set of objections cancels out the other set of objections.

## Losing faith in theories

As a young Christian, when I was presented with the view that Christians must believe in a young-earth and global flood, I went along willingly...One also finds erosional canyons buried in the earth. These canyons would require time to excavate, just like the time it takes to erode the Grand Canyon...And being through with creationism, I very nearly became through with Christianity. I was on the very verge of becoming an atheist.

<http://home.entouch.net/dmd/gstory.htm>

This is a stereotypical narrative for many apostates. When they lose faith in creationism, or some particular claim thereof, they lose faith in Scripture.

At the risk of stating the obvious, Genesis never mentions the Grand Canyon. Genesis doesn't say the Grand Canyon was formed by the flood. Genesis doesn't say anything about the origin of the Grand Canyon one way or the other.

Morton is like a man who views a painting through tinted glasses, then when he decides the color scheme is off, throws the painting away rather than the glasses.

It's important to distinguish what the Bible actually says from theoretical constructs. Losing faith in some theory about the formation of the Grand Canyon is not logically equivalent to losing faith in Scripture.

I'm not debating the pros and cons of flood geology right now. And I'm not qualified to debate that issue in any case.

Rather, I'm drawing attention to a common confusion among apostates.

With sufficient ingenuity, you can come up with scientific theories to explain just about anything. You can start with the same data and come up with competing theories which are empirically equivalent.

Don't confuse rejecting a theory with rejecting the Bible, especially when the theory is far more specific than the Bible. When the theory talks about things on which the Bible is silent.

## "Biblical chronology"

I'm posting my side of some recent correspondence with a friend:

Sorry, but it seems to me that you're repeating the same conflation.

**i)** The Bible gives us an aggregate interval. The Bible itself doesn't tell us where to place that interval on a universal timeline. You yourself are tacitly taking 2011 as your terminus ad quem, then working back from that frame of reference.

But you didn't get that timeline from Scripture.

**ii)** Moreover, we're using a range of standard dating techniques to sequence historical events and map them onto a calendar. To say something happened in 4000 BC takes our dating techniques for granted to establish an absolute chronology, which, in turn, anchors a relative chronology.

So why assume standard dating techniques are sufficiently reliable to date creation or the flood (if we plug biblical data into the methodology), but too unreliable in mainstream cosmology or geology? Would it not be more consistent to be consistently agnostic about our dating techniques?

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1. I am not tacitly using 2011. I am just saying that the Bible gives an interval of roughly 4000 years between Adam and Christ, taking BC in the literal sense of "Before Christ". I presume nothing about how many years have transpired from Christ to the present.

**i)** In standard usage, "4000 BC" is a calendar date which presupposes a standard calendar extending from the present into the past.

**ii)** In **GOD AND COSMOS**, you say God made the physical universe about 6000 years ago (p167). That involves taking the present as your indexical terminus ad quem, then counting back from the present through the past to an absolute terminus ad quo.

**iii)** A 4000-year interval only gives you an internal chronology, whereas you are seeking an absolute chronology, viz. how old is the world?

2. The dating techniques used to get from Christ (or Nebuchadnezzar) to us rely primarily on human, historical records--not geological or astronomical methods.

If all you want is a raw interval. But that's insufficient to give you either a relative chronology or an absolute chronology. If you wish to synchronize that interval with world history, then you must utilize the dating methods of biblical archeology, viz. regnal years, astronomical calendars (i.e. Egyptian Sothic calendar), Mesopotamian astronomical notices (e.g. the phases of Venus, lunar/solar eclipses), dendrochronology, thermoluminescence, radiocarbon, fluorine, potassium-argon, archaeomagnetism, collagen content, lithic/ceramic typology, stratigraphy, palynology, varve dating, &c.



The question is where does the interval occur in relation to a universal timeline.

3. I have no problem tentatively accepting any dating method as long as it is not contradicted by Scripture.

Well, that seems makeshift. Is a dating technique reliable except when it happens to contradict Scripture? Wouldn't it be more logical to conclude that if a dating technique is unreliable when we can test it against some external check (e.g. Scripture), then the method is generally unreliable rather than generally reliable? Is it just a happy coincidence that it's unreliable when we can check it against Scripture, but reliable the rest of the time?

4. It seems to me that Scripture clearly places an interval of about 4000 years between the first man and Christ, rather than the 40,000 years (or 2 million years) obtained from geological dating methods. Hence the assumptions inherent in such dating methods must be flawed.

**i)** Actually, I'm not convinced that Biblical genealogies are meant to be exhaustive. Genealogies serve many different potential purposes. However, I think that's something of a side issue, so I won't press the point.

As you know, Green's argument was intended to be a solution to the perceived problem which 19C scientific time scales posed for Christian theology. But his solution is obsolete inasmuch as the problem has changed, since contemporary mainstream cosmology and genealogy now demands vastly longer intervals. A solution adapted to a defunct situation.

**ii)** Apropos (i), I'm not claiming that gaps in genealogies can make room for millions and billions of years. I'm just discussing your hybrid methodology, which must tacitly make use of modern calendars and selective appeal to ANE chronology to synchronize OT history with world history.

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There's a cluster of issues:

i) To begin with, you've already conceded the primary contention of my post. Genesis doesn't tell you that God made Adam and Eve c. 4000 BC. Even if we grant all of your operating assumptions, you must rely on extrabiblical as well as biblical information to arrive at that date.

ii) Suppose I know Shakespeare died at the age of 52. That gives me an interval, but that interval doesn't tell me when he lived, when he was born, or when he died. The interval doesn't tell me if he's earlier or later than Thomas Aquinas.

So an interval isn't even sufficient for a relative chronology, much less an absolute chronology. Where does the interval lie on a universal timeline?

iii) How do I know what year I'm living in? That depends.

a) At one level, that's a calendrical convention. It's simply a case of where the calendar assigns me at any given time.

In addition, I need access to information to tell me what year it is. In 2011, with the electronic and print media, that's easy to determine the date.

iv) Suppose I walked through a time portal which took me back to my hometown during the Sixties. Even if, for some odd reason, I didn't have access to a newspaper or the nightly news broadcast, I'd still have a rough idea, within a few years, of when it was—based on cars, haircuts, style of clothing, the presence or absence of certain buildings, what my parents looked like at that age, and so on.

v) Suppose I walked through a time portal which took me back 500 years to the future site of my hometown. In that event I'd have no idea the year, decade, century, or even millennium.

If I had access to astronomical equipment I might be able to calculate the year based on the position of the stars.

vi) If we have a chain of dated events, or sequential events, then any event within that interlocking series of events will have a specific location along the timeline. It will be bounded on either side by earlier and later events.

But a calendar is just an abstract series of days, weeks, months, and years. The calendar doesn't generally correlate a particular event with a particular day or date, unless it's something like a holiday which always takes place on the same date.

And in the course of history, there are many days for which we have no recorded events to fill that slot. In that case, it isn't always easy or even possible to correlate an isolated event with a specific day or year—for we don't know what went before or after. It isn't surrounded by other events which help us to position it in time.

vii) Likewise, there's a distinction between days and dates. In a sense, Christmas has the same date every year. But

suppose we were using the Sothic calendar. Because that loses a day every four years, Christmas wouldn't always be on the same day even though it was always on the same date. Eventually it would move through the seasons.

viii) Likewise, years are composed of days and hours. But there are different ways of calculating days and hours. Does a day begin and end from dawn to dawn or dusk to dusk? The Bible alternates between both systems.

Likewise, is the calendar a lunar calendar or solar calendar? The Bible uses both. However, lunar, solar, or lunisolar calendars only give you a relative chronology, not an absolute chronology.

ix) A day may have the same number of hours, but in ancient times, up through the middle ages, you had variable hours. A day was subdivided into equal fractions. Each hour had the same relative duration (in relation to the others). Yet their absolute duration varied with seasonable oscillations in the annular declination of the sun. The longer the day—the longer the hours; the shorter the day—the shorter the hours.

If you were measuring time by a sundial, that wouldn't be the same as modern units of time. It's not just the technology that's different, but the temporal metric. Only in modern times do hours have a set duration.

x) You don't have "biblical data to Christ." For there's a sizable gap between the OT and the NT—the intertestamental period. How does archeology date that period?

Moreover, I don't see where you have specific chronological data in the OT to calculate the timespan of the entire OT.

xi) How historians come up with a universal timeline is an interesting question. When available, I assume they rely on things like letters, diaries, and the work of other historians who preceded them. But it wouldn't be feasible to go back and independently double-check the entire timeline they've inherited from previous scholars.

xii) We see the difficulty in dating things when we observe conservative scholars attempting to date the books of the Bible, or the life of Christ, or the life of Paul. To be able to correlate a recorded event in Scripture with a universal timeline requires a certain amount of extrabiblical information. That information can be reliable, unreliable, or nonexistent. It's pretty hit-and-miss. Sometimes we have it, sometimes we don't.

Take Amos 1:1. That time marker (i.e. the earthquake) would be recognizable to the original audience, but it's much harder for us to pin down. It may possibly correspond to destruction levels at stratum VI of Hazor, which one field archeologist dates to c. 760 BC. But even if that correlation is sound, how to date that stratum only pushes the question back a step. And that, in turn, relies on the standard dating methods of modern archeology, such as the law of superposition (i.e. lower strata are earlier than higher strata).

xiii) I don't know quite what you mean by "historical records" for the last 2000 years. Unless historical records come with dates, the historical records must, themselves, be dated. So that pushes the question back a step.

xiv) If you mean Usher didn't need to use biblical archeology to tote up the genealogies, that's true. But his

overall chronology does make use of extrabiblical information.

xv) Keep in mind, once again, that I don't concede your assumption about gapless genealogies. I granted that for the sake of argument, in part because it doesn't affect my primary objection regarding extrabiblical supplementation, and in part because the perceived apologetic value of Green's analysis has been mooted by subsequent scientific developments. (Not that I think those developments can't be challenged in their own right, but that was Green's operating assumption.)

xvi) You say, "Such dating is quite distinct from cosmological and geological methods (including varves, radio-carbon, etc.). These rely on theoretical extrapolation beyond the observational data to eras well beyond recorded history."

Well, that's true for any reconstructive science, be it archeology, forensic anthropology, etc. That leaves us with possibilities or probabilities rather than certainties.

It also depends on the specific assumptions or methods of the guild. Are they assuming the uniformity of nature? Methodological naturalism?

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i) Years are composed of days and hours. Since you're trying to operate with a "biblical chronology," that involves the question of how the Bible defines a day or hour. How the Bible measures the passage of time. What type of calendar a Bible writer was using.

ii) Likewise, when you ask a very general question such as how I know I'm living in 2011, then the answer can take us in many different directions. While that might be tangential to your primary concern, I'm just following you where you chose to take the conversation.

iii) Seems to me that you've been moving the goal post in the course of our exchange. You originally said Genesis dates the creation of Adam and Eve to 4000 BC, invoking the genealogies (Gen 5 and 11) to substantiate your claim.

After that you shifted to other chronological notices in the rest of the OT as well as the NT.

After that you made allowance for the use of extrabiblical chronological sources to bring us up to 2011.

You originally said "All I am claiming is that Genesis (or, better, the Bible as a whole), places the creation of Adam roughly 4000 years before the birth of Christ. "

But when you also say the world is about 6,000 years old, that's not all your claiming.

Likewise, you said "I presume nothing about how many years have transpired from Christ to the present."

But then you keep insisting that about 2000 years transpired from Christ to the present. So you do presume how many years transpired from Christ to the present.

You said you're "not tacitly using 2011," yet you gave a calendar date of c. 4000 AD as your terminus ad quo, which presupposes a continuous calendar. And since you say about 6000 years have elapsed in toto, that means you're tacitly using 2011 as your terminus ad quem.

I'm trying to adapt my responses to the moving target you present. You seem to be improvising your position as we go along.

I also don't see you distinguishing between relative and absolute chronology, although I've drawn attention to the relevance of that distinction on more than one occasion now.

iv) A basic problem is that you and I are talking at cross-purposes. I raised a narrow objection to your initial claim. Your "biblical chronology" is not a simon-pure biblical chronology. It implicitly includes extrabiblical sources to fill in the blanks. That's not something you can derive from the genealogical information in Gen 5 and 11, or the OT generally, or the NT.

It's important for us to distinguish what the Bible actually teaches about chronology from an eclectic theoretical construct or hypothetical reconstruction that makes use of Biblical and extrabiblical information alike.

We need to distinguish belief in Scripture from belief in something above and beyond Scripture.

By contrast, you seem to be focussed on debating the merits of conventional dating methods and assumptions in mainstream cosmology and geology. That's a worthwhile debate, and Christians who affirm a young-earth chronology have intellectually respectable strategies available to them to challenge establishment science on that front.



## According to Genesis

According to Genesis, Adam and Eve were created about 4000 BC (Gen. 5 & 11)...

<http://bylogos.blogspot.com/2011/07/demolition-of-adam.html>

In general, this is an excellent post. I'm just going to pick on this one statement—because it reflects a common, subconscious conflation.

*Genesis* doesn't place the creation of Adam and Eve *anywhere* on *our* calendar. Assuming the days of Gen 1 are consecutive calendar days, assuming the genealogies have no gaps, it remains the case that *Genesis* doesn't date the creation of Adam and Eve to c. 4000 BC.

That's because the Bible doesn't give us a continuous calendar marking off the days from the moment of creation to the current date. What the Bible gives us is a rough, internal, relative chronology.

I say it's "rough" because it doesn't give us a day-by-day sequence. I say it's a relative chronology because it places some recorded events earlier or later than others. And it supplies a terminus ad quo or time-zero at the moment of creation. But it doesn't give us an absolute chronology. Rather, it gives us a set of internal relations.

What's really involved in calculations like this is an effort to correlate Genesis with *our* calendar. We begin with a chronology of the ANE, then try to intercalate Genesis somewhere in that framework.

So we're dealing with a hybrid chronological construct, which has both biblical extrabiblical information feeding into it. And, of course, a chronology of the ANE is a complex historical reconstruction, with various methods, assumptions, and interpolations.

When we talk about the date of creation or the date of the flood, it's important to distinguish between biblical and extrabiblical considerations.

This goes to a point of tension in young-earth creationism. On the one hand, creationism is sceptical of standard cosmological and geological dating techniques. On the other hand, creationism tries to time Noah's flood or the origin of the world within narrow parameters. It would make more sense for creationism to be consistently rather than selectively sceptical about standard dating techniques.

## Instantaneous recreation

*20 But in fact Christ has been raised from the dead, the firstfruits of those who have fallen asleep. 21 For as by a man came death, by a man has come also the resurrection of the dead. 22 For as in Adam all die, so also in Christ shall all be made alive. 23 But each in his own order: Christ the firstfruits, then at his coming those who belong to Christ.*

*51 Behold! I tell you a mystery. We shall not all sleep, but we shall all be changed, 52 in a moment, in the twinkling of an eye, at the last trumpet. For the trumpet will sound, and the dead will be raised imperishable, and we shall be changed. 53 For this perishable body must put on the imperishable, and this mortal body must put on immortality ([1 Cor 15:20-23, 51-52](#)).*

Young-earth creationists subscribe to a kind of instantaneous creation, although that's staggered over six days, inasmuch as God instantly made things, but in stages. Serial instantaneous creation.

Critics of young-earth creation regard this as artificial. An ad hoc face-saving device to harmonize their chronology

with the scientific evidence.

I'm not going to debate that particular issue, which I've discussed on other occasions. Instead, I'd note that in the myopic debate over Biblical protology, it's easy to overlook a comparable situation in Biblical eschatology.

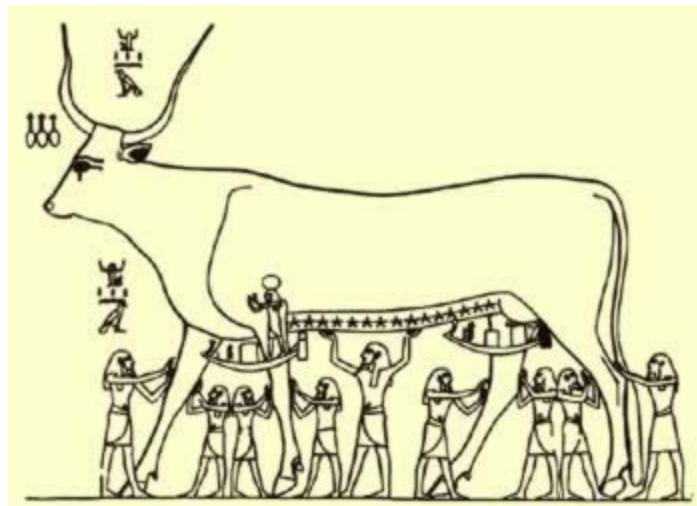
One of the things that will occur when Jesus returns is the instantaneous glorification of Christians who are alive at his coming. Sickly Christians will be restored. Elderly Christians will be rejuvenated.

Odds are, some Christian women will be pregnant at the Parousia. By implication, babies in the womb will be instantaneously glorified. Mother and child will both be glorified in situ. Although they were conceived in a fallen world, the babies will be born into what looks like an unfallen world. A fallen world that's restored during their gestation. They will have no direct experience of sin. At most, their glorified Christian parents can tell them what life was like under the curse.

And it seems to me that that's analogous to mature creation or apparent age. But in this case, instantaneous recreation rather than instantaneous creation.

## Bovine cosmography

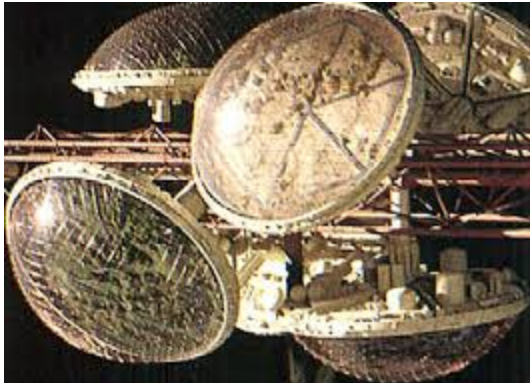
Liberals and outright unbelievers routinely say the cosmography of Gen 1 is mythological. Well, let's compare Gen 1 with ancient Egyptian cosmography, then ask yourself which depiction is clearly mythological:



Afterwards, the sun god, Re, withdrew to the sky on the back of the celestial cow who is the Goddess [Nut](#) transformed. The cow is supported by [Shu](#), the eight Heh-gods along with the Pharaoh. This would account for the importance of the book for the king, who was the "son" and successor of Re, and who withdraws to the sky upon his death, like Re, on the back of the heavenly cow.

<http://www.touregypt.net/featurestories/celestrialcow.htm>

## Silent Running



Still, one of the standing problems of the text, and a source of embarrassment from patristic times forward, is that the light is divorced from the stars. How can it be, asked those to whom rabbis, Church Fathers and even Reformation theologians replied, that there was light beside and before that of sun and moon? How can it be, later skeptics inquired, that a day passed when the earth did not rotate once around the as-yet uncreated sun? To resolve the tension, one need only bring to Genesis 1 the assumptions of a Hellenistic doxographer, namely, that this most orderly of all texts is systematic in intention.

The opening line of Genesis 1 contains a geography of the cosmos...Light is the first new element. Light is also fire, as the two are not divorced in any ancient cosmology.

Yhwh next installs a "firmament"...This is "the plate," or vault...The birds "of the skies" will fly "across the surface of the plate of the skies" (1:20), never just "across the surface of the skies."

The light is above the upper part of the tohu. The plate separates it from the lower part of the tohu. As of the

second day, then, no light penetrates below the plate, and darkness still enshrouds the inhabited planet. On the third day, Yhwh drains the waters that are below the vault into a single basin; land emerges from the primordial muck. The land then brings forth terrestrial vegetation. The terrestrial vegetation seeds itself in the absence of light, just as seeds germinate in the dark.

*God said, let there be luminaries in the plate of the heavens, to distinguish between the day and the night, that they be for signs, both for festivals/appointed times/seasons and for days and years, and that they be luminaries in the plate of the heavens, to throw illumination on the earth. And it was so. God made the two large luminaries, the large luminary for governing the day and the small luminary for governing the night, and the stars. And God put them in the plate of the heavens to cast illumination on the earth, to govern the day and the night, and to distinguish between light and dark ([Gen 1:14-18](#)).*

The light remains above the plate of the sky. And no new light is created on the fourth day. The term for the luminaries is not the causative participle, "shiners", but a noun with either a passive or a locative sense. That is, the luminaries, which rotate into position each day or year or period of years, permit the light that penetrates the upper waters to filter through the plate of the sky onto the earth. Light exists independently, previously, behind the plate, and these "lighted things" or "places of light" transmit it to the earth. So, these entities "in the plate of the heavens" must be intermediaries, functioning as membranes, which regulate how much light negotiates the division between the extracosmic region of Yhwh and his light and the cosmic region between the earth and the sky.



This is why Yhwh sets the luminaries *into the plating of the sky* (1:17), as opposed to where birds fly: *across the surface of the plating of the sky* (1:20; cf. 1:1, *across the surface of the deep/water*).

If the luminaries are merely membranes set into the plate of the sky, then the plate itself must be in motion relative to the plate of the earth. The stars, sun and moon would rotate in fixed positions on the plate of the sky.

In this cosmological system, the stars and planets...are merely holes.

B. Halpern, **FROM GODS TO GOD: THE DYNAMICS OF IRON AGE COSMOLOGIES** (Mohr Siebeck 2009), 429-433

By way of comment:

**i)** Although he himself doesn't draw the connection, Halpern's analysis dovetails with the cosmic temple interpretation which scholars like Beale, Kline, Levenson, Walton, and Vogels have advanced.

**ii)** Apropos (i), on this view the cosmic "plate" would be an architectural metaphor.

Keep in mind that there are Hebraists like Victor Hamilton who don't think *raqia* means a hard surface. But even if it did, that could be figurative.

**iii)** On the face of it, Halpern's explanation is only partially successful in solving the problem he posed at the outset. His analysis would account for the preexistence and

independence of light (on day 1) in relation to the skylights on day 4.

However, it fails to explain the diurnal cycle on days 1-3. If sunlight didn't reach terra firma until day 4, when the skylights were cut into the cosmic plate, then how does he account for the alternation of morning and evening, day and night prior to the fourth day?

**iv)** One possible explanation, although he himself doesn't offer this explanation, would extend the architectural imagery. On this view, the sequence is structural rather than chronological. The narrative spatializes time. You have to roof the temple before you can put skylights in the roof to provide natural illumination, even though there was day and night outside the building. Likewise, you have to erect walls before you can have clerestory lighting.

**v)** BTW, it's difficult for a modern reader to read Halpern's description and not visualize a combined greenhouse and planetarium. I imagine the geodesic greenhouses floating in outer space, in **SILENT RUNNING**.

## "Because it hadn't rained"

I'm going to briefly evaluate a supporting argument for the framework hypothesis:

"Because It Had Not Rained" (Gen. 2:5) Although the above considerations make the framework interpretation a plausible understanding of the days of creation, we recognize that we have not yet demonstrated the impossibility of a sequential understanding of the creation days. One might still argue that day four need not be taken as a recapitulation of day one, proposing instead that God could have sustained day and night for the first three days by supernatural means prior to the creation of the sun, moon and stars. But Gen. 2:5 rules out such an explanation and further strengthens the link between days one and four in a figurative framework. Gen. 2:5a states that "no shrub of the field was yet in the earth, and no plant of the field had yet sprouted," and verse 5b provides a very logical and natural explanation for this situation: "for the LORD God had not sent rain upon the earth, and there was no man to cultivate the ground" (NASB). Then, in verses 6-7, we are told how God dealt with these exigencies. In verse 6, the absence of rain is overcome by the divine provision of a rain cloud ("a rain cloud began to arise from the earth and watered the whole surface of the ground"); and in verse 7, the absence of a cultivator is overcome by the creation of man. [7] Notice that Moses offers his audience (ca. 1400 BC, long after the creation period) a perfectly natural explanation for the absence of vegetation. The Israelites would have been familiar with the idea that some form of water supply is

necessary for plant growth - whether God-sent rain or man-made irrigation. So when Moses states that God didn't create vegetation until He had established the natural means of sustaining that vegetation, i.e., the rain cloud (verse 6), he is assuming that the Israelites would recognize the logic of this situation based on their own experience. The very fact that Moses would venture to give such an explanation indicates the presence of an unargued presupposition, namely, that the mode of providence in operation during the creation period and that is currently in operation (and which Moses' audience would have recognized) are the same. Since the mere giving of a natural explanation presupposes providential continuity between the creation period and the post-creation world, we may infer a general principle, applicable beyond the case of vegetation, that "God ordered the sequence of creation acts so that the continuance and development of the earth and its creatures could proceed by natural means." [8] In other words, during the creation period, God did not rely on supernatural means to preserve and sustain His creatures once they were created. With this principle in hand, we now return to the problem of daylight, and evenings and mornings, prior to the sun. Although the sequential view attempts to explain this problem by hypothesizing that God sustained these natural phenomena by some non-ordinary means for the first three days, this speculation of human reason is contradicted by the disclosure of divine revelation that God employed ordinary means during the creation period to sustain His creatures. Thus, we are cast back upon our original suggestion that the fourth day is an instance of temporal recapitulation, narrating the creation of the normal physical mechanism God established to sustain the daylight/night phenomenon throughout the creation period and beyond. Gen.

2:5 necessitates a non-sequential interpretation of the creation account, and non-sequentialism in turn demonstrates that the week of days comprises a figurative framework.

[http://www.upper-register.com/papers/framework\\_interpretation.html](http://www.upper-register.com/papers/framework_interpretation.html)

**i)** This posits a false dichotomy between fiat creation and ordinary providence. Assuming for the sake of argument that the calendar-day interpretation is correct, it would still be the case that after each subsequent day of the creation week, God must conserve the creative results of the previous day. Day 2 will build on day 1. Day 3 will build on day 2. And so on. A chronological sequence of divine fiats is entirely consistent with the operation of providence.

**ii)** I don't think Gen 2 is conterminous with day 6 of Gen 1. Gen 2 isn't describing the "earth" in general, but the "land" of Eden in particular. Keep in mind that *eretz* can either mean "earth" or "land." Context determines which sense fits. This interpretation is complemented by the term *adama* (ground, soil, arable land).

**iii)** Gen 2 isn't reiterating the general creation of flora in Gen 1, on day 3. Rather, it refers to two specific types of flora. As one scholar explains:

The word for "shrub" in the expression "shrub of the field" occurs only a few times elsewhere; specifically, in Gen 21:15 and Job 30:4,7. In all its occurrences it refers to plants that grow in desolate wastelands (e.g. the bush under which Hagar placed Ishmael in Gen 21:15). The term "plant of the field" in the next clause is the same as that used in Gen 3:18 for the crops people would have to cultivate by the sweat of the

brow because of the fall into sin.

The remainder of vv5 and 6 expands on this by explaining the conditions under which the earth was functioning at the time. First, "the Lord God had not caused it to rain upon the earth [or land," and second, "there was no man to cultivate the ground" (v5b). How could these particular categories of plants exist if there was no rain, and especially if there was no man to cultivate the crops that would require cultivation (cf. Gen 2:15-17 with 3:17-19)? The point is this: There were already plants and trees on the earth with all the day 3 varieties (Gen 1:11-13), but no wilderness or weed versus cultivated crop conditions existed. That is what Gen 2:5-6 is telling us. The terms for plants here are not the same as those used for the plants on day 3 (Gen 1:11-12; eseb ["plant"] occurs there, but not eseb hassadeh [lit., "plant/crop of the field"]). The terms for vegetation in v 5 refer to desert wilderness shrubs (siah hassadeh [lit., "shrub of the field"]); see only elsewhere in Gen 21:15; Job 30:4,7) and cultivated crops (see, e.g. Gen 3:18; the plants man will need to cultivate for food in order to survive), respectively.

Richard Averbeck in **READING GENESIS 1-2** (Hendrickson 2013), 28-29,94.

**iv)** Given the Mesopotamian setting of the Garden (2:10-14), I assume the naturally available source of irrigation would be river water. River valleys can exist in otherwise arid regions (e.g. the Rio Grande) They may have lush growth along the river banks, but vegetation dries up beyond the green line, during the dry season—absent rainfall, flash-flooding, or farming.

In sum, even if we take both Gen 1 and Gen 2 to be internally sequential, there's no chronological conflict between the two narratives.

**v)** Although this consideration is secondary to the immediate issue at hand, I think it would probably be more accurate to render the Gen 1 refrain as "dusk and dawn" rather than "evening and morning." In context, I think the refrain refers to what demarcates night and day rather than periods of the day or night.

## From sea to shining sea

I'm going to comment on two related arguments for the claim that Scripture teaches a flat earth:

The phrase which he thereby introduces is "from sea to sea" as found in Ps 72:8 and Zech 9:10b, both of which describe the geographically universal rule of the coming Messiah as being "from sea to sea and from the river to the ends of the earth."

The context of these verses which are clearly speaking of the geographically universal rule of the Messiah over all nations on earth (Ps 72:9-11; Zech 9:10b; Cf. Ps 2:8 and Mic 5:4) implies that the phrase "from sea to sea" is a reference to the "two oceans on either side of the world", which enclose within their grasp the entire earth, the two oceans "in the middle of which lies the earth like an island." The phrase "from sea to sea" refers to two specific bodies of water, but not to these bodies of water just in themselves but as representative parts of the "two oceans on either side of the world."

The biblical terms "eastern sea" and "western sea," especially as used in Zech 14:8, where the context is one of apocalyptic universality, also seem to refer to the eastern and western halves of the ocean that surround the earth.

[http://faculty.gordon.edu/hu/bi/ted\\_hildebrandt/otesources/01-genesis/text/articles-books/seely\\_earthseas\\_wtj.htm](http://faculty.gordon.edu/hu/bi/ted_hildebrandt/otesources/01-genesis/text/articles-books/seely_earthseas_wtj.htm)

There are several glaring problems with Seely's argument:



**i)** His claim is unintentionally comical to American readers. After all, we have a national anthem that locates the continental US "from sea to shining sea." That doesn't imply a mythical cosmography.

**ii)** Seely fails to take genre into account. The prophets and psalmists often use poetic imagery.

**iii)** Yes, the verses in question refer to the Messiah's global reign, but they do so by using symbolic geography.

**iv)** Standard commentaries identify the two seas as the Mediterranean, on the one hand, and the Red Sea, Dead Sea, or Gulf of Aqaba, on the other hand. Those are real bodies of water, not mythical bodies of water.

On a related note is the claim that when Scripture refers to the "ends of the earth," that presumes a flat-earth cosmology. In this regard, it's instructive to consider a statement by Jesus:

*The queen of the South will rise up at the judgment with this generation and condemn it, for she came from the ends of the earth to hear the wisdom of Solomon, and behold, something greater than Solomon is here (Mt 12:42; par. Lk 11:31).*

That's illuminating because Jesus attaches a landmark to the stock phrase, where Sheba represents the "ends of the earth." Scholars usually locate Sheba in Yemen. Cf. E. Yamauchi, **AFRICA AND THE BIBLE** (Baker 2004), 90-91.

Although Yemen occupies the far end of the Arabian peninsula, Yemen is adjacent to Africa—separated by the Red Sea. And Africa extends far below Yemen. I daresay many people living in the Roman Empire knew perfectly that the world (or even dry land) didn't literally come to an end at Yemen. Even in Solomon's time, Jewish mariners were familiar with that part of the world (1 Kgs 9:26-28). They may not have known where Africa bottoms out, but they knew that Yemen doesn't mark the terminus of the S. Hemisphere. So Christ's statement is idiomatic and hyperbolic.

## Men and mushrooms

**1.** In general, evolutionary theory explains why two organisms are alike by postulating a common ancestor. Man and monkeys are more alike than man and mushrooms because the common ancestor of man and monkeys is far more recent than the common ancestor for man and mushrooms. Put another way, the man/mushroom split took place far earlier than the man/monkey split.

**2.** Of course, even if you grant evolution, it isn't that simple. There's a distinction between a homology and a homoplasy. Two organisms may be alike, not because they are related to each other, but because they are related to a common environment. Adaptive pressures resulted in convergent evolution.

**3.** How would a creationist account for the fact that man and monkeys are more alike than man and mushrooms? Take a comparison. Why is a sofa more like a chair than a blender? Why is a rocking chair both like and unlike a beach chair or swivel chair? Why is a Chippendale chair both like and unlike a French Provincial chair?

Well, they are all alike inasmuch as they are all designed for sitting—although some are arguably more decorative than utilitarian. They share a common design because they share a common function.

But beyond that general function are specific functions, which is why a beach chair is less like a rocking chair than two dining table chairs are like each other.

In addition, some differences are due to artistic variety.

Generally speaking, chairs are what they are because the chairblder made them that way. But there can be more specific reasons. In some cases he designs different chairs to serve different functions. In other cases, the motivation is aesthetic rather than functional. He likes variety.

And this is analogous to divine creation. Men and mushrooms are different because God made men to be men rather than mushrooms. Men are more like monkeys because God chose to make a world which exhibits the principle of plenitude. A world with maximal variety. Any two kinds of things will have more in common or less in common in relation to other couplings.

Now, before someone objects that "God did it!" has no explanatory value, would he also say "the chairblder did it!" has no explanatory value? But if, in fact, the chair is the way it is because that's how the chairblder made it, how does that ascription lack explanatory value? That *is* the ultimate explanation.

Now, the general theistic explanation allows for more specific reasons, just as the chairblder may have specific reasons for designing chairs one way or another.

Fauna and flora exist, not because fauna evolved from flora, but because fauna directly or indirectly depend on flora for their existence (e.g. herbivores, carnivores, oxygenation). In addition, due to symbiosis, some flora depend on fauna (e.g. pollination). Although a natural world without fauna may be possible, that will have fewer varieties of fauna.

## Young-earth theistic evolutionists

**1)** Like theistic evolution and old-earth creationism, young-earth creationism is prepackaged. Off the top of my head, these are typical elements:

- i) God made the world in 6 consecutive calendar days.
- ii) The universe is 6-10K years old.
- iii) God made all the natural kinds ex nihilo during that one-week timespan.
- iv) God directly created Adam and Eve.
- v) Adam and Eve were the first humans.
- vi) The flood was global
- vii) Animal mortality, predation, parasitism, and pathogens are postlapsarian and/or postdiluvian developments.

Young-earth creationists disagree on whether the Genesis genealogies are open or closed. But even if they are open, that only allows for another roughly 4000 years.

**2)** I'd like to focus on (vii). This generates internal tensions for YEC.

**i)** YECs are ambivalent on the timing of carnivory. Is this postlapsarian or postdiluvian? On the one hand, they appeal to the cursed snake and the cursed ground (Gen 3). That would make it postlapsarian. On the other hand, they appeal to the permission to eat meat (Gen 9). That would make it postdiluvian.

**ii)** The appeal to the cursed snake is exegetically dubious. In the cultural context, this probably distinguishes a venomous snake in a striking position from a venomous snake in a docile position.

Likewise, the cursed ground probably distinguishes the hospitable conditions inside the garden in stark from the inhospitable conditions outside the garden.

**ii)** They appeal to the golden-age passages in Isa 11 and 65. However, many young-earth creationists are dispensationalists. They think these Isaian passages refer to the Millennium. Yet mortality is still in force during the Millennium. Presumably, that includes death by "natural causes," viz., disease, old age.

**iii)** Likewise, they extrapolate from passages referring to human mortality to animal mortality. But that ironically reflects an evolutionary outlook, where humans and animals range along a common continuum. By contrast, Gen 1-2 clearly distinguishes humans from animals. Although we share some physical commonalities, we enjoy privileges that animals do not.

**iii)** They consider predation, parasitism, &c. to be natural evils, which are inconsistent with the "goodness" of the prelapsarian creation. However, they need to show on exegetical grounds that the narrator regarded natural "evils" (a modern classification) as not good, in terms of Gen 1-2. Ironically, young-earth creationists view the problem of animal pain in much the same way as atheists (e.g. Louise Antony, Andrea Weisberger). On the face of it, that's a preconception they are bringing to Genesis rather than deriving from Genesis.

**iv)** They draw hairsplitting distinctions between different types of carnivores. Insects and invertebrates don't count.

**v)** They are ambivalent on what changes occurred. Sarfati says:

The Bible doesn't specifically explain how carnivory originated, but since creation was finished after Day 6 (Gen 2:1-3), there is no possibility that God later created new carnivorous animals (The Greatest Hoax on Earth, 288).

That's a key distinction—distinguishing fiat creationism from progressive creationism or theistic evolution.

He seems to allow for predatory equipment like claws and venom to be preexisting features ("predesigned") which either weren't used before the Fall, or were used for something else (289-90).

On the other hand, he also says God programmed creatures with genetic information that was switched on after the Fall (290). And he talks about embryology (290). So perhaps he believes prelapsarian creatures didn't have the preexisting predatory apparatus. Rather, they had the genetic program. After the Fall, God flipped the switch, so that for the first time some animals began to develop these features during gestation and maturation. It's hard to make out his precise position.

Likewise, Snelling suggests this could have been preexisting equipment which wasn't used for predation (Earth's Catastrophic Past, 1:239). On the other hand, he says:

Such structures as fangs and claws could have been the result of the expression of recessive features which only became dominant due to selection processes later, or were mutational features following the Curse instead of originally created equipment.

These would have included genetic changes so that its descendants would also henceforth slither on their

bellies...if God chose to make design and genetic changes to the serpent.

God may have flipped some "genetic switches" present in His original design that caused these changes to appear immediately...If God used such genetic switches to cause physical changes in some plants in response to the Curse...then perhaps teeth in the mouths and nails on the feet of animals designed for herbivorous diet transformed into fangs and claws respectively... Similarly, it is possible that bacteria and other microorganisms...also underwent genetic changes (1:239, 254, 256).

The problem with this explanation is that it becomes a second creation. Young-earth creationists espousing postlapsarian (or postdiluvian) theistic macroevolution. Isn't the definition of macroevolution the development of novel morphology (e.g. new body parts and body plans) in response to new genetic information?

**vi)** The argument suffers from additional problems. They appeal to examples of carnivores which can survive on vegetation. But that's very selective. Sure, there are exceptions. Some carnivores which normally prefer meat are actually omnivorous in a pinch.

But that doesn't work for creatures whose digestive system is essentially carnivorous or even hematophagous, viz., anteaters, jellyfish, vampire bats. To retrofit them from herbivores to carnivores requires macroevolution, kinda like those transformation scenes where humans turn into werewolves.

**vii)** For some odd reason, they think it would be morally impermissible for God to allow predation before the Fall, but



morally permissible for God to allow predation after the Fall.  
The distinction is ad hoc.

## Monkey's uncle

**i)** One of the prima facie challenges for Bible-believing Christians is how, if at all, we are related to extinct "hominids." I'm going to use "hominid" for convenience. By conventional definition, that term implies a relationship. My use of the term doesn't prejudge our relationship, if any. I use it for ease of reference.

I'm no expert, but since Christians are expected to take a position on this issue, I'll give my 2¢,

**ii)** In terms of fossil evidence, from what I've read this usually consists of skeletal fragments, sometimes collected from different sites. So our understanding (if you can call it that) of extinct hominids usually consists of composite reconstructions, in which paleoanthropologists rearrange fragments into an assumed pattern, resorting many interpolations and extrapolations to fill in the trace evidence.

More recently, this has been supplemented by comparative genomics.

Our popular impression of extinct hominids is based on highly imaginative artistic representations. The raw evidence in situ is far more ambiguous. Or so I've read, from multiple sources.

**iii)** Both Darwinians and creationists often make very self-confident statements regarding the human or inhuman status of fossil hominid evidence. From what I can tell, their confidence is often overrated. Due to the shifting sands of paleoanthropology, remains are frequently reclassified.

**iv)** On YEC chronology, extinct hominid remains are postdiluvial. On OEC chronology, extinct hominid remains could be prediluvial to varying degrees.

**v)** One putative evidence for human evolution is encephalization. Bigger brains indicate a later stage in human development—or so goes the argument. But that's subject to significant qualifications:

**a)** To some extent, brain size is correlated to body size. How much did a given hominid weigh? A smaller brain of a smaller hominid might be proportional to a human brain. So we must make allowance for the brain to body mass ratio.

**b)** The relationship between brainpower and intelligence is mysterious. Social insects famously exhibit intelligent behavior. Even the lowly amoeba exhibits intelligent behavior. That's not attributable to brainpower. How to interpret intelligent behavior in "brainless" organisms poses an interesting question. At the very least, they mimic intelligence. And that's something to take into account when we try to gauge the intelligence of extinct hominids from trace evidence of intelligent behavior. That can be deeply misleading. We are tacitly using ourselves as the frame of reference, because we understand what that would mean if we were doing it. Yet we discount that facile inference in the case of "brainless" organisms.

**vi)** The definition of "species" in modern biology is unsettled. There are competing concepts. Wider and narrower definitions.

**vii)** Did some hominids actually become extinct? Or were some of them absorbed into "modern man" through interbreeding?

**viii)** Consider all the different dog breeds. If all dogs became extinct, and all we had to go by were skeletal fragments, imagine a Darwinian arranging the fossil evidence into an evolutionary sequence of different species. Proto-dogs. Imagine how Darwinians would fight over the right classification for this or that canine fossil.

**ix)** To some extent, human eidenomy is adaptive to climatic conditions. If all paleoanthropologists had to go by were skeletal remains of Eskimos, Maasai, and Watutsi, would they classify these as members of the same species or different species? Would they arrange them in an evolutionary sequence?

**x)** Suppose the great apes (bonobos, chimpanzees, gorillas, and orangutans) were extinct. Would paleoanthropologists classify them as hominids?

**xi)** Apropos (x), compare the great apes to Australopithecus or Homo erectus. Because chimps, gorillas, and orangutans are our contemporaries, because we can study them, both in the wild and in the laboratory, we have a fairly good understanding of how they are both like and unlike us. As one wag put it:

The idea that human beings have been endowed with powers and properties not found elsewhere in the animal kingdom—or the universe, so far as we can tell—arises from a simple imperative: Just look around. It is an imperative that survives the invitation fraternally to consider the great apes. The apes are, after all, behind the bars of their cages and we are not. Eager for the experiments to begin, they are impatient for their food to be served. They seem impatient for little else. After years of punishing trials, a few of them have been

taught the rudiments of various primitive symbol systems. Having been given the gift of language, they have nothing to say. When two simian prodigies meet, they fling their signs at one another. More is expected, but more is rarely forthcoming. Experiments conducted by Dorothy Cheney and Robert Seyfarth—and they are exquisite—indicate that like other mammals, baboons have a rich inner world, something that only the intellectual shambles of behavioral psychology could ever have placed in doubt. Simian social structures are often intricate. Chimpanzees, bonobos, and gorillas reason; they form plans; they have preferences; they are cunning; they have passions and desires; and they suffer. The same is true of cats, I might add. In much of this, we see ourselves. But beyond what we have in common with the apes, we have nothing in common, and while the similarities are interesting, the differences are profound. D. Berlinski, **THE DEVIL'S DELUSION** (Crown Forum 2008), 155-56.

Keep that in mind when paleoanthropologists draw confident inferences about the humanity of extinct hominids. Appearances are often deceptive. If the great apes were extinct, imagine how paleoanthropologists might readily overinterpret the signs of their incipient humanity. But because they happen to be our contemporaries, we have a direct basis of comparison. By contrast, that's conspicuously lacking in the case of extinct hominids.

In the case of "cave men" who left paintings and petroglyphs, we can see human intelligence staring back at us. But that's exceptional evidence.

## Missing links

A friend asked me about missing links. For what it's worth, here's my reply:

Keep in mind that I'm no expert. In answer I'll try to first address the question of intermediate forms generally, then discuss hominids, although there may be some necessary overlap in my analysis:

**i)** Although I think Darwinians use intermediate form and transitional form synonymously, an organism can be an intermediate without being transitional. Take ecological intermediates like semiaquatic species. They share some features with land animals and other features with aquatic animals. That's not because they represent an evolutionary link, but because they function in a habitat that straddles land and water.

**ii)** I'd say one reason the fauna and flora exhibit such a range of similarities and dissimilarities is that God chose to manifest his wisdom by creating a wide variety of creatures. Ringing the changes on certain basic models.

**iii)** A hybrid appears to be an intermediate form. Take ligers (a cross between a lion and a tigress). If a Darwinian was examining the fossil remains of a hybrid, he might well classify it as a transitional form or evolutionary link. Could he tell from the fossil remains that it's actually a hybrid?

**iv)** Marsupials are similar to their mammalian counterparts. If all a Darwinian had to go by were fossil remains of extinct

marsupials, he might classify a Tasmanian "wolf" as a transitional canid.

**v)** Some snakes are oviparous, which they share in common with birds, most fish, and amphibians—but other snakes are viviparous, which they share in common with placental mammals. By Darwinian logic, that would make boas and anacondas an evolutionary link between reptiles and mammals! That's despite the fact that these are considered primitive snakes, compared to more advanced species like pit vipers.

**vi)** To my knowledge, fossil remains of hominids are usually skeletal fragments. From skeletal fragments, could a Darwinian tell the difference between a simian child, simian adolescent, and simian adult, or would he classify these as three different taxa?

Children have smaller skulls than adults. Since encephalization is considered evidence of evolution, would a Darwinian mistakenly classify the skull or skull fragments of an extinct simian child as an earlier hominid?

Likewise, I believe Cromagnon man had a larger cranium than modern man. If both were extinct, Darwinians would logically classify Cromagnon as later than modern man.

**vii)** To my knowledge, disease, diet, and climate can all affect body size, shape, and skeletal structure. Consider the difference between the Tutsi, central African pigmies, Australian aborigines, Eskimos, and Samoans.

If these were all extinct, and all we had to go by were skeletal fragments, would a Darwinian classify them all as homo sapiens, or would he classify them as different hominids?





## T-Rex

This is a follow-up to a previous post.

<http://triablogue.blogspot.com/2013/09/the-flintstones.html>

This is part of an email exchange I've been having with a friend. I said:

I'm not committed to humans coexisting with dinosaurs in the past. I'm simply pointing out that it's not as absurd as critics imagine. What's their objection? That early humans would be no match for T-Rex?

**i)** To begin with, that would only be a threat to humans if humans and carnivorous dinosaurs occupied the same areas. But if carnivorous dinosaurs were a threat to humans, humans could move out of the area.

**ii)** In addition, we don't know how fast T-Rex could move.

**iii)** More to the point, many predators are capable of killing humans. So it's striking that humans, which are naturally defenseless, have survived. That's a problem for Darwinians to explain.

How can East Indians coexist with tigers? How can Eskimos coexist with polar bears? Surely an igloo isn't much protection against a hungry polar bear.

How could American Indians coexist with cougars, grizzly bears, and wolf packs? I doubt a teepee presents an impenetrable barrier. Is that really so different from T-Rex?

Darwinians generally subscribe to an out-of-African theory of human origins, but how could African hominids coexist with leopards, lions, hyena packs, cape hunting dog packs, crocodiles, water buffalo, &c? Africa has so many predators (and other animals) which can (and do) kill humans with ease. A grass hut is no protection against them.

Is a spear any match for a charging lion? It's hard to drop a charging lion with a high-powered rifle. They are master stalkers. They hide in tall grass until they get close to prey, then come bounding out at high speed. There's very little time to respond. And these are often nocturnal predators, so you can't even see them coming.

Keep in mind, too, that according to evolutionary theory, our primitive ancestors were far less intelligent than we are. They had much smaller brains. So they couldn't necessarily outsmart the predators with superior weaponry.

Moreover, Ice Age predators were even larger than their modern counterparts. How were hominids any match for cave lions, cave bears, wolf packs, &c?

In addition, humans don't have the replacement rate of rodents.

Yet Darwinians think that somehow our simpleminded ancestors managed to survive in a very dangerous world.

People have this Jurassic Park image of T-Rex pursuing humans, but is that so different than natives surviving in Africa with wooden spears against formidable predators?

## "Genesis is not a science textbook"

I'd like to comment on the old chestnut that Genesis is "not a science textbook." Of course that's true, but deceptive.

Let's take a few comparisons. When scientists reconstruct a natural disaster from the past, they sometimes rely on eyewitness accounts. For instance, medieval accounts of the Bubonic plague are not scientific. They weren't recorded by scientists. They had no understanding of bacteria or transmission mechanisms.

However, that doesn't prevent a modern epidemiologist from identifying the disease. Medieval descriptions of the symptoms and progression of the disease supply raw material for a scientific analysis.

On a related note, take the claim that the Aztecs were decimated by European disease, for which they had no resistance. Obviously, historical accounts fail to give a scientific diagnosis of smallpox. There were no virologists in the 16C. Yet a modern epidemiologist may be able to diagnose the epidemic based on historical reports.

Likewise, a historical account of a tsunami is unscientific. It's not how a hydrologist would describe the event. Moreover, the event wasn't measured or recorded by scientific equipment. The observer has no understanding of how tsunamis are generated or propagated.

Nevertheless, the account may contain useful information to reconstruct the event. If observers say they saw the waterline recede or the bay empty, that's a precursor to a tsunami.

Likewise, anecdotal reports of ball lightning are unscientific. As of yet, I don't think ball lightning has been reproduced in the laboratory.

Yet eyewitness descriptions of ball lightning, however unscientific, contribute to a scientific understanding of the phenomena. They furnish observational data.

Or take the Tunguska event. The nature of the event is still disputed. It wasn't seen by scientists or recorded by scientific equipment. Yet eyewitness reports are still relevant to understanding the event.

Or take historical reports of supernovae (e.g. SN 185; SN 393; SN 1006; SN 1054). These aren't scientific records. They don't use telescopes. And it's not how a modern astronomer would describe the event. Yet modern astronomers take these reports seriously.

Cave paintings of Ice Age animals are unscientific. Yet they are still informative about their existence and distribution.

## Is Genesis a "scientific" account?

One tiresome cliché that's endlessly repeated in Christian debates over creationism is the claim that Genesis 1-2 is not a "scientific" account. Or the Bible is not a "science textbook."

At one level, the claim is trivially true. Gen 1-2 isn't written in scientific jargon. How could it be? If it was written in 20C scientific jargon, the description would be out of date by the 21C.

More to the point, this objection fails to distinguish between a scientific account and a factual account. For instance, I remember the Concorde disaster in 2000. That was televised. You could see the plane becoming engulfed in flames even before it became airborne.

Now, there happened to be footage, but even if there hadn't been any cameras rolling, there were eyewitnesses. Eyewitness accounts of the plane before and after takeoff wouldn't be "scientific." They would simply be descriptions of what the observers saw.

Yet their "unscientific" testimony would be useful in developing a scientific theory of what caused the accident. If investigators interviewed witnesses, they could interpret the "unscientific" testimony in scientific terms. To the extent that observers accurately remembered and reported what they saw, that's a factual account of the accident. And because it's a factual account, it can be translated into a scientific account, or at least contribute to a scientific explanation of the accident.

Even though Gen 1-2 isn't a scientific account, as long as Gen 1-2 is a factual account, it impinges on scientific theories of origins. it can rule out some erroneous scientific theories of origins.

## All creatures great and small

Physicists have a reputation for being the smartest scientists. Smarter than biologists. That's ironic since biology is far more varied and complicated than physics, so—if anything—you'd expect great biologists to be smarter than great physicists.

One of the putative evidences for evolution is the functional and structural similarity between otherwise diverse organisms, &c. Darwinians chalk this up to common descent. Mind you, that inference is tricky even on Darwinian assumptions inasmuch as Darwinians attribute some functional or structural similarities to convergent evolution rather than common ancestry.

Anyway, they contend that if God really is the Creator, and more so if natural kinds originated in divine fiat of special creation, then we'd expect more diversity in how organisms are designed.

But suppose, for the sake of argument, that God went back to the drawing board for each type of organism. In that case, the world would be far less comprehensible to man. The life sciences would be basically impossible.

Take a veterinarian. In a way, it's harder to be a vet than a doctor. That's because a vet must be competent to treat a variety of pets and farm animals, whereas a doctor only has to know about the human body. Human diseases. What is good or bad for humans, in terms of food, medicine, toxins, &c.

Even so, I imagine that in a pinch, a vet could operate on a human while a doctor could operate on a dog. If, however, every kind of organisms had a fundamentally different

design, you couldn't be a vet. There'd be way too much to master.

Likewise, you couldn't be a marine biologist if every marine species had a fundamentally different design. Admittedly, a marine biologist usually has a specialty, like dolphins or whatever. But a marine biologist is probably expected to know a lot about one (or maybe a few) species, and a little about a lot of species. Fish in general have a lot in common. That's what makes them fish. Marine mammals have a lot in common.

But if God designed each type of organism from scratch, so as to share very few functional or structural similarities, then the natural world would be pretty incomprehensible to man. There'd be far too much to sort out.

Or take something as "simple" and basic as yeasts. Essential to life. But imagine if every kind of yeast was radically dissimilar to every other type of yeast. Where would that leave us?

That, in turn, would make it basically impossible for man to adapt natural organisms to human use. Lacking any common frame of reference, it would be too complex to figure out.

It's beneficial to humans to live in a world that's understandable. That's something we can take advantage of. That's a sign of God's benevolence.



## **Adam, animals, and death**

Young-earth creationists typically reject animal mortality before the Fall. One oddity with that position is that Adam and Eve were created naturally mortal. They had the opportunity to acquire immortality by eating from the tree of life.

It would be incongruous if man, the apex of creation, was naturally mortal, while animals were naturally immortal. Or do young-earth creationists think every plant was a tree of life for herbivores?

## Food for you

After engaging in some lengthy linguistic analysis, Provan concludes by saying:

This translation allows us to notice something rather striking when [Gen 9:2](#) is compared with [Gen 1:24-25](#) and [Gen 9:10](#). In [Gen 9:2](#), one class of animals not mentioned at all—the *behemah*, "livestock." Gen 9, we thus realize, is concerned only with animals life in the *nondomestic sphere*: the predatory wild animals, the birds, the remaining wild animals (*remes*), and the fish. It is *wild* creatures, and not creatures in general, that now live their lives in fear and dread of human beings. The livestock already "belong" in human hands, from the perspective of Genesis. We may go further: the animals explicitly singled out in [Gen 9:3](#) as being given over to humans now for food are not *animals in general* but only some of the *wild land animals*: "every wild but nonpredatory land animal [Heb. *remes*] that is living shall be food for you. As I gave green plants to you—everything" ([Gen 9:3](#); my translation). Why are these particular animals (e.g., deer) singled out? Most likely it is because they are to become a much more important food source for humans than the others mentioned. I. Provan, **SERIOUSLY DANGEROUS RELIGION** (Baylor 2014), 233.

## From Eden to new Jerusalem

I'm going to quote and comment on Iain Provan's analysis of Gen 1-2 in *Seriously Dangerous Religion* (Baylor 2014):

The sacred nature of the world is first intimated in Gen 1 through the metaphor of the temple. Temples in the ANE were designed primarily as residences for the gods, rather than as places of worship. It is this close connection between cosmos construction and temple construction that we see also in [Gen 1:1-2:4](#), where the cosmos is presented as God's temple. First, temple-dedication ceremonies in the ANE often lasted seven days...second, we are told of God's gathering of the waters into one place so that they could serve a useful purpose as seas ([Gen 1:9](#)). This reflects the reality of the later temple in Israel's capital city of Jerusalem, within whose precincts was to be found an impressive "sea of cast metal, circular in shape" ([1 Kgs 7:23-26](#)). Third, we also read in Gen about the creation of the sun and the moon ([Gen 1:14-16](#))...the Hebrew word used here for "light" (ma'or) is most frequently used elsewhere in the OT for the sanctuary light in the tabernacle (the Israelites' portable temple prior to Solomon's time). Fourth, the end of the creation account in [Gen 1:1-2:4](#) also reminds us of the construction of the tabernacle in [Exod 40:33](#)...Finally before God finishes this creative work, we read in Genesis that he places in "image" in creation (1:26-28). In the ANE more generally, the deity's presence in his temple was also marked by an image, in which the reality of the deity was thought to be embodied (32-33).

**i)** The cosmic temple interpretation of Gen 1 is already becoming old hat in Bible scholarship. Provan isn't breaking new ground here.

**ii)** I agree with Provan and like-minded scholars who find temple motifs in Gen 1. I think Gen 1 foreshadows the tabernacle—as well as Noah's ark. In fact, I think we could augment the evidence. The "firmament" (1:6ff.) is arguably an architectural metaphor for a roof or ceiling, such as a temple would have. So, up to a point, I think this analysis is valid.

**iii)** That said, Provan overplays the temple interpretation. There's a big difference between saying Gen 1 contains a few suggestive descriptions which cue the reader to anticipate the tabernacle—quite something else to make that the dominant interpretive paradigm. Most of the content of Gen 1 bears no resemblance to a temple, even at a figurative level.

And that's what we'd expect from a global creation account. It's not a residence for God, but a residence for creatures. It contains lots of stuff you don't find in temples. At best, Provan might try to argue that it's God's residence in the vicarious sense that man functions as a priest of God.

For the most part, Gen 1 is describing a physical world with the furnishings necessary for physical existence. To make the temple metaphor the controlling interpretive lens is very disproportionate to the actual content and emphasis, which is more mundane.

**iv)** The comparison between the oceans in 1:9 and the "sea of brass" in Solomon's temple is rather desperate:

**a)** To begin with, the sea of brass has a completely different function. It's for ceremonial ablutions, whereas the ocean in Gen 1 is the habitat for marine creatures (1:20ff).

**b)** It's exegetically dubious to use a text outside the Pentateuch to interpret the Pentateuch. The Pentateuch is literary and conceptual unit. To some extent, the books of the Pentateuch mirror each other. They are mutually interpreting. Genesis lays down some markers which will be picked up in subsequent books of the Pentateuch. That's the primary frame of reference.

**c)** By the same token, even granting the presence of temple motifs in Gen 1, the counterpart to the "cosmic temple" in Gen 1 is the wilderness tabernacle, not the Solomonic temple.

**v)** If Gen 1 is a realistic creation account, then we'd expect it to describe the origin of water and bodies of water-like oceans.

Put succinctly, the creation narrative in Gen 1 is retold in Gen 2, this time through the metaphor of the garden rather than the temple (34).

What we are likely dealing with in Gen 2, then, is exactly what we are certainly dealing with in Gen 1. It is the idea that the whole world is sacred space. In Gen 2, however, this idea is developed using garden imagery (36).

A fundamental problem with this analysis is that if, according to Provan, the temple account (Gen 1) includes garden imagery while the garden account (Gen 2) includes temple imagery, then it's hard to claim these are two different ways of saying the same thing. According to his own analysis, Gen 1 contains garden motifs as well as temple motifs while Gen 2 contains temple motifs as well as garden motifs. So these aren't two different metaphors to express the same idea. The distinction between the two is blurred by shared motifs. His analysis works at cross-purposes with his conclusion.

## The Impossible Garden

The sacred nature of the world is also strongly suggested by the metaphor of the garden that is used for it in Gen 2. This is often missed, however because of a long reading tradition that understands this garden ("in the east, in Eden"; 2:8) as a place within the world rather than as a picture of the world...The authors of Genesis almost certainly did not have a particular location in mind when writing about the garden. Three features of their description strongly suggest this. First, the region to the "east" of ancient Israel was Mesopotamia...However, as we read the first eleven chapters of the Genesis story, we discover that human beings only end up in Mesopotamia as the result of an eastward migration from their starting point in the garden...They first leave the garden via the entrance/exit on its east side...Cain's failures lead him further eastward into the land of Nod (4:16); further eastward migration ultimately leads to Babylon (11:2). Eden, it seems, must actually be in the west... (33-34).

**i)** That fails to distinguish between east as a direction and east as a location. If, say, I sail north from Antarctica, I can travel for hundreds of miles in a northerly direction, but still be in the southern hemisphere.

**ii)** The migration to Babylon in 11:2 doesn't represent a continuous, linear migration from Eden. Provan fails to take into account the disruption of the deluge. We're not dealing with the geographical origin of the human race, but where the ark bottomed out. That becomes the new epicenter for humanity—via the survivors. The postlapsarian migration represents a new beginning. A new starting-point.

Second, we must remember that Gen 2 follows Gen 1... It has already described the creation of trees in that global context (1:11-12,29), as well as the creation of

beasts, birds, and humans (female as well as male; [Gen 1:20-27](#)). Chapter 2 repeats all of this in the context of the garden. The natural implication is that the garden is not located somewhere on the earth, but represents the whole earth (34).

**i)** An obvious problem with this conclusion is that Gen 2 doesn't repeat all the items in Gen 1. It's more restricted. It has a river, not an ocean. No marine creatures. It doesn't describe the origin of the sky, sun, stars, dry land, &c.

**ii)** According to the traditional interpretation, Gen 1 and Gen 2 do overlap. There's some carryover. Gen 2 is a more detailed description of man's creation and his original habitat.

**iii)** The tacit assumption of Provan's interpretation is that Gen 2 simply uses a garden metaphor. But if, in fact, this is a real garden, then we'd expect it to contain trees and wildlife. Those are realistic features.

If God did make a first human couple, by special creation, where would they live? A riverine location is a practical location. That's why you have the great river valley civilizations of Egypt, India, China, South America, and—yes—Mesopotamia.

River valleys have lush vegetation (e.g. fruit trees, shade trees) on both sides of the river bank. They supply water for cooking, washing, bathing, and irrigation. Drinking water for humans, livestock, hunting dogs, and game animals. Fishing and transportation. Solid waste disposal. When rivers overflow their banks, they leave a layer of silt which replenishes the topsoil. What biologists call a riparian zone.

Indeed, if the garden is not the whole earth, it is unclear how the whole earth is supposed to be populated and governed by human beings in line

with [Gen 1:28](#), for there is no hint in Gen 1-3 that human beings were ever supposed to leave the garden (34-35).

**i)** Actually, I'd draw the opposite inference. The cultural mandate (1:28) assumes that after man outgrew the confines of the garden, he'd expand outward, colonizing and domesticating other parts of the earth. Since Gen 2 says the human race began from just one breeding pair, most of the earth was initially unpopulated by humans.

**ii)** Moreover, the terms of the curse on Adam imply that conditions outside the garden were fairly inhospitable compared to conditions inside the garden. Provan's interpretation erases that invidious contrast.

Third, there is the puzzling matter of the geography of [Genesis 2:10-14](#) (35).

That's an old chestnut.

**i)** Given the lapse of time, it's unsurprising that some of the geographical markers may be hard to identify this far down the pike. Rivers change course. Rivers dry up. Place-names change.

**ii)** Provan is ignoring scientific and archeological evidence that locates Eden in Mesopotamia. Cf. K. Kitchen, *On the Reliability of the Old Testament* (Eerdmans 2003), 428-30; <http://www.asa3.org/ASA/PSCF/2000/PSCF3-00Hill.html>

Like other temples in the ancient world, this (cosmic) garden-temple incorporates within it a spring, from which the primeval waters flow out to water the four corners of the earth (2:6)... (36).

Which assumes the riverine imagery is figurative. But, of course, real people do settle alongside real rivers. That's



true the world over.

We see this in 1 Kings 6, where its interior is said to be "carved with gourds and open flowers...palm trees and open flowers ([1 Kgs 6:18,29](#)) (37).

**i)** Although that may be Edenic imagery, it may just be decorative.

**ii)** Even if it is meant to evoke the Garden of Eden, Provan's analysis is backwards: the garden doesn't imitate a temple; rather, a temple imitates the garden.

**iii)** There's also the problem of literary anachronisms, where later texts are used to gloss earlier texts. Perhaps, though, Provan thinks the Pentateuch was written after the construction and destruction of Solomon's temple.

We see it also in [Ezk 47:1-12](#)... (37).

No doubt that deliberately fuses temple motifs with Edenic motifs. But that's visionary and surreal. That's a different genre than historical narrative (e.g. Gen 1-2).

The particular "tree" that is the tree of life in the garden of Eden ([Gen 2:9](#)) is represented in the tabernacle by the branched lampstand with its floral motifs ([Exod 25:31-40](#); [37:17-24](#)) (37).

That may well be, but once again, Provan has the cart before the horse. The garden prefigures the tabernacle, not vice versa.

Provan continues in this vein. But that misses the point. Yes, biblical descriptions of the temple and tabernacle allude to Eden. But the garden is not a figurative temple; rather, the temple (or tabernacle) is a figurative garden. Although the garden can function as sacred space, it's still a garden.

This brings us back around to the Hebrew word *miqqedem* in [Gen 2:8](#) which has so often been translated as "in the east"...[but] it is not so much an expression of physical direction...The sun rises in the east (*miqqedem*), and light is a common OT metaphor for the divine presence (39).

**i)** To begin with, identifying "the east" with "light" would be better suited to the temple interpretation of Gen 1, where the celestial luminaries presage the Menorah. That's a temple metaphor, not a garden metaphor.

**ii)** The sun really does rise in the east—to an earthbound observer. That's not a metaphor, but a reality. Of course, sunrise and sunlight can function as metaphors, but there's no presumption that an allusion to sunrise or sunlight is figurative.

**iii)** Moreover, the narrator may not intend the reader to associate "the east" with sunrise or sunlight. Oftentimes "east" is just a location or direction, rather than a synonym for sunrise or sunset.

Of course, if you're traveling by foot, then sunrise gives you a rough compass point. But at that juncture we've strayed far from the prosaic reference in [Gen 2:8](#).

## River valleys

1. Which comes first—the river or the valley (ravine, canyon)? I'm not a geologist or hydrologist, but I believe this can happen in at least one of two different ways. Here's a conventional explanation of one process:

The true creator of a canyon is water, primarily in the form of a river. Over millions of years, water has scoured and cut away layer upon layer of rock, lowering a canyon's floor and widening its walls. Others have been carved through multiple layers of igneous rock, which is formed by the cooling and hardening of magma, melted rock material from within Earth, and metamorphic rock, whose texture or composition has been changed by extreme heat and pressure.

Slot canyons are cut and scoured by rushing water in the form of flash floods. A flash flood is a flood that occurs after a period of heavy rain, usually within six hours of the rain event. In arid environments where there is little soil to absorb the rain, water quickly runs downhill, gathering volume and speed as it goes. When it runs over the canyon, it descends in a wall of water that blasts through the canyon, eroding the walls and floor. As quickly as the water appears, it disappears, leaving the canyon dry and slightly changed until the next flood.

Water is a natural force of erosion everywhere on Earth. Surging over a landscape, water will pick up and transport as much material from the surface as it can carry. Aided by gravity and steep slopes, rushing water can carry increasingly larger and heavier objects,

including boulders as large as cars. If a river and its surroundings have been elevated from their original position by natural forces within the planet, that river will seek to return to its natural level as quickly as possible. Finding the least resistant path, a river will cut through rock layers. Lowering its floor little by little, the river will take millions of years to carve through the surrounding rock before it reaches the level it seeks. In the process, it creates a canyon. The rivers that created the canyons on the Colorado Plateau and elsewhere did so because rivers have a natural tendency to reach a base level. This refers to the point at which the river reaches the elevation of the large body of water, such a lake or ocean, into which it drains. Aided by gravity, a river will downcut or erode its channel deeper and deeper in order to reach the level of its final destination as quickly as possible. The larger the difference in height between the river and its destination, the greater the erosive or cutting force of the river.

Rivers erode because they have the ability to pick up sediments (loose rock fragments) and transport them to a new location. The size of the material that can be transported depends on the velocity, or speed, of the river. A fast-moving river carries more sediment and larger material than a slow-moving one. As it is carried along, the sediment acts as an abrasive, scouring and eating away at the banks and bed of the river. The river then picks up this newly eroded material, which, in turn, helps the river cut even deeper into its channel. If a river cuts through resistant rock, such as granite, its channel and the canyon it creates will be narrow and deep. If it cuts through weaker material, such as clay or sandstone, its channel and its accompanying canyon will be wide. When cutting through soft rock, a river can undercut its banks, removing a soft layer of

material while a harder layer remains above, forming an overhang. The overhang continues to grow as material beneath it is eroded away by the river until the overhang can no longer be supported and collapses into the river. Repeated undercutting can lead to landslides and slumps, creating a V-shaped canyon.  
<http://www.scienceclarified.com/landforms/Basins-to-Dunes/Canyon.html>

**i)** How long this naturally takes depends on a variety of factors. How hard or soft the layers are. The volume and rate of runoff.

**ii)** I'm also guessing that lava flows can rapidly create river channels.

**2.** On this model, the river comes first. The valley (ravine, canyon) is the result of erosion from runoff.

But I assume the principle can operate in reverse. If there's a preexisting valley (ravine, canyon), then that's the route that runoff will take. That will channel or funnel runoff. On that model, the valley (ravine, canyon) comes first. The river course is the result of that preexisting topography.

**3.** In principle, these can be complementary dynamics. Preexisting topography might create a natural drainage outlet for runoff. Conversely, runoff will deepen and widen the drainage outlet.

**4.** This has potential implications for young-earth creationism. Can you tell, just by looking at a river valley, which came first—the river or the valley. What was the mechanism?

**5.** Young-earth creationism has two different explanations:

**i)** Flood geology attributes some canyons to a global deluge.

**ii)** However, young-earth creationism can also attribute some valleys, ravines, canyons, &c. to mature creation. God made the world with a preexisting topography of some sort. That could include built-in drainage outlets for runoff.

**iii)** It may be difficult to sort out which is which this far down the pike. Is an extant valley (ravine, canyon) the result of mature creation, Noah's flood, or normal processes? For instance, I assume a volcanic eruption or massive earthquake might create new river channels. Likewise, a depression that's the result of mature creation will widen and deepen over time due to continuous erosion. Or so I imagine. I'm no expert.

Of course, there's the complication of conventional dating methods.

## Castaways

I've discussed this before, but I have more documentation this time around. A stock objection to the global flood interpretation is how animals migrated from Armenia (where the ark bottomed out) to other continents and islands. (Of course, that's not a problem for the local flood interpretation.)

Creationists posit floating log mats or vegetation mats. In addition, sailors can intentionally or unintentionally introduce new species into foreign habitat, viz. pets, livestock, game animals, rats. Pets and livestock can become feral.

My immediate point is not to evaluate the merits of these mechanisms. Rather, Darwinian opponents of flood geology ironically face a parallel problem. Darwinians labor to account for the presence of (admittedly sparse) fauna and flora on some extremely remote islands. They aren't prepared to say the fauna and flora originated on the islands. They aren't prepared to say the same species independently evolved on different scattered islands.

So they have to speculate on ways they might have gotten there. It was too far to swim. Plants can't fly. How does one account for the presence of familiar fauna on such geographically isolated islands?

Explanatory options were limited. It reduces to educated guesswork. At this juncture, Darwinians resort to the same naturalistic explanations as creationists:

In the South Pacific there is no such thing as a deserted island. They may be the most isolated in the world, but every one of the region's 20,000 islands has been colonised, from New Guinea - home to birds of paradise and the tribe whose brutal initiation ceremony turns young warriors into 'crocodile' men - to Fiji, French Polynesia and Hawaii.

This is the story of the ultimate castaways - from saltwater crocodiles and giant eels to crested iguanas and weird frogs - who succeeded against all odds to reach islands thousands of miles apart. These journeys are no mean feat. It has been estimated that an average of one species in every 60,000 years makes it to Hawaii. Incredibly, many of these colonisers made it to the islands thanks to some of the most violent forces of nature like cyclones and tsunamis.

<http://www.bbc.co.uk/programmes/b00kmv11>

The second instalment looks at how plants, animals and humans colonised even the most remote islands.

Most pioneers came from the west, with New Guinea acting as the launch pad. The saltwater crocodile is one species which managed to swim the 60-mile crossing to the next island group, the Solomons. The mass spawning of groupers on a Solomon Island reef releases millions of eggs, which drift on ocean currents to establish new populations. The activity allows grey reef sharks to snatch a few distracted groupers. Few animals made it to Fiji, Tonga and Samoa, 1000 miles further east. Fruit bats were the only mammals to cross the ocean divide, but smaller animals were carried here by cyclones and jet stream winds. In the absence of ground predators, invertebrates have reached monstrous proportions. Fijian crested iguanas are thought to have floated here on rafts of vegetation. Seabirds have made the crossing to French



Polynesia, where their rich guano helped fertilise barbed seeds stuck to their feathers and turn barren coral atolls into fertile groves. One plant needs no such help. Coconuts can survive drifting for two months at sea and lay roots into bare sand. Before the arrival of humans, fewer than 500 species colonised Hawaii in 30 million years. Once established, they evolved into countless new varieties.

[http://en.wikipedia.org/wiki/South\\_Pacific\\_\(TV\\_series\)#2.\\_.22Castaways.22](http://en.wikipedia.org/wiki/South_Pacific_(TV_series)#2._.22Castaways.22)

## Was there an Ur-cat?

For example, I absolutely agree with Osborn that lions tearing off bark for food is silly. But which scientifically informed creationist actually holds to such a ludicrous position?

The first thing that must be said is there were no "lions" in Eden. There was only the first animal type of the various created kinds, or barmaids. Since lions belong to the cat kind, there was probably some primordial cat that is the ancestor of all the cats we have today...In fact, I would venture to say that many of the animals we see today probably did not exist in the primordial world.

[http://www.angelfire.com/falcon/ddd\\_chc82/articles/DeathBeforeFall\\_review.pdf](http://www.angelfire.com/falcon/ddd_chc82/articles/DeathBeforeFall_review.pdf)

I agree with much of what Daniel says here. However, I don't see that creationism is logically, exegetically, or scientifically committed to the proposition that all modern cats descend from a single exemplar.

Must we say that Siberian Tigers and caracals all descend from one exemplar? Why could there not be a primordial kind for the big cats and another primordial kind for small cats?

Must weasels and sea otters all derive from a single mustela? What about God making an aquatic mustela kind from which modern river otters and sea otters derive?

Likewise, must turtles and tortoises all derive from a single Chelonian exemplar? Why not a primordial kind for turtles and another primordial kind for tortoises—given that one is terrestrial and the other aquatic?

Currently, some bats are insectivorous, some bats are frugivorous, and some bats are hematophagous. According to creationism, these might represent adaptations. They all descend from a single exemplar.

But I don't see that creationism precludes an insectivorous Ur-bat in distinction to a frugivorous Ur-bat. I don't see that creationism demands an Ur-cat, Ur-bat, &c. The main thing is fiat creation or special creation of natural kinds, and not creation of singular kinds—where everything of a kind must branch out from one trunk. Why not an Ur-turtle and an Ur-tortoise?

Similar terrestrial and aquatic or marine species needn't derive from one exemplar. Rather, you can have original diversity along with subsequent diversification within terrestrial types and aquatic (or marine) types.

I see no reason why, even on creationist grounds, oviparous snakes, viviparous, land snakes, sea snakes, venomous snakes, and constrictors must all be derived from a single generic exemplar.

Oviparous snakes can be one kind of snake, which descend from an oviparous exemplar. Sea snakes can be another kind of snake, which descend from a marine exemplar. And so on and so forth.

Seems to me that Daniel is mixing creationism with a conventional taxonomy, where you classify organisms from

general to specific. But the notion of fiat natural kinds is compatible with some basic varieties from the get-go.

## Creation and extinction

The late William Provine was a leading evolutionary biologist. More substantive than Richard Dawkins. Here he explains why he thinks the impression of design in nature is illusory:

Understanding evolution does not undermine many beliefs in god: deism, gods that work through natural phenomena, gods invented from tortured arguments by theologians or academics, and many others.

Understanding evolution is, nevertheless, the most efficient engine of atheism ever discovered by humans. It challenges the primary, worldwide, observable reason for belief in a deity: the feeling of intelligent design in biological organisms, including humans.

The feeling of intelligent design disappears in the perspective of evolution...So, of the 50,000 or so species, all but twenty-five went extinct...Even with all the exquisite adaptations that smack of an intelligent designer, these vertebrates were poor survivors.

Natural selection is not a mechanism, does no work, does not act, does not shape, does not cause anything...Natural selection is the *outcome* of a very complex process that basically boils down to heredity, genetic variation, ecology, and demographics (especially the overproduction of offspring, and constant struggle). The adaptations that evolve we call "naturally selected"...The process also virtually guarantees extinction when the environment changes sufficiently, which it often does. The intelligent design apparent in the adaptations has no inkling of environmental change. The pattern of extinction,

however, is precisely what one would expect of the causes of natural selection.

Every organism that has become extinct (about 99+ per cent of all species that have ever lived) was jam-packed with adaptations. Some of those adaptations became detriments to the organism when the environment changed and caused the organism to become extinct. The better an organism is adapted to a particular environment, the more certain it is that it will become extinct when the environment changes.

Adaptations are hopelessly tied with extinction. The feeling of intelligent design in organisms must thus be tied to extinctions, too. That is why evolutionists give up on the feeling of intelligent design.

The second reason why understanding evolution precludes the feeling of intelligent design is that evolution also shows no hint of progress.

Each of these infectious agents has evolved as long as humans have existed. I can see no hierarchy whatsoever in the productions of evolution. Any deity that would work this way seems perfectly awful to me. The process that produced these very different pathogens and humans just happens, and speaking as if evolution "cared" about its production is unintelligible.

These two reasons to reject the feeling of intelligent design in biological organisms are just a sample of compelling reasons. The famous evolutionist George C. Williams has written an essay on the evolution of social behavior, and concludes that social behavior in animals is nothing less than ghastly, and any hope we have as humans to have a decent moral world is to fight fiercely against the selfishness that evolution has

produced in us. "Evolution, Religion, and Science" **THE OXFORD HANDBOOK OF RELIGION AND SCIENCE** (2006).

**i)** One thing that's striking about this is how much is just a variation on the so-called problem of natural evil or so-called problem of animal suffering. A standard theodicy which fields that problem will already cover most of this ground. By the same token, most of this isn't uniquely evolutionary.

**ii)** In YEC, God creates all the nature kinds at the outset. They diversify from thereon out. In OEC, God introduces natural kinds in staggered fashion. YEC is more synchronic, OEC is more diachronic. But in both cases, once made, natural kinds are subject to adaptation. Creationism allows for adaptation and microevolution.

Mass extinction due to overspecialization and environmental change is not at odds with YEC or OEC. Even if organisms are divinely designed, they will vulnerable to extinction if their environment changes too fast or too drastically. Although evolution implies mass extinction, you can have mass extinction apart from evolution. Absent providential protection, you can have mass extinction even if evolution is false.

**iii)** To take a comparison, our hitech civilization is utterly dependent on electricity. Our technology is junk without electricity. A natural disaster could render our technology useless. But it would hardly mean our technology wasn't designed.

**iv)** It's true that there's a tradeoff between specialization and adaptability. It's unclear why Provine supposes that's inconsistent with design. To be a creature is to have built-in

limitations and inherent vulnerabilities. Even omnipotence can't make an unlimited creature.

Different organisms exemplify different possibilities. Each design has distinctive advantages and corresponding disadvantages. That's not a design flaw. That's a necessary tradeoff.

Variety is not inconsistent with divine design. Indeed, theists who espouse the principle of the plenum think variety is a virtue. God creates the greatest compossible variety.

**v)** Perhaps Provine imagines that mass extinction is inconsistent with divine foresight and/or divine benevolence. To begin with, it is unclear, as a matter of principle, why the extinction of a species is problematic for theism but the extinction of an individual is not. A species is just a collection of individuals.

What if most organisms are temporary by design? God never intended for most organisms to be immortal. And most organisms don't know what they are missing. They lack consciousness. In Biblical theism, immortality was never the common property of most lifeforms.

That's only clearly reserved for humans and angels. It's possible that God will resurrect some animals—perhaps animals dear to sainted Christians.

**vi)** Perhaps Provine thinks it would be pointless for God to create organisms that become extinct. But isn't there a sense in which everything at present becomes extinct when it becomes history? The past is what was, not what is. There's a sense in which the 19C is now extinct. It went extinct when it slipped into the irretrievable past. It no



longer exists—at least not in our current timeframe. (This could also devolve into a debate over the A-theory and the B-theory of time.)

But does that mean history is pointless. It wasn't pointless to people at the time. It wasn't pointless for *them*.

Is Provine viewing it from a retrospective standpoint? Is he suggesting that looking back on the past from our vantage-point, it is pointless? If so, what makes our perspective normative? What privileges the present perspective? Suppose you were to view it from a prospective standpoint. There's a sense in which the future is irrelevant to me. The year 2100 is irrelevant to me, if I'm dead by then. But the future is hardly irrelevant to people living in the future.

**vii)** If there was no afterlife, then Provine would have a point. But natural history doesn't speak to that issue.

**viii)** Provine fails to make allowance for the Fall. Humans are liable to illness, aging, and death due to the Fall. I agree with him that those conditions always existed in nature. The world at large was never Edenic. Life inside the garden was sheltered from those asperities.

Obviously, Provine doesn't believe in the Fall. But my immediate point is one of consistency. The phenomena he documents don't count as evidence against Biblical theism, for that's consistent with life outside the Garden.

**ix)** Yes, the social behavior of animals is often ghastly by human standards, but that's because different species have different natures. What's morally decent or indecent is, to some degree, indexed on the nature of the creature.

x) I agree with him that the evolutionary narrative is not progressive. But there's a sense in which creationism is not progressive. YEC is essentially cyclical. God creates natural kinds, which thereafter reproduce after their kind. Although there's some progression in the initial series of creative fiats, once that's complete, once the ecosystem is put in place, it continues as is. Periodicity rather than progressivity in the natural order. Yet that's hardly antithetical to divine design.

In OEC, there's some progressivity. Creation occurs in stages. God initiates one stage at a time. After that plays out, that's replaced by the next stage. That's in part because they can't all coexist. Some organisms requires a different biospheric conditions.

In OEC, natural history is analogous to human history. Just as you have distinctive periods in human history, with distinctive successive cultures, natural history is analogous. In OEC, man is phased in late in the curve, as the culmination of the process. After than you have the eschaton. It's like a transgenerational novel. If YEC is more cyclical, OEC is more epochal. In addition, although they diverge on the distant past, they converge on human history.

## Is mass extinction consistent with divine planning?

I'd like to revisit the common atheist contention that mass extinction is incompatible with divine planning.

i) For starters, suppose we approach this from the standpoint of theistic evolution. I'm decidedly antipathetic towards theistic evolution, but for the sake of argument, let's explore how a theistic evolutionist might field this objection. Consider this an a fortiori argument: if even theistic evolution can field this objection, how much more so a better position.

Suppose you're a theistic evolutionist of the atom-to-Adam variety. Adam is the goal. In order to reach the goal, God employs evolution as the means. It is therefore necessary to run through all the prior stages to get to the desired result.

Now, an atheist would complain that that's a terribly convoluted way to get there. Suppose, though, our theistic evolutionist would appeal to the principle of redundancy in nature. A maple tree produces many seeds. "Helicopters." Most of these fail to germinate. But that doesn't mean they're superfluous. To the contrary, producing so many seeds ups the chances that one or more will germinate.

Dandelion seed dispersal exemplifies the same principle. So does the ratio of sperm to fertilized ova. It's a shotgun approach. Throw enough buckshot at the target in the hopes of hitting the target. A theistic evolutionist might say all those offshoots on the the human evolutionary tree reflect the same principle.

**ii)** Now let's shift to old-earth creationism (a *minore ad maius*). It's routinely said that 99+% of all species went extinct. I don't know where that figure comes from. I believe it was popularized by David Raup. Given the fragmentary state of the fossil record, it's hard to see how they could extrapolate to an even approximate estimate. But suppose we play along with that for the sake of argument.

**iii)** I doubt hardly any scientist who believes mass extinction is incompatible with divine planning believes that all extant and extinct species could coexist. Presumably, they don't think it's possible for all those species to exist side-by-side, at the same time and place. For one thing, wouldn't the competition for food and resources be too great given the sheer density and diversity of species under that scenario?

In addition, species are adapted to their environment, but according to conventional geology, that has undergone great variations in the past. The atmosphere was different at different times. The ratio of oxygen to carbon dioxide and methane fluctuated widely or wildly, due to volcanic activity, photosynthesis, &c.

What is breathable air for one species might be toxic for another. Same thing with the chemistry of the ancient ocean.

On a related note, you have the complex symbiosis between fauna and flora. Certain kinds of animals need certain kinds of plants while certain kinds of plants need certain kinds of animals. Likewise, atmospheric conditions affect plants while plants affect atmospheric conditions. A changing

albedo changes conditions under which plants thrive, which, in turn, changes albedo.

Every species couldn't simultaneously exist with every other species, for the existence of a particular species depends on a suitable environment. And you don't simply have different species, but different ecosystems that host different species. They go together.

Suppose God desires a world that exemplifies the principle of plenitude. Maximal diversity. Maximal variation.

But if they can't exist all at once, then some species must be phased out before other species can be phased in. To make room for new species, indeed, to clear the decks for a new ecosystem, mass extinction may be necessary. So God instantiates new species diachronically rather than synchronically. Like elevator stage sets where the old set moves back while the new set moves up.

That scenario is consistent with either theistic evolution or old-earth creationism.

Young-earth creationism rejects the way in which the issue is framed. It attributes mass extinction to the flood and post-diluvial climate change.

## Are invertebrates living organisms?

This is a sequel to my earlier post:

<http://triablogue.blogspot.com/2016/01/nephesh-chayyah.html>

One argument I've run across to prove that invertebrates aren't "alive" in the Biblical sense is [Lev 17:11](#) (cf. [Gen 9:4](#); [Deut 12:23](#)), which says the "life of the flesh is in the blood." Since invertebrates don't have hemoglobin, they aren't living creatures in the Biblical sense. But there are several problems with this line of argument:

**i)** To say life is linked to blood is not to say life can't be linked to something other than blood. It's an affirmation, not a denial. It's perfectly consistent with other things on which life is dependent. Indeed, creationists hardly think blood is a sufficient condition for biological life.

There's no reason to think the statement involves an intended contrast between hemoglobin and hemolymph. The context concerns sacrificial land animals (or human murder victims). It's not meant to be a universal principle.

Take a statement like "life depends on water." That doesn't mean life only depends on water. It doesn't stand in contrast to "life depends on oxygen," or "life depends on sunshine."

Likewise, it's dubious to think the Pentateuch is using "blood" in the technical sense of hemoglobin, as if the concept depends on how modern medicine defines the composition of blood. That's terribly anachronistic.

**ii)** This interpretation would restrict [Gen 1:20-21](#) to the creation of aquatic vertebrates, leaving the creation of aquatic invertebrates unaccounted for. But surely this passage is meant to be an inclusive statement about the

creation of organisms for whom water is their natural element. Gen 1 subdivides creation according to their native habitat: air, land, water. And young-earth-creationists, of all people, should wish to affirm that Gen 1 was meant to cover, in broad categories, the creation of natural kinds on planet earth. To omit aquatic invertebrates would be a massive lacuna.

**iii)** What is the function of blood? It's a vital fluid. That's why blood loss can result in death.

But for invertebrates, hemolymph is functionally equivalent to hemoglobin. Both are vital fluids, without which the respective organisms will expire. Just as life is in the hemoglobin for vertebrates, life is in the hemolymph for (some) invertebrates.

## 9 AM, October 23, 4004 B.C.

John Lightfoot (1602-1675) notoriously dated the moment of creation to 9 AM, October 23, 4004 B.C. Which has given rise to the oft-quoted trope that "Closer than this, as a cautious scholar, the Vice-Chancellor of Cambridge University did not venture to commit himself."

Attempting to put a calendar date on the moment of creation is certainly mock-worthy. Even if young-earth creationism is true, it's not possible to date the origin of the world with anything near that degree of precision.

That said, if young-earth creationism is true, or old-earth creationism, for that matter, then some of God's creative fiat's are datable in principle, even if we necessarily lack the requisite information to do so in practice. On either view, God made some things by special creation. That being the case, you could, for instance, step into the proverbial time-machine and go back to the day when God made Adam. And you could even tell if it was morning, noonday, or afternoon by the angle of the sun. That's true for some other primeval events. In principle, these could be assigned calendar dates. The year, month, week, and day. Even time of day. Of course, any particular calendar is a human convention, and not a fact of nature. Yet you can measure time because there's a time to measure.

In principle, you could to step into the time-machine and travel back to any Biblical event, although the earth might not be too hospitable in primordial time. Like a submarine or spaceship, your time-machine might need an artificial environment. Indeed, it's a good exercise for Christian readers to mentally take a ride in the time-machine, then imagine what they'd see when they step out.





## Pictograms

I was asked to comment on this essay:

[https://www.academia.edu/29550502/A\\_Historical-Grammatical\\_and\\_Polemical\\_Reading\\_of\\_Genesis\\_1](https://www.academia.edu/29550502/A_Historical-Grammatical_and_Polemical_Reading_of_Genesis_1)

for the most part I find the questions posed by both YEC and OEC advocates to be somewhat puzzling, because both positions appear, to me at least, to be asking thoroughly modern questions of a completely ancient text. I simply cannot understand how anyone believes that the author of Genesis had the hydrologic cycle of the early earth in mind when writing about the separation of the waters above and the waters below in the 2nd millennia BCE.<sup>2</sup>

the best understanding of Genesis 1 is not as a scientific account of creation (a la YEC or OEC), nor is it a kind of demythologized and wholly non-historical plagiarism of other Ancient Near Eastern (ANE) creation myths (a la Delitzsche, Gunkel, or Enns); but rather, it is a purposeful, literary, and polemical taunting of the religious and cultural foes of the early Israelites as they were about to enter the land of Canaan in order to steer them toward religious fidelity to YHWH alone.

That's a strawman. Sure, Gen 1 is not a scientific description of cosmic and biological origins. It uses prescientific language. But that's beside the point. The point, rather, is whether this is a factual description of cosmic and biological origins. A scientific interpretation is a second-order exercise.

Proponents of FM [the Framework Model] will often point to some of the contradictions that arise from a strictly historicist chronological approach to the days, as well as other theological problems. For example, what sort of ethical problems arise if God created the earth, not just with the appearance of maturity, but with the illusion of having a history that it did not in fact have?<sup>25</sup>

While some will have problems with the appearance of maturity, anyone who believes that Adam could be created as mature should have no problem. The dilemma arises not in the appearance of maturity, but in the illusion of a false history. If the Earth did not exist for as long as science shows us that it does, then that would mean that God created the earth with craters from meteor impacts that never happened. It would be like creating Adam not only mature but with scars on his body with cuts that he never endured. That kind of pointless deception seems to provide a real ethical dilemma.

**i)** But that's not an *exegetical* objection. What's the evidence that the narrator or the original audience would regard that as posing a "real ethical dilemma"?

**ii)** I don't see this as any more of an ethical dilemma than "the illusion of a false history" in a period stage set or period CGI. A historical movie about ancient Rome or the Wild West breaks in at a fairly arbitrary point within the ongoing history of the world. But that's when the plot begins. To be accurate, it has a setting and artifacts that antedate the plot, which fall outside the timeframe of the plot. It's like the world begins at that moment, with the opening scene of the movie.

In addition, how can there be three literal 24 hour earth days (one complete rotation in reference to the sun) when God does not create the sun and moon until day 4, expressly with the purpose of marking out days and "to separate day from night" (1:14)?<sup>26</sup>

I think that's a stronger objection to the YEC reading.

The first thing that Kline et al. would like to draw our attention to is the genre of Genesis 1. If Genesis 1 is a straightforward account of history (we will argue shortly that it is not), then it may be placed alongside the hard sciences and ask the question of how the cosmos materially came into being. That is, Genesis 1 would be, on this view, the kind of literature that asks the same questions as the astronomy or geology text books. However, if Genesis 1 is not strictly historical narrative, then it would be placed within the social sciences, because its primary concern would be with who was involved.

Same strawman I noted before.

We can now see why Kline and Waltke describe the structure as following this sort of pattern, where an sphere is made to be inhabitable, and then it becomes inhabited...Kline and Waltke both show us the relationships between the parallel triads of days. The first three days show the creation and preparation of kingdoms/spheres as a kind of environment, and in the following three days, populating those environments with the proper inhabitants of those environments. This means that days 1-3 are dealing directly with forming what was formless in 14 1:1—no longer is the cosmos formless but now it has distinct form and structure.

God has now made an orderly cosmos, fit for populations of living beings to live in, which also means that days 4-6 are meant to show that the heavens and earth are no longer void– they are no longer empty, but rather are inhabited. Days 1-6 show that YHWH has acted to make creation habitable and to populate the created order with creatures according to their spheres.

**i)** There's a grain of truth to that, but that's consistent with a YEC reading, where it's natural to create the sky before birds, bodies of water before fish, dry land before land animals.

**ii)** There there's the problem with his matching scheme. According to his own representation, the sky ("waters above") on day 2 has fish and fowl on day 5 as its counterpart while seas on day 3 parallel has man and animals on day 6 as its counterpart. But how are they parallel? flying fish? Likewise, man and land animals don't correspond to marine life.

This means that FM advocates, like myself, will often just sit on the sidelines of YEC, OEC, and evolutionary debates baffled as to what is unfolding in front of us.

That's pretty simplistic. There's far more to the creation/evolution debate than whether Gen 1 is chronological.

The strongest example is seen in the connection between Genesis 1 and the Memphis Shabaka Stone. This Memphite text was most likely produced during the New Kingdom period (16th–11th C. BCE.) and would have been likely prior, but possibly concurrent with the composition of Genesis. 36 The similarities can

be catalogued as follows...This chart shows us that while there are some slight modifications to the overall order, there was plainly a strong familiarity of the Shabaka Stone, or at least with the mythology it presented, that was present during the time of the composition of Genesis 1.

**i)** He has a diagram of alleged parallels arranged in two columns, side-by-side. However, I'm dubious about that comparison. To begin with, the text of that stele is damaged.

**ii)** In addition, although I'm no Egyptologist, it's my impression that a hieroglyphic text, consisting of pictograms, is far more equivocal and open-textured than a verbal text, consisting of linguistic propositions. Gen 1 is already verbalized whereas a hieroglyphic text but first be translated into a verbal text. So there's a prior interpretive step. A reader of a hieroglyphic text must turn that into words before comparison is possible. For instance:

Hieroglyphics is an ancient Egyptian script and a premier example of a medium that combines word and image to convey meaning. Hieroglyphic script constantly switches between icon and symbol to complicate the word/image relationship. At times, characters function as icons that represent the objects they depict. At other times, characters function as arbitrary signs, requiring the reader to assign phonetic value. The amalgamation of word and image not only makes the translation of hieroglyphics difficult...

Logograms can represent not only the exact object they depict, but also extensions of that image. For example, the logogram of a sun may represent the actual object of the sun, or the concept of day. The

drawbacks of a pictorial writing system quickly become apparent as iconic signs fail to represent complex concepts. Logograms are sometimes used as arbitrary characters with no correlation to the object they depict. Called phonograms, these arbitrary signs convey meaning phonetically. For example, you can convert the visual images of "bee" and "leaf" into their phonetic value to create a final visual image of the word "belief." Hieroglyphics combine phonograms and logograms to complicate the word/image relationship. In addition, hieroglyphic script uses determinatives to assist in translation. Located at the end of words, determinatives help to clarify remnants of ambiguity. For example, an icon of a male or female may be used to disambiguate names. Hieroglyphic script is a collage of logograms, phonograms and determinatives that operate under complex grammatical principles. Its unique combination of word and image has deterred translation for over a thousand years and has contributed to a mysterious veil that continues to cover this medium.

<https://lucian.uchicago.edu/blogs/mediatheory/keywords/hieroglyphics/>

Egyptian hieroglyphs were pictograms, illustrative of objects and ideas, rather than abstract symbols. These pictograms could be further classified as phonograms, representing consonantal phonemes [20], or ideograms (also called logograms) in which the pictogram depicted a concept [21]. Additionally, there were also a number of signs (determinatives) used to clarify the meaning of words composed partially or primarily of phonograms [22]. Many hieroglyphs could serve more than one of these functions [23], although in practice, only a few were regularly employed in all capacities

[24]. Even the fraction of hieroglyphic script that is phonemically based is not comparable to alphabetic systems in which each letter roughly corresponds to one phoneme. In Egyptian hieroglyphs, a single phonogram could represent one, two, or three consonants [25]. Since vowels were not represented in writing, the same phonogram could be used to represent words (or parts of words) that contained different vowels; this is comparable to using a single sign to represent the English words "mess", "miss", "moss" and "mice". Because of this ambiguity, the ideographic use of hieroglyphs was maintained throughout Egyptian history

<http://cujah.org/past-volumes/volume-iv/volume-iv-essay-11/>

Back to the essay:

Another thematic connection is the role of supernatural light in the comparative narratives. In the Hermopolis tradition, after a long period of nearly infinite darkness, the god Atum emerged out of primordial waters (Nun) and, being a sun deity, manifested himself as pure light—before the creation of the sun.<sup>42</sup> This fueled the Egyptian myth that the supernatural light from these primordial gods is what dispelled the infinite darkness.<sup>43</sup> This abnormality in the existence of light prior to the creation of the sun likely explains the long debated nature of the light in the first few days of creation prior to the creation of the luminaries on day four in the Genesis account. However, the author of Genesis is careful not to attribute the light to the creation of a deity as in the Egyptian myths, but rather that it was created by divine fiat, that is, by a divine command, "Let there be light."



This meant that the author was keen to show that, unlike Rê-Atum, YHWH was not brought into existence, and did not result in an act of self-creation, but was himself preexistent and was responsible for bring into being even the first light, and that light itself not divine. Johnston notes that this "is a case of the Hebrew author indulging in a bit of one-upmanship. YHWH is superior to Rê/Rê-Atum, Egypt's god of light."<sup>44</sup> That "one-upmanship" just is the polemical intent described throughout this present paper.

But doesn't the Framework Model, if correct, already explain that "abnormality"? On that view, the paired days are not two separate days. So the "Hermopolis tradition", if correct, presents an alternative explanation for the same phenomenon. Either one or the other is redundant.

## Old-earth creationism

A number of professing believers regard youth-earth creationism as the least defensible option. Of those, a large number of evangelicals prefer old-earth creationism. It has the advantage, in their view, of doing greater justice to Scripture than theistic evolution, but greater justice to science than YEC. (Catholics are more open to theistic evolution.)

For them, YEC imposes an excessive apologetic burden on the Christian. It has too much to defend. Too much to explain away. It has to wage war on too many different fronts.

The only reason anyone would subscribe to YEC is for exegetical reasons alone—so they say.

Incidentally, even if that were the case, there's nothing inherently wrong with that position. We might well have better reason to believe the Bible rather than some scientific theory du jour.

But one question we need to ask is whether OEC represents a stable mediating position. This is not simply an issue of accepting the same basic sequence as YEC, but spacing it out or extending the timeline.

If you concede the evidence for the antiquity of the earth (assuming there is such evidence), then this evidence is bound up with a certain sequence of events. On this view, the earth developed in certain stages. And evidence for the antiquity of the earth dovetails with evidence for the

emergence and diversification of life.

It's difficult to isolate evidence for the antiquity of the earth from evidence for the origin of life and emergence of species. The chronology and biology tend to move in tandem.

And, indeed, OEC generally concedes the evolutionary sequence of events. But, in that case, it's hard to separate the evidence for an evolutionary *sequence* from the evidence for an evolutionary *process*. Once you buy into the initial assumptions, it's difficult to see how OEC can maintain a buffer between its own position and theistic evolution.

Or course, OEC can try to distinguish between microevolution and macroevolution. However, that move also available to YEC.

There are also some professing believers who subscribe to theistic evolution. Is that a more defensible position?

One problem with theistic evolution is that if you concede the evidence for macroevolution (assuming there is any), then there's a random quality to the fossil record that doesn't look like it's guided by a wise and benevolent deity. The "kill curve" seems to be pretty indifferent to which species survive and which go extinct. As one writer put it, "Such a model of fractal continuity in extinction, triggered by sudden impact at all scales and levels, might be conceptualized as a 'field of bullets' (Raup, 1991a)—with agents of destruction raining from the sky and death as a random consequence of residence in the wrong place at the wrong time," S. Gould, **THE STRUCTURE OF EVOLUTIONARY**

## **THEORY, 1324.**

In addition, agreement with macroevolution is only to your apologetic advantage if, in fact, there is compelling evidence for macroevolution, with no serious evidence to the contrary. If, on the other hand, macroevolution is deeply problematic, then the theistic evolutionist is in danger of being swamped by the dead weight of macroevolution. In that case, his position is more vulnerable rather than less so.

The fact is that every option along the continuum, from YEC through OEC and theistic evolution to naturalistic evolution has some unique challenges. I don't see that any one position is more *prima facie* defensible than another.

That being the case, it's logical for the Christian to choose the option with the most Scriptural support, and defend it on whatever other grounds are available.

## OEC interpretations

**i)** One of the challenges for old-earth creationism is to specify what happened in Gen 1. Young-earth creationism has a straightforward position: everything happened in the way it's described.

But for OEC, there's some distinction between what it describes and what it represents. And depending on the version of OEC, there are varying degrees of correspondence. For instance, some versions are sequential (day/age theory; analogical days) while others are nonsequential (framework hypothesis; revelatory days; cosmic temple interpretation).

Part of the vagueness is due to the fact that OEC tends to treat Gen 1 as a thumbnail sketch whose details are pencilled in by astronomy and geology. But it balks at evolutionary biology.

**ii)** One of the internal problems with the framework hypothesis is that it grafts a nonsequential arrangement onto a sequential arrangement. On the one hand, it views the days as a week of days. A 7-day week, based on a 6-day workweek, with one day off (the Sabbath). That's sequential, though it regards that as figurative schema.

On the other hand, it views the interrelationship of the days as nonsequential: 1 is to 4 as 2 is to 5 and 3 is to 6. The days match up in 3 paired days. Three sets of two days, in a staggered collation.

Now one could be right, or both could be wrong, but they don't mesh. And that's even before you get to the baroque

embellishments of late Kline's upper/lower register cosmology.

**iii)** Let's turn to the cosmic temple interpretation. It's striking that, to my knowledge, proponents of this view, like John Walton, don't attempt to work it out systematically. By that I mean, if Gen 1 uses that architectural metaphor, then it's proper to ask what events correspond to what features of a temple. How does Gen 1 parallel the construction process of a temple? What items in Gen 1 correspond to parts of the temple? Items like a floor, walls, roof, doors, windows, interior furnishings.

Let's give it a try:

Day 1. God creates light. A builder must have light to see by. (Anthropomorphic.)

Day 2. The sky corresponds to the ceiling or roof.

Day 3. The dry land corresponds to the floor or foundation. Maybe hills and mountains correspond to walls or pillars. Flora are part of the interior decor or furnishings.

Day 4. Stellar luminaries correspond to windows which admit light to illuminate the enclosed interior.

Day 5. Fish and birds represent the interior decor or furniture.

Day 6. Land animals supply additional furniture. Man is like a statue of deity in the temple. The imago Dei.

**a)** There are, of course, some incongruities in this sketch. The order in which things happen doesn't reflect the order in which a temple is erected. Most obviously, you don't

install the roof or ceiling before you lay the foundation or raise walls. So the order is backwards in that respect.

**b)** If flora correspond to decor or furniture, wouldn't a builder wait until the exterior was up? Perhaps, though, we could salvage that by saying they are like murals. Once the walls are in place, they are decorated. The temple had floral decorations.

I suppose you could say bodies of water correspond to the basin in the tabernacle or temple. Fish and birds are a bit of a stretch.

There's also the enigmatic relationship between light on day 1 and lights on day 4. Part of the explanation is that you can't put lights in the sky before you make the sky. In that respect, day 2 must precede day 4. Likewise, it's the sky as seen in relation to the land, from the perspective of a ground-based observer. In that respect, day 2 must precede day 3, while day 3 must precede day 4—inasmuch as you can't see lights in the sky from earth until the earth (i.e. dry land) is made.

Put another way, there's a distinction between light without land supplying the frame of reference (day 1), and light with land supplying a frame of reference (day 3). If the land is submerged, an observer can't see light overhead, because he has nowhere to stand. And that analysis of day 4 is true whether or not we endorse the temple interpretation.

At the same time, I think this exposes some limitations of the cosmic temple interpretation. There's a lot in Gen 1 that doesn't correspond to a temple. Even if Gen 1 contains some temple motifs, the narrative doesn't use that as an extended metaphor to model creation.

**iii)** Another possibility is if the arrangement is taxonomical rather than chronological. Based on different kinds of creatures. The day/night alternation is a way of grouping and demarcating different kinds of creatures. God creates one type of creature, then another type of creature. Or God creates several different kinds at a time. God creates groups of creatures.

Even if God did this all at once, it can't be stated all at once. The narrator can only describe one thing at a time. On that interpretation, this isn't just an account of who made it, but what was made.

Suppose, as an analytical exercise, we mentally we strip away the numbered 7-day schema. That's like muting the soundtrack on a movie to study the flow of images, as well as the transition from one scene to another. A soundtrack can impose a sense of continuity.

Even without the day/night refrain, the sequence in Gen 1 still has a functional or teleological progression. Certain things must be in place before other things can be put in place. You can't have fish without bodies of water. You can't have land animals without dry land. You can't have trees without land. You can't have birds without a sky to fly in or trees to nest in or perch on. It's not just the explicit temporal markers (days 1-7) that give it a forward motion.

So the arrangement isn't merely an abstract classification scheme by natural kinds. There's temporal succession. Mind you, OEC, as I understand it, doesn't deny that some things must happen first, as preconditions for other things happening.



## OEC chronology

**1.** As I've said on more than one occasion, I think it's useful to explore and develop both YEC and OEC interpretations of Genesis. Recently I discussed YEC, now I'll turn to OEC.

To my knowledge, OEC chronology is less developed than YEC chronology, in the sense that there's less effort to place Gen 1-11 in a general timeline. Biblical chronologies usually begin with Abraham, c. 2000 BC.

**2.** The major events in Gen 1-11 are:

**i)** Creation of the world (Gen 1:1-2:3).

**ii)** Creation of the Garden (Gen 2).

**iii)** The Fall (Gen 3)

**iv)** Ramp up to the Flood (Gen 4-5).

**v)** The Flood (Gen 6-9).

**vii)** Tower of Babel

Where do those happen on an OEC timeline?

**3.** OEC accepts conventional astronomical and geological dates.

Like YEC, OEC accepts fiat creation of natural kinds, including the special creation of Adam and Eve.

On OEC, as I understand it, God introduces a natural kind into the ecosystem by fiat creation. Through adaptation, the original nature kind produces a number of varieties.

Natural kinds are phased in in a staggered fashion. For instance, you have the age of the dinosaurs. That includes a corresponding climate and vegetation.

Then you have the age of birds and mammals. That sort of thing.

Unlike YEC, OEC doesn't have a particular stake in the order of their appearance. In principle, plants could antedate animals. Marine organisms could antedate land animals.

BTW, this isn't just a face-saving conjecture. Intelligent design theorists contend that, as a matter of fact, the fossil record does show the abrupt appearance of organisms with well-developed, novel body plans that have no precursors. Likewise, they argue that there is no incremental pathway for some organisms to develop from precursors.

**4.** So when does human history begin? I suppose the answer depends in part on our ability to date and distinguish human fossil remains from extinct apes. Darwinians use comparative anatomy. A problem with that frame of reference is that we can't gauge the mental abilities of fossils. We need living specimens.

One possible way to demarcate humans from extinct primates is the presence of artifacts which unmistakably indicate human intelligence, viz. artwork, musical instruments, weapons, symbolic markings, domestic construction, burial customs.

The earliest datable artifacts would give us a rough terminus ad quo. Presumably, humans antedate the earliest artifacts we happen to discover. So the terminus ad quo would be however much earlier. But that's a rough terminus ad quo.

**5.** On that chronological spread, the flood might have happened tens of thousands of years ago.

**6.** Scholars sometimes attempt to correlate Gen 4:17-22 with archeological periods, viz. neolithic, copper age, bronze age, metallurgy, &c.

However, that involves some dubious assumptions:

<http://triablogue.blogspot.com/2015/03/prediluvian-history.html>

By the same token, the Tower of Babel is typically related to Mesopotamian ziggurats. But while that's possible, we need to make allowance for similar structures to develop independently. For instance, do Egyptians pyramids, Mesoamerican pyramids, and Mesopotamian ziggurats reflect cultural diffusion? Do they go back to a common point of origin? Or do these represent independent developments?

Whether we should expect to find remnants of the Tower of Babel depends on the date, building materials, erosion, and recycling materials.

**7.** Some young-earth creationists believe the genealogies in Gen 5 & 11 are closed, while others believe the genealogies

are open. The former think the universe is about 6000 years old while the latter think the universe is about 10,000 old.

The question is whether an OEC timeline stretches the chronology of Gen 1-11 beyond the breaking point.

**i)** Except for partial preterists, young-earth creationists allow for great gaps in long-range prophecy.

**ii)** If the basic purpose of the genealogies in Gen 5 & 11 is to trace a lineage from Adam to Abraham, then I don't think it much matters how far apart the links are. The point is that only Abraham has that particular set of ancestors. Doesn't matter how distant they are in relation to each other so long as they converge on Abraham. You just need a sample that singles out Abraham.

**iii)** If Gen 1-11 is only concerned with narrating the big events, the most theologically significant events or turning-points leading up to Abraham, then that would be consistent with vast intervals in-between. The Bible is typically severely selective in what it covers.

## The lion and the lamb

**i)** Isa 11:6-9 & Isa 65:25 are YEC prooftexts: in particular, belief that there was no antelapsarian carnivory. No antelapsarian predation, parasitism, disease, &c.

**ii)** One alternative interpretation is that Isaiah's golden age passages are political allegories for the cessation of warfare. Harmony between predator and prey symbolizes the outbreak of universal peace (e.g. Childs).

There may be grain of truth to that interpretation. Certainly the larger context includes the end of warfare.

**iii)** At the same time, the imagery suggests a restoration of Edenic conditions, and that's consistent with the political interpretation. The end of political violence doesn't rule out a literally Edenic interpretation, since there was no warfare in Eden.

**iv)** One complication is that metaphor and literality aren't necessarily opposites, but can range along a continuum. Indeed, prosaic discourse contains many dead metaphors.

So it's possible for Isaiah to predict something like Eden redux even if the picturesque imagery is somewhat figurative. Was there no carnivory in Eden? Presumably, the animals weren't dangerous to Adam and Eve. That doesn't necessarily mean they weren't dangerous to each other. They might be tame animals, that are safe around humans, but still predatory or violent. For instance, domestic dogs and cats are still predatory, even though they are docile around their owners.

**v)** We might also consider how realistic a particular interpretation is. I mean "realistic", taking biblical supernaturalism into account.

Some wild animals don't seem to be tamable. I don't think you can tame sharks, crocodiles, venomous snakes, Komodo dragons, &c. So it's hard to see how all wild animals could be safe around humans, even if some might be.

Perhaps, then, there'd be a degree of providential protection. For that matter, even if Adam, Eve and their posterity were never banished from the Garden, they'd still need to take reasonable precautions. The world is not a theme park. There are natural hazards.

## Are we primates?

**i)** A prima facie evidence for human evolution is the fact that some apes/monkeys have a humanoid appearance. So it may seem like special pleading for Christians to deny the connection.

**ii)** The comparison suffers from sample selection bias. For instance, baboons and mandrills look decidedly inhuman.

**iii)** Gen 1-2 indicates that humans do have a basic affinity with the animal world. Up to a point, comparisons aren't contrary to Scripture.

**iv)** However, comparative anatomy isn't the only way or best way to approach the issue. If God designed human beings to have the abilities that Scripture ascribes to human beings, could we have a fundamentally different body plan, or is this roughly the kind of body plan we have to have?

**v)** Bipedalism frees up the hands. That enables us to have hands designed for manual dexterity rather than locomotion or weaponry.

**vi)** Forward-facing eyes are necessary for eye-hand coordination. They go together.

**vii)** We have flat faces because our tongues, lips, dentation, &c., are designed for speech. A fringe benefit is kissing!

**viii)** By contrast, animals use their snouts to reach/grasp food. In humans, our hands replace that function.

**ix)** In predators, the muzzle is a weapon. The jaws are serrated knives. But that's a quadruped design. In humans,

we use hands and reason to make tools, shelter, weapons.

**x)** Likewise, snouts enhance the sense of smell. In humans, by contrast, the visual sense is dominant.

**xi)** Our flat, fairly hairless faces contribute to facial communication. We have expressive faces. A natural kind of sign language.

**xii)** It's not clear to me how well a head with a muzzle and human-sized cranium is suited to an upright posture and bipedal locomotion. Flat-faces and bipedalism may be allometrically interrelated to facilitate stability and balance. Consider horror flicks with humanoid werewolves (e.g. *The Howling, Dog Soldiers*). They look pretty ungainly.

**xiii)** Bipedal design facilitates a variety of sex positions. Face-to-face intercourse promotes emotional intimacy.

**xiv)** Manual dexterity and hairless bodies enhance the sense of touch, which promotes social bonding (e.g. stroking, caressing, holding hands). Likewise, hairless bodies make wading, bathing, and swimming more enjoyable.

**xv)** Upright posture and manual dexterity facilitate hugging, holding children, and riding piggyback—which promote social bonding.

**xvi)** Hairless bodies make sense if we originated in a hot climate like the Middle East.

**xvii)** Permanent breasts contribute to sex appeal, which promotes social bonding.



In general, the human body plan is pretty much what we'd expect if the Biblical doctrine of man's special creation is true. If we originated in the Middle East.

## Why do men have nipples?

**i)** Darwinians sometimes taunt creationists with the question: Why do men have nipples? They seem to think that's inconsistent with creationism. Perhaps they think Christians are embarrassed by discussing nipples.

**ii)** To begin with, it's not as if there's a good evolutionary explanation. Male nipples have no survival value.

And it makes no sense to say male nipples are vestigial organs. Even on evolutionary grounds, it's not as though men evolved from mammals that were exclusively female. Even from an evolutionary standpoint, mammals were always sexually differentiated. For that matter, so are reptiles, from which mammals allegedly evolved.

**iii)** To my knowledge, the reason men have nipples is because men and women share the same basic underlying design. Our bodies have most things in common. Engineering is conservative.

Sexual differentiation is due to sex chromosomes and male or female hormones. But that leaves many underlying structures intact.

Even in sexually mature adults, if you administer male sex hormones to women or female sex hormones to men, they develop some characteristics of the opposite sex.

**iv)** Sexual arousal is based, in part, on touch. Because male nipples have nerves, that's an "erogenous zone." So it's not useless.

**v)** It's sometimes said that all humans begin as female in the womb, but that's simplistic. The male or female DNA is present from the get-go.

**vi)** Finally, lactation is a remarkable process. We think of animals as food. And trees produce food. But for animals to produce food is rather remarkable, if you think about it. Women have a whole little factory for producing a vital food stuff.

## Ecological equilibrium

A critic might object that creationism (be it old-earth or young-earth) is ad hoc in this respect: if a particular ability confers a survival advantage, why does an organism ever lose that ability? Conversely, if an organism has an adaptive potential that confers a survival advantage, why does that ever remain undeveloped?

Of course, if an organism is in an environment where the ability ceases to be beneficial (e.g. eyesight in caves), then it's understandable why it might become vestigial. But what about situations where it will still be advantageous, yet that ability is lost?

The problem with that line of objection is that it treats species in isolation. But the frame of reference is what is good for the ecosystem, and not what's optimal for any particular species. The goal is to maintain the equilibrium of the ecosystem.

Predators should succeed often enough to maintain replacement rate. Prey should elude predators and propagate often enough to maintain replacement rate. Likewise, if herbivores are too competitive, they will overgraze and thereby damage the ecosystem. It's not just a relationship between predators and prey, but fauna and flora. Plants and herbivores.

So we're dealing with a dynamic system that has to be flexible. Adjust to changing variables. At one time or place, predators may need to be more proficient, while at another time or place they may need to be less proficient, to maintain the balance of nature. It's important to have

potential abilities. Sometimes those need to be developed. At other times they need to atrophy.

I'm not a biologist or zoologist, but that's my layman's explanation.

## From mere Christianity to mere mythology

<https://www.reasonablefaith.org/writings/question-answer/hermeneutical-vs-scientific-young-earth-creationism>

I find it crucial to distinguish between Young Earth Creationism (YEC) as a hermeneutical hypothesis and as a scientific hypothesis. The hermeneutical hypothesis concerns the correct interpretation of the early chapters of Genesis. Do these passages affirm, either explicitly or implicitly, that the universe was created in the recent past (say, 10,000-20,000 years ago)? The scientific hypothesis concerns the empirical adequacy of the view that the universe is so young. Is the scientific evidence plausibly explained by the hypothesis that the universe originated only 10,000-20,000 years ago?

That's a necessary distinction.

Now I have long ago taken a stand on YEC as a scientific hypothesis. My defense of the kalām cosmological argument on the basis of Big Bang cosmology presupposes that the universe is more than 13 billion years old.

I find that odd. Seems to me the kalām cosmological argument is an a priori, metaphysical argument about the possibility (or not) of an actual temporal infinite, rather than an a posteriori argument based on astrophysics and cosmology.

Indeed, I think that YEC as a scientific hypothesis is quite hopeless. But YEC as a hermeneutical hypothesis is quite another matter. I want to approach the text with an open mind, despite the terrifying prospect that YEC might actually be correct as a hermeneutical hypothesis. In that case, we would face some very hard choices. Given YEC's failure as a scientific hypothesis, we should have to conclude that the Bible teaches scientific error and therefore revise our doctrine of inspiration to accommodate this fact. That is a route one would prefer not to take.

**i)** I wonder what YEC scientists Craig has studied.

**ii)** He thinks that if push comes to shove, the scientific reconstruction of the distant past is more reliable than divine revelation.

**iii)** It's true that YEC chronology is up against many prima facie lines of evidence to the contrary. However, the deeper issue is the assumption that there's an unbroken continuum between the present and the past so that we can reconstruct the distant past by linear extrapolation from the present. Up to a point that's reasonable. Nature is like a machine. You can mentally run the process backwards.

There are, however, agents who can intervene to produce an effect that's discontinuous with antecedent conditions. Take a miraculous healing. Since that outcome can't be predicted from the status quo ante, because that outcome wasn't caused by the status quo ante, it follows, by the same token, that the status quo ante can't be retrodicted from the outcome. Supernatural agents throw a wild card into our projections and retroactions. Although we shouldn't invoke that willy-nilly, it's something we must make allowance for.

**iv)** The challenge has less to do with the amount of time than an evolutionary narrative or evolutionary reading of the natural record. However, that's counterbalanced by the challenges confronting naturalistic evolution.

So I'm very interested in exploring the suggestion of some commentators that the primaeval history of Genesis 1-11 is mytho-historical, a sort of fusion of history and mythology that should not be interpreted literally.

**i)** The same supernaturalism that pervades Gen 1-11 likewise pervades the patriarchal narratives, the Book of Exodus, Numbers, &c. There's no bright line between Gen 1-11 and the rest of the Pentateuch, Historical Books, Gospels, Acts. A "mytho-historical" reading will have to be extended to Scripture in general.

**ii)** There are non-YEC interpretations of Gen 1-11 that don't appeal to a fusion of mythology and history. Craig's fallback is a false dichotomy.



## Clock management

I'll comment on this:

<https://www.premierchristianity.com/Blog/10-questions-to-ask-a-young-earth-creationist>

Here are 10 questions I'd like to ask of young earthers:

1. Can we start by agreeing that the Gospel is more about the Rock of Ages than the ages of rocks?

The centre of the Gospel is the crucified and risen Christ, and everything in the Old Testament leads up to that. Jesus, and not the age of my rock collection, is the heart of the Christian faith.

Cutesy but disingenuous—as is clear from the next question (#2).

### **2. Does the age of the earth – or its shape – matter to a Christian?**

For a Christian, the earth could be 10,000, 10,000,000 or 10,000,000,000 years old and it does not matter which, as the Bible is not clear on the matter. But to go against the proven results of science is simply folly. For 250 years, geologists have only found evidence for an ancient earth and none for a young earth.

It matters if the Bible is false. It matters for God to be a God who speaks. Who speaks to and through people. If the Bible is false, then at a fundamental level we never hear from God.

### **3. Does the Bible teach that the earth is spherical?**

Young earth creationists will often argue there is science in the Bible because the biblical writers were inspired to teach that, contrary to the wisdom of their time, the earth was spherical.

Some claim Isaiah 40:22 points to the earth being spherical. But the translations rightly say a "circle" not a sphere. Neither is it possible to read a spherical earth into Genesis 1:6-8. This is because the Bible is not interested in science. Galileo said "The Bible tells us how to go to heaven and not how the heavens go."

**i)** It may well be the case that Scripture is silent or neutral on the sphericity of the earth.

**ii)** The Bible is concerned with origins, as well as the future.

**iii)** Something can be prescientific but still be factually accurate. For instance, Bible writers describe lunar and solar eclipses as well as meteor showers. Although ancient people didn't have an astronomically accurate theory of these phenomena, they could make accurate observations. And scientific theorizing is parasitic on empirical observation.

### **4. How could people in 1000 BC grasp the idea of geological time?**

Geologists gradually began to see that the earth was older than Ussher's age of 4004BC after 1680. Looking at the rocks in Nant Peris in Snowdonia the Rev John

Ray, a great botanist, began to wonder if the earth was older than Ussher had suggested. He was tentative and rather sceptical, but was asking the right questions. By 1800, most thought the age of the earth was in millions and that included most Christians.

In the 20th Century, radiometric age dating showed the earth is 4.6 billion years old. That is based on the physics of radioactivity and has nothing to do with evolution. If the dates are wrong then so is all physics.

No, that wouldn't mean all physics is wrong. Rather, it would mean physics is wrong about origins because God initiated the universe at a later stage in the cycle. Take clock management in football, where they stop and restart the clock. So there's the official time it took to play the game in contrast to the actual time elapsed. Timeout may give a team a chance to regroup. Things are still happening while the clock is frozen. So there's a difference between game time and real time. The game is actually longer than what the clock says. If you glance at your watch, you can see the difference. They aren't synchronized.

## **5. Does the Bible always speak in a direct literal way?**

The biblical writers use language in many different ways. There's narrative, poetry, simile, metaphor and more. At times narrative, even when historical, may contain poetry. Thus Genesis 1 appears to be narrative at first sight but then each day is written in a poetic-like form; "Then God said, 'Let there be..." followed by "And God saw that .... Was good" with a refrain "And there was evening and morning..." Just because poetry is used does not mean it is "untrue". Psalm 23 is pure

poetry using great imagery to bring out the love of God.

It's true that Gen 1 is formulaic.

### **6. Why do you assume that animal death only began to happen after Adam ate the fruit?**

The theory goes that because no animals died before the fall, therefore the earth must be young. But Genesis 3 actually says nothing about animals and whether they only died after the fall. This has been read into Genesis. It comes from John Milton's epic poem Paradise Lost and should not be part of Christian belief.

I agree with that.

### **7. Is young earth creationism the traditional Christian view?**

The early Christians, right up to 1800, were not clear on the age of the earth as that depended on how literal they thought Genesis was and they had no geological evidence to guide them. Later, as geology began to show an old earth, most Christians accepted that as it did not affect Christian teaching. From 1850 onwards few Christians were young earth and it only came back in for some in the 1960s, with the coming of young earth creationism in Morris and Whitcomb's The Genesis Flood.

To my knowledge, Jews and Christians traditionally believed the world was a few thousand years old, although there were disagreements about whether the days were calendar days or instantaneous.

## **8. Were early geologists opposed to Christianity and did they use their geology to undermine belief?**

I once did a field trip with an atheist geologist and as we chatted he said that belief in an ancient earth leads to atheism. We argued and got nowhere! Yet when you read a history of geology you soon find many geologists were Christians, from Steno in 1680 up until today.

True.

## **9. Did Christians oppose old earth geology in the past?**

From my superficial reading of science books and on religion and science I thought Christians opposed geology. But I changed my mind as I did a historical study. Over several decades I have researched this question and read old theology books, journals, books by the hundred. I had to change my mind. I found that in the 17th Century Christians believed in a youngish earth as there was little geology to guide them. As geology was studied more in the 18th century more and more educated Christians realised the earth was ancient. Most Christians, often after study, concluded the earth was ancient. Very few Christians opposed geology for the last few centuries.

From what I've read, that's right.

## **10. Why do you claim that so many geologists in the last 350 years got their geology wrong?**

I don't know how many geologists have studied rocks and the strata in the last 350 years. Today there are 12,000 fellows of the Geological society of London and so there must be over 100,000 qualified geologists in the world. And all except for 20-30 "young earth" geologists accept the vast age of the earth.

Undoubtedly geologists make mistakes today and did so in the past. I can give a dozen examples from Charles Darwin alone. But his and other geologists' mistakes are minor. So far no young earther has given an argument against geological time which has any validity.

**i)** In terms of empirical evidence, there's the question of soft tissue in dinosaur fossils.

**ii)** However, these objections miss the point. One can stipulate to all the data. But that's a bit naive because the question is what lies behind the data. Reality is dualistic: mind and matter. The physical world operates like a machine. Uniform cause and effect when nature runs its course. But reality includes agents who can manipulate nature or circumvent nature.

**iii)** In addition, there's the question of where in the cycle God begins the process. Take a director who makes a Western. The plot must begin during a particular point in the history of the Old West. And the starting-point is somewhat arbitrary. The plot could begin a year sooner or later. Or five years or ten years. It comes down to what kind of story the director wants to tell.

That's a problem for historians. To make the study of history manageable, they subdivide history into periods. But that's arbitrary. When do the Middle Ages begin? Or the

Renaissance? Or the Enlightenment? Or WWI? When does the Roman Empire fall? Or the Ottoman empire? It's all a continuum.

It may be that cosmic time is the way it seems to be, if you begin with the present and run things in reverse. Or it may be that God is like a cinematographer who begins the story at a certain point in history, when things are already underway. The story has an implicit backstory, yet there's actually nothing prior to opening scene.

**iii)** It's not that astronomers, geologists, and cosmologists have colluded to contradict biblical chronology—although some of them are misotheists. Ironically, you have scientists who don't take the Bible literally but they take nature literally. They're like spectators in the stands who say the duration of the game must match the clock on the scoreboard. But in football, there are two clocks: there's the official game clock, and then there's all the unofficial clocks and watches. These two clocks give different readings. They both correspond to the game, but they don't correspond to each other.

In a sense the game clock is wrong, but it has a different function than giving the duration of the game. It has a role inside the game, not outside the game. That may be analogous to natural chronometers.

That's why I find conventional dating schemes reasonable but superficial and inconclusive. Could be right—could be wrong. Depends on the frame of reference.

## The Quest

Recently I read *The Quest: Exploring Creation's Hardest Problems* (Compass Classroom 2018), by Dr. Todd Wood. He's an interesting thinker. Something of a maverick. One of the brightest minds in young-earth creationism. In a way he's too smart for his own good, which will get you into trouble. I don't mean that as a putdown. Independent thinkers don't make good team-players.

It can take heroic dedication and personal sacrifice to be a creation scientist. While there's a strong theological constituency for that position, it doesn't translate into comparable financial patronage. Unless you're one of the lucky ones who lands a job at a fundamentalist university or creationist organization, it's hard to eke out a living—as Wood and Kurt Wise both know from personal experience.

Years ago I corresponded with Walt Brown, which made me aware of rival factions within young-earth creationism. That also makes it harder to have a career as a creation scientist. And not just young-earth creationism. Look what William Dembski was subjected to.

In chap. 1, Wood discusses José de Acosta, a 16C Spanish Jesuit missionary to Latin American who struggled to reconcile the native fauna with a global flood.

Summarizing Barbour, he mentions four divergent models on the relationship between faith and science.

He mentions that Asians and Caucasians share DNA from Neandertals, which means Asians and Caucasians share a common ancestor in Neandertals.



In chap. 2 he discusses *Australopithecus sediba*, which is a particular interest to him. The prima facie challenge this poses for creationism is that *sediba* has a humanoid skull but an apish skeleton. As such, it resembles a transitional form or "missing link". He has some useful comparative charts (pp24-25). And he mentions other fossil animals that appear to be intermediates.

In-between chaps 2-3, he has an interlude where he discusses how Redwoods create their own environment.

In chap. 3, he explains how he remains a creationist or Christian:

Because of my own personal, purely subjective, non-transferable experiences with the risen Jesus Christ, my savior...I also think I have good reasons for recognizing the hand of God in my life, even though it is my own subjective experience...More often, though, I've encountered him in the smallest, most inconsequential details that only I notice. I can't explain them. I can't make sense of them.

This seems to be intentionally cryptic. Perhaps he's alluding to answered prayer or, more generally, unexpected special providences. "Coincidences" that are a bit too frequent and convenient to be sheer coincidence.

If that's what he's referring to, then "subjective" is misleading, since that could be something merely psychological. Rather, he may be referring to objective events that have a private coded significance and/or incidents that he alone experienced. There were no other witnesses. Yet he knows what happened to him.

It's also possible for some "purely subjective" experiences to have veridical elements. Take a premonitory dream. That's a psychological phenomenon, but with corresponding corroboration.

In an interlude between chaps 3-4 he talks about humming birds.

In chap. 4 he discusses a hermeneutic of accommodation. He considers that a euphemism. He presents a devastating critique of theistic evolutionary hermeneutics (p51), then turns tables on the theistic evolutionist (p52).

In chap. 5 he outlines his own hermeneutic. Over the past few years he's been reading the church fathers on Genesis because they were ignorant of modern science, so their interpretations supply a prescientific check on reinterpretations of the text that are too self-conscious about how the text relates to modern science.

He has some "open questions" about the text, like:

- How does the snake talk? Was that normal in the garden?
- If people weren't meat-eaters before the flood, why was Abel a herdsman?
- Why do the ages in the genealogies (Gen 5, 11) end in nonrandom digits?
- How do the technological innovations of Cain's family correspond to the postdiluvian world?

In chap 6 he says consilience is what makes the theory of evolution convincing to many scientists. How could so many lines of evidence point to the wrong conclusion?

So it's not enough for creationists to poke holes in evolution. They must provide consistent replacements.

However, he goes on to say that if evolution is true, then with all the fossil evidence we now have at our disposal, there ought to be an unbroken chain from subhuman animals to humans, yet that's not what we actually find. Rather, we find discrete groups that don't overlap.

Between chaps 6-7, he has an interlude about the startling intelligence of crows.

In chap 7 he wonders about the source of the accounts in Genesis, and considers different explanations. He also wonders about the relationship between Gen 1 and Gen 2.

He seems to have some exegetical as well as scientific misgivings about the creationist assumption that there was no animal death before the fall. It may be that he has a firmer commitment to some elements of the creationist package than others.

In chap 8 he discusses four of the hardest challenges for young-earth creationism. There's the starlight problem.

There's the radiometric dating problem. Despite isolated exceptions, the issue concerns a general trend. He says the theory of accelerated decay might be a promising solution, although that's not out of the woods.

A third issue is why different kinds of organisms are so similar at different levels. However, he says the pattern doesn't look like an evolutionary tree.

Then there's the prima facie problem of how, if we're all descended from Noah's family, human diversity extends so far back into the past. But he has his own hypothesis, consistent with creationism, to explain that.

That's followed by some hortatory chapters. Then there's a select, annotated bibliography. One striking omission is that he doesn't include Jonathan Sarfati's *The Genesis Account*. Perhaps Wood hasn't read it because he can't afford it on his subsistence income. Or maybe he prefers his own creationist strategies to Sarfati's. Or maybe there's bad blood between them.

Wood has another book due out next month: a dialogue between himself and theistic evolutionist Darrel Falk. I'm primarily interested in Wood's side of the conversation.

I'd like to revisit two issues:

**1.** Regarding *Australopithecus sediba*, for me that raises the question of why creatures have the body plans they do? To function in a particular environment. Some creatures have more specialized bodies to capitalize on distinctive opportunities provided by a particular environment while other creatures have more adaptable, multi-purpose bodies. Compare an anteater to a raccoon or coyote. Both strategies have tradeoffs.

The point, though, is that a human might have a different kind of body depending on the environment. A body we don't associate with extant humans because that subspecies went extinct. So in principle, some humans, through adaptation, might retain a human skull but develop an apish body to exploit that ecological niche. And some animals might be designed with mixed characteristics from the get-go.

**2.** Regarding the starlight conundrum, that depends on how we approach the issue. There are bottom-up types of explanations and top-down types of explanations.

I once dreamt about a pebbled beach facing a bay. It was sunny but subdued. On the lefthand side were woods. I couldn't see the other side. Dreams sometimes have a funny perspective, where peripheral vision is cropped—like a stage set. There was a shaded country road up the hill. It was a very peaceful setting. But dreams can be frustrating because sometimes you're having a nice dream, then you wake up too soon. You wish the dream lasted longer. You'd like to explore it some more.

Because I woke up, I never saw what was on the other side of the hill. I didn't have a chance to walk up the street.

So what *was* on the other side of the hill? Nothing—because I woke up! It was a road that literally led nowhere. The dreamscape ended when the dream ended. Not where but when.

In dreams, your imagination is making things up as you go along. But suppose that was a recurring dream. Then the dream might continue on the other side of the hill. My imagination delimits the outer limits of the dreamscape.

Now, I don't think God is dreaming the universe into existence. But there is an analogy. Creation originates as an idea in God's mind. When God makes the world, that's a finite exemplification of his expansive idea. And in that respect, creation is always incomplete, because it's just a sample of God's infinite imagination. The boundaries are artificial. God could always instantiate a larger sample of his imagination, so there's a sense in which creation trails off in

many directions that exist in God's mind, but not in the world. The world is a finite representation of God's illimitable imagination.

## Is natural evil postlapsarian?

Although Dr. Welty discusses various objections to his theodicy, he regrettably omits any mention its greatest challenge: the widespread conviction that it has been decisively disproven by science.

Mainstream science has no place for the Biblical Adam & Eve in an idyllic Garden of Eden. Allegedly, humans evolved, via a cruel quest for survival, in a group of at least several thousand; there never were two humans from whom all other humans descend.

Even worse, fossils indicating natural evil (animal suffering from predation, disease, etc.) are allegedly dated millions of years older than the earliest humans, in blatant contrast with the notion that natural evil was caused by Adam's Fall.

Clearly, the view that natural evil comes only after Adam's Fall entails rejecting mainstream fossil dates, and thus essentially embracing Young Earth Creationism (YEC).

Unhappily, the bulk of Christian Academia has largely accepted mainstream science, and hence disdains YEC. Some Christian scholars do uphold the traditional natural evil theodicy, while at the same time explicitly rejecting YEC, seemingly unaware of any inconsistency (e.g., Wayne Grudem, Douglas Groothuis). Most, however, embrace alternative theodicies that are more in tune with mainstream science.

<http://bylogos.blogspot.com/2019/01/why-so-much-evil.html>

That raises a number of issues:

**1.** In historical theology, what phenomena did Reformed theologians classify as natural evils? Natural evil is a very broad category, with many examples.

**i)** Wildfires are a natural evil, caused by lightning. Does Byl think there was no lightning or fire before the Fall?

Campfires can start a wildfire. Was everything fireproof before the Fall?

**ii)** Flooding is classified as a natural evil. Does that mean the Nile river couldn't/didn't flood before the Fall? The annual flooding of the Nile river is beneficial to Egyptian farmers.

**iii)** If a tsunami sweeps over an island that has no fauna, is that a natural evil? It doesn't kill anything. Is a tsunami intrinsically a natural evil, or only in conjunction with other factors?

**iv)** An avalanche is classified as a natural disaster. Were avalanches impossible before the Fall? If you have mountains and precipitation, that produces snowpacks that produce avalanches.

**2.** This all goes to the ambiguity of "natural evil". "Natural evil" is a term of art. Many natural evils are natural goods. They are necessary to maintain the balance of nature. They are only evil if a human being is in the wrong place at the wrong time.

**3.** It's not as if the Bible has a list of labeled natural evils. Is it a biblical presupposition that animal death is evil? Was



the sacrificial system evil?

**4.** I've always thought the YEC claim that natural evil must be a result of the Fall is philosophically and exegetically naive:

**i)** YECs assume that natural evil is incompatible with the creation as originally "good" or "very good". That, however, is not an exegetical conclusion. Gen 1 doesn't define the goodness of creation in contrast to so-called natural evil. It doesn't speak to that issue one way or the other.

**ii)** The standard objection to animal suffering is not that it happened before the Fall. What atheist frames the objection that way? If we say animal suffering is a postlapsarian development, that's irrelevant to the argument from animal suffering. Atheists will say animal suffering is incompatible with divine benevolence or wisdom regardless of whether that is deemed to be a prelapsarian or postlapsarian phenomenon. God is still complicit in predation, parasitism, and disease even if that's indexed to the Fall. So it's a failed theodicy.

**iii)** In addition, Byl is a Calvinist, so he believes that God predestined all natural (and moral evils) and implements his blueprint via meticulous providence.

**iv)** Even within an Edenic setting, it doesn't follow that there was no predation or animal death. Although the animals are tame in relation to Adam and Eve, that carries no presumption that they are nonviolent in relation to other animals.

**v)** Apropos (iv), Gen 2-3 implies animal mortality, for the tree of life is reserved for humans. And it only existed in the garden, not outside the garden.

**5.** YEC, if true, entails the falsity of the evolutionary narrative. However, the converse doesn't follow. The falsity of YEC doesn't entail the evolutionary narrative.

**6.** Allowing for natural evils before the Fall doesn't mean innocent Adam and Eve were exposed to natural evils. God could providentially shield them from natural evils.

**7.** Byl is both a geocentrist as well as a young-earth creationist. From his viewpoint, they share a common hermeneutic. The same hermeneutic yields young-earth creationism and geocentrism.

The dilemma that generates is that I don't see how he can draw a hermeneutical line between geocentrism and flat-earthism. He's scornful of Enns' arguing that Scripture teaches a three-story universe, but it sure looks to me like the same hermeneutic that yields a geocentric cosmography yields a flat-earth cosmography as well. And the reasoning is reversible. They rise and fall together.

## Hallmark card heaven

Based in part on golden age passages in Isaiah (11:6-7; 35:9; 65:25), young-earth creationists think the world to come won't have predation. They regard the new Eden as a reversion to the "very good" state of prelapsarian Eden.

There are some exegetical problems with that extrapolation. The passages in Isaiah are poetic. The prosaic description of Eden in Gen 2-3 doesn't say that.

But I'd like to approach it from another angle. Many boys (myself included) take an avid interest in wildlife. An interest they don't outgrow. As adults, they retain their interest in animals.

In addition, many men and boys have a particular fascination with dangerous animals. Venomous snakes. Anacondas. Reticulating pythons. Crocodiles. Komodo dragons. Leopards, lions, and tigers. Grizzly bears. Kodiak bears. Sharks. Sea leopards. Wolves. Wolverines. Mandrills. And so on and so forth.

Some men become herpetologists. Some men move to Africa to study the wildlife or hunt big game.

If wildlife in the world to come is confined to fawns, bunny rabbits, and Kola bears, is that the average man's idea of paradise? In addition, many guys like to do things with an element of risk, like skiing, whitewater rafting, horseback riding, race cars, and contact sports. Admittedly, metrosexuals have a different point of view.

My point is not that the world to come will automatically be an extension of whatever we like to do in the here-and-now.

But that cuts both ways. When we make projections about what the world to come will be like, some Christians are conditioned to envision a parklike landscape garden with nothing more menacing than chipmunks and pink flamingos. But as long as we're going to speculate about the world to come, is that really *your* idea of paradise?

Again, I'm not suggesting that the world to come will be dangerous for the saints. Yet the world to come will still have natural hazards. It's not as if there won't be cliffs. If you went hiking in the mountains, that doesn't mean stone turns into sponge. It would be more a case of providential protection from harm than the absence of harmful things.

## Hobbits

1. This raises a potential challenge to biblical creation:

<https://humangenesis.org/2019/04/22/asian-diversity-and-the-seafaring-hominin/>

As we discover more fossils, there may be further challenges in kind. One issue this raises is whether Christians should just admit that human evolution is true. Is the time past due to throw in the towel? Sure, we can contrive ingenuous explanations to reconcile this with biblical creation, but isn't that special pleading? It's only because Genesis is part of the sacred canon of Christianity rather than **THE ARGONAUTICA** that we make an effort to defend the historicity of Genesis when we'd never make a comparable effort to defend the historicity of **THE ARGONAUTICA**. So goes the argument.

It would, indeed be special pleading to defend the historicity of **THE ARGONAUTICA**, but the comparison is inapt. If there's abundant evidence that Christianity is true, then it's not special pleading to treat the Bible differently than we treat **THE ARGONAUTICA**.

Not to mention that there are scientific objections to the theory of evolution. The evidence isn't one-sided.

2. Another issue is how we tell that something has humanoid intelligence. For instance, there are animals that use things designed by humans. It would be invalid to infer that animals invent what they use. For that matter, lots of

humans are smart enough to use a cellphone who aren't smart enough to design a cellphone. So there's a distinction between inventing tools and using tools. Suppose you had a jungle inhabited by humans and apes. Apes might steal human tools and toy with them. Discovering apes with tools wouldn't ipso facto prove the apes had humanoid intelligence.

**3.** There's also the question of how we identify humanoid intelligence. This goes to the larger issue of what makes humans human or unique compared to animals. A common criterion is a certain level of intelligence. A capacity for abstract thought. Imagination. Deliberation. Thinking about the past and future. Is it possible for a creature to have humanoid intelligence, yet be inhuman?

In Christian theology, angels have humanoid intelligence, yet angels are unrelated to humans. To take another example, there's a sense in which psychopaths are both human and inhuman. On the one hand they have human intelligence. Indeed, above-average intelligence. Yet a psychopath lacks normal human psychology. Psychos are expert at mimicking human emotions, but they lack human emotions. In particular, they lack empathy. They have no conscience.

A psychopath is like a vampire. A vampire retains human intelligence and memories. But its psychological makeup is inhuman. When it looks at a human being, it views the human as food. By the same token, psychos are predators who hunt human prey. So there's something fundamentally inhuman about psychopaths (and sociopaths).

Or take someone like Bobby Fischer who's a genius, but devoid of social intelligence. He can relate to the game of chess, but he can't relate to human beings.

Or, to consider this from the other end of the telescope, consider people with Down syndrome who, in a sense, have subhuman intelligence, yet they have a human emotional makeup. In a sense, someone with Down syndrome has greater humanity than Bobby Fischer.

Another example, albeit fictional, is rational aliens. Suppose you had a conversation with an E.T. Initially, you might find that you have a lot in common with the E.T. But as the conversation progresses, you come to the terrifying realization that there's something fundamentally foreign about its outlook. Suppose what humans find beautiful, our hypothetical aliens don't find beautiful. What we find emotionally compelling, they don't. They don't respond to music. They don't gaze in awe at sunsets. They have no instinct to comfort a crying child.

**4.** Apropos (3), imagine if God created some animals with humanoid intelligence that are, nevertheless, unrelated to humans. Imagine if you had a conversation with one of them. At first you seem to share a lot in common. But as the conversation deepens, it becomes increasingly apparent that they operate on a different wavelength. Humanoid intelligence is, at best, a necessary but insufficient condition to make one human. And even that may be overstated (e.g. Down syndrome).

**5.** Scripture doesn't detail the animals God created. It classifies them by ecological zone. Land animals, aquatic animals, and volant animals. Even if God created (now extinct) animals with humanoid intelligence, there's no presumption that Scripture would mention that fact. Just as there's no expectation that the Genesis narrator would list the Tasmanian devil. For one thing, the original audience would have no idea what the narrator was referring to.

Indeed, the narrator wouldn't have the vocabulary. And even if the Bible did use the word "Tasmanian devil", that term would be co-opted by Bible readers to refer to something other than the marsupial. By the time the Tasmania devil was discovered, it would be called something else.

**6.** Inspiration doesn't make a Bible writer omniscient. The Genesis narrator was ignorant about the existence of most species. But ignorance is not the same thing as error. And even if he knew about Australian/Tasmanian fauna, there'd be no occasion to mention that in the creation account. By the same token, even if God created (now extinct) animals with humanoid intelligence, there'd be no reason for Genesis to mention that.



## Creation, evolution, and male nipples

I've discussed this before:

<https://triablogue.blogspot.com/2015/10/why-do-men-have-nipples.html>

but I'd like to make an additional observation. Take a comparison: camouflage in general is functional. It conceals prey from predators. Conversely, it conceals ambush predators or predatory stalkers from prey.

However, many animals don't simply have camouflage, but symmetrical camouflage. That, however, isn't functional. Indeed, it's somewhat counterproductive because it makes the animal easier to detect. The symmetry doesn't blend into the background. That's why military fatigues use disruptive coloration to break up the outlines of a soldier.

A Darwinist may say camouflage mirrors bilateral symmetry. But while that may be true, it doesn't confer a survival advantage. It has no evolutionary utility.

Moreover, many animals have disruptive coloration or countershading, so the evolutionary explanation isn't consistent.

BTW, this is a problem with evolutionary explanations: if a feature is functional, the Darwinist says that's adaptive, but if the feature is useless or counterproductive, they say that because evolution is blind. So the theory is too flexible. Something and its contrary are both evidence for evolution!

From a creationist standpoint, male nipples may have the same explanation as symmetrical camouflage: it's

decorative. In creationism, not everything has to be functional. Some things may be aesthetic.

## "Gnostic creationism"

Last year, SEBTS prof. Kenneth Keathley published a critique of YEC: "Confessions of a Disappointed Young-Earther":

[http://www.baptistcenter.net/journals/JBTM\\_10-2\\_Fall\\_2013.pdf](http://www.baptistcenter.net/journals/JBTM_10-2_Fall_2013.pdf)

He describes his transition from YEC to OEC. Keathley is one of the better-read critics of YEC. In his article he interacts—albeit rather glancingly—with many of the best YEC scientists. It's a fairly sophisticated critique. So it's worth examining:

**1)** Keathley's article involves a two-part analysis in which he compares and contrasts the YEC model of **THE GENESIS FLOOD** with contemporary creationism. He points out that contemporary creationists have abandoned many of the arguments in **THE GENESIS FLOOD**. Keathley seems to be insinuating that this undermines YEC. That YEC has been in retreat ever since **THE GENESIS FLOOD**. If that's his point, I don't see how that proves his point.

**i)** Naturally the newer generation of YEC scientists will appeal to models and evidence which reflect current science. The scientific landscape has changed a lot since **THE GENESIS FLOOD** was published back in 1961.

Suppose you compared a 1961 textbook on astronomy, biology, cosmology, physics, or medical science with a 2014 counterpart. There'd be some drastic changes.

For that matter, sometimes the very same scientist (e.g. Stephen Hawking, E. O. Wilson) will retract positions he took at an earlier point in his career.

Keep in mind, too, that due to the interdisciplinary nature of YEC, Henry Morris was often writing far outside his field of expertise. By contrast, contemporary YEC scientists pool their respective specializations.

**ii)** Moreover, it's not just a case of withdrawing old arguments. For instance, on his blog, Jay Wile periodically posts new lines of evidence for YEC. Keathley might take issue with the new evidence, but the point is that it's not as if YEC has simply been backpedaling ever since The Genesis Flood.

Snelling concedes that much of the geological evidence cannot be reconciled with any interpretation that uses the physical laws, properties and relationships as they presently are. He postulates that God miraculously changed the laws of nature during the Flood.

This raises several issues:

**i)** I agree with Keathley YEC explanations often seem to be ad hoc. I'm admittedly skeptical about many of the scientific explanations proposed by YEC. I have no reason to believe that's how it happened. I don't mean the Biblical description—I mean the scientific explanation.

However, my skepticism isn't confined to YEC. Fact is, when reconstructing the distant past, our explanations are often just an educated guess. We don't know how it really happened. We don't know the actual cause. Because scientific explanations of the distant past are necessarily ex post facto, they are often ad hoc.

**ii)** YEC scientists oscillate between natural and miraculous explanations. Again, that sometimes seems to be, or

sometimes is, fairly ad hoc. But it's not that simple:

As an OEC, Keathley's own position commits him to alternating between miracles and providence. A natural causal continuum punctuated by discrete acts of fiat creation. So the difference between YEC and OEC is a difference of degree rather than kind.

The same holds true for Bible history, where many natural events are the effect of second causes, but some natural events are the direct effect of spiritual agency.

There is no uniform principle. No consistent modality. For, as a matter of fact, things happen in two or three different ways.

It is not ad hoc in principle to distinguish between miracle and providence. To the contrary, that distinction tracks reality.

It's only ad hoc to arbitrarily assign some events to miraculous agency and other events to providential agency when we are in no position to know how they actually came about.

Appealing to a change in the laws of nature marks a remarkable change in YEC strategy, and in many ways it also makes a significant admission. As a strategy, it indicates an end to any real attempt to empirically establish the historicity of a global flood. Miracles, by definition, cannot be scientifically examined. The appeal also admits that the scientific evidence does not support the YEC model.

That's a very problematic claim:

**i)** What is Keathley's justification for claiming that "miracles, by definition, cannot be scientifically examined"? Suppose we could take our scientific equipment back in time to the marriage at Cana. We could scientifically verify that the water was H<sub>2</sub>O. We could scientific verify that the wine was fermented grape juice. Our continuous, high-speed camera footage, from different angles, could scientifically verify that no one substituted wine for water through sleight of hand.

In principle, our equipment could scientifically verify that Jesus was clinically dead. We could go into the tomb on Saturday and scientifically verify necrosis. On Sunday, we could scientifically verify that he was alive. Fingerprints, DNA testing, and dental records, before and after the fact, could scientifically verify that it was the same person who died and revived.

Take sticks becoming snakes (Exod 7). We could scientifically verify that the staff was made of real wood. We could scientifically verify that the snake was a real snake. Our continuous, high-speed camera footage, from different angles, could scientifically verify that no one swapped the staff for a snake.

In principle, many kinds of miracles can be scientifically examined. Of course, in practice, that might only be feasible in the case of some contemporary miracles. But Keathley is asserting as a matter of principle ("by definition") that miracles can't be scientifically examined. Yet it's easy to come up with hypothetical (not to mention real) counterexamples.

**ii)** Also, how does a change in the laws of nature prevent us from empirically establishing the historicity of a given event? Is a miracle intrinsically undetectable to all five

senses? Even if the cause is empirically undetectable, that doesn't make the effect undetectable. Surely Keathley believes many Biblical miracles were observable events. That our records go back to eyewitness testimony. So the scope of his claim is unclear.

If a historical account includes one or more miracles, does Keathley think the historicity of the account *in general* can't be empirically established, or just the *miraculous* incidents embedded within the overall flow of recorded events?

As I noted before, presuppositionalism recognizes that all approaches to truth begin with certain assumptions that are taken on faith. However, there is one important caveat at this point. The presuppositionalist believes that the validity of one's presuppositions must eventually be tested by using the laws of logic, and be demonstrated by a consistency with the evidential findings. Fideism, by contrast, does not believe one's presuppositions can be tested. Like the presuppositionalist, the fideist believes that one starts with certain presuppositions. But unlike the presuppositionalist, the fideist does not subject his starting assumptions to any type of feedback or check. The fideist operates by "blind faith."

That's a valid distinction. How he deploys it is a different question (see below).

### The Only Recourse Left: The Omphalos Argument

Is that the only recourse left to YEC, or is that a supplemental argument?

As an OEC, isn't Keathley committed to selective mature creation? So, once again, isn't that a difference of degree

rather than kind?

First, an appearance of age is an appearance of a non-actual history... If the original creatures were created fully grown, then they were created with an apparent history. By extension, a universe created fully mature will, by necessity, give signs of a history that did not actually happen.

Why is that a problem? Take a movie about the Gunfight at O.K. Corral. The movie set depicts the Old West, circa 1881. An instant past. Buildings look like they were in place well before October 1881. The appearance of a non-actual history.

Suppose the movie includes a period newspaper, dated Oct 25, 1881. The newspaper recounts some events from last month. Yet September 1881 doesn't exist in the movie. The newspaper gives signs of a history that didn't happen in the movie.

What if the divine origin of the world is like a historical drama which actually begins later than the past it takes for granted? I don't see how that's antecedently objectionable or improbable from a theological standpoint. Don't we need to leave our options open?

Second, the mature creation argument is unfalsifiable. This means it can be neither proven nor disproven. As Bertrand Russell observed, "We may all have come into existence five minutes ago, provided with ready-made memories, with holes in our socks and hair that needed cutting."<sup>57</sup> Since there is no way to prove the theory, we have moved from the realm of science into the realm of metaphysics. The mature creation argument



truly is a fideistic position, since it places creation beyond investigation.

**i)** We need to distinguish between scientific *theories* and scientific *presuppositions*. Even if a scientific theory ought to be falsifiable (which is hotly contested in the philosophy of science), that doesn't mean a scientific presupposition is falsifiable. The existence of an external world is a scientific presupposition. But is that falsifiable? If idealism is true, then that's indistinguishable from a physical world.

**ii)** What if the truth happens to be unfalsifiable? Should we stipulate in advance that the truth must be falsifiable? But how do we know that? And if that's something we don't know and can't know, is it reasonable to make that a requirement of scientific theorizing?

**iii)** Isn't *verification* more fundamental than *falsification*? If something is verifiable, then falsification is superfluous. Perhaps Keathley thinks verification and falsification are linked. If so, we'd need to see the argument.

**iv)** Suppose cyberneticists succeeded in developing artificial intelligence. But in the nature of the case, an artificially intelligent consciousness can't be a blank. The designer must give it something to start with. Software. A program. A self-identity.

Suppose the cyberneticist gives it memories. An imaginary past. What if that's necessary to kick-start AI consciousness?

What if, at some point, the AI machine came to realize that its original memories were simulated? But by that point it had acquired actual memories. An actual past. It no longer needed the ersatz memories.

Third, the appeal to an appearance of age is an admission that the evidence is against the young earth view. Gosse conceded this over 150 years ago.<sup>58</sup> If the overwhelming preponderance of empirical data pointed to a recent creation, then YEC advocates would not bother with such a difficult hypothesis as the omphalos argument. The very fact that YEC proponents find it necessary to appeal to the mature creation argument is a concession.

I think it's more accurate to say YEC scientists believe the evidence is equivocal. That there's apparent scientific evidence for the antiquity of the world as well as scientific evidence for the recency of the world.

Fourth, the mature creation argument seems almost to embrace a denial of physical reality. Certain advocates of the argument do not hesitate to describe the universe as an illusion. Gary North declares, "The Bible's account of the chronology of creation points to an illusion...The seeming age of the stars is an illusion...Either the constancy of the speed of light is an illusion, or the size of the universe is an illusion, or else the physical events that we hypothesize to explain the visible changes in light or radiation are false inferences."<sup>59</sup> At this point the arguments for the appearance of age seem uncomfortably Gnostic.

Does Keathley feel the same way about paintings? Painters often depict nonevents. They paint a scene that never happened. Is that "uncomfortably Gnostic"?

What if God is like an artist? Just as a painter can depict a scene which he saw in his imagination, why can't God

create a physical image of a supernova which only exists in the mind of God?

Fifth, a consistent application of the mature creation argument will conclude that there are no evidences of a young earth. The universe has been coherently, uniformly created with the appearance of age.

I think that's an overgeneralization. Suppose God makes some fruit trees ex nihilo. These instant, first-generation fruit trees are undatable. They, in turn, disperse seeds which produce second (third, fourth, fifth) generation fruit trees. Because second-generation fruit trees are the product of a cyclical process, they are datable (e.g. tree rings, the lifecycle of fruit trees).

Sixth, Gosse arrived at the conclusion that we should study the earth as if it were old.

Why is that a problem? Suppose, for the sake of argument, that Adam had a heart defect. A cardiologist would treat him as if that was a congenital heart defect. Even though his heart defect is not an actual birth defect, its origin is irrelevant to the outcome or the treatment.

## Iconoclastic science

**1.** Recently I read **THE FOOL AND THE HERETIC** (Zondervan 2019). It's a dialogue between young-earth creationist Todd Wood and theistic evolutionist Darrel Falk. I haven't read the sections by Falk. I bought the book for Wood's contributions. I think the book would be better without the patronizing, handholding interludes by Rob Barrett. And that would free up more space for Wood.

To judge by what he said in a post:

<http://toddcwood.blogspot.com/2019/01/about-that-book.html>

I was expecting Wood's side of the dialogue to be rather concessive. Instead, he was quite confrontational—which is refreshing.

**2.** I find Todd's hermeneutic rather roughhewn. However, he's right about the big picture issues. He stresses the ad hoc way theistic evolutionists treat Gen 1-9 as pious fiction or allegory—while they don't treat other narratives in Scripture the same way, even though other narratives in the Pentateuch or Gospels have the same supernaturalism.

**3.** Theistic evolutionists complain that young-earth creationists drive people away from the faith by positing a false dichotomy. And there's certainly a danger of alienating people from the Christian faith if we make a particular interpretation of Scripture identical to what Scripture means—assuming that's just one possible, and possibly mistaken, interpretation.

At the same time, we can't be Christian unless we commit to certain interpretations. Moreover, the danger cuts both ways. Belief in evolution drives many people away from Christianity, even if young-earth creationism didn't exist.

**4.** A common objection to young-earth creationists is that they only believe it because they believe the Bible. They don't begin with the scientific evidence but the Bible. They don't have any positive evidence for their alternative. They are just poking holes in the standard paradigm.

Even if that rather jaundiced characterization were true, science benefits from having sharp, rigorous, relentless critics who spot weaknesses in the prevailing scientific orthodoxies.

In addition, scientific progress is strategically driven by gifted mavericks. Sometimes their theories are blind alleys, but sometimes they make midcourse corrections or original, fundamental contributions to science as an ongoing research program.

Compare Todd Wood to Dennis Venema. As a probing, intellectually dissatisfied scientist, Wood has the potential to make original, fundamental contributions to science that a company man like Venema lacks. Science requires balance between creative iconoclasm and stability. It's useful to work within a paradigm. Exhaust the paradigm. But it's sometimes necessary to question the paradigm.

It's easy for scientists to become prematurely settled in their ways. They stop asking questions because they think they know the answers. Sometimes they discount evidence to the contrary as anomalous. But the mavericks keep extending the frontiers. Ironically, some scientists lack

intellectual curiosity. They are satisfied with the received answers.

Wood objects that commitment to evolution results in losing an amazingly fruitful and exciting avenue of scientific research that goes deeper than Darwin (36).

**5.** Some of what Wood writes might foster the impression that he isn't only a creationist because he believes the Bible, and not because he thinks there's any evidence for creationism. But based on cluster analysis, he thinks there are patterns in nature that evolution can't explain (154, 200).

Likewise, he thinks the evolutionary explanation for the PAM matrix (i.e. protein similarities between disparate species) has it upside down (60-62). He wouldn't be motivated to consider the issue from a different angle unless he was motivated by creationism. Scientists who lack that motivation neglect to consider what might be a superior alternative explanation.

**6.** It's also important to emphasize that this isn't just about raw natural evidence. The debate over methodological atheism demonstrates a key philosophical component. The mainstream scientific paradigms treat nature as a closed system, a machine. They interpolate and extrapolate, reconstruct the past, fill in the evidential gaps, based on that secular philosophical postulate.

And it's true that nature is machine-like. But what if creation is dualistic rather than materialistic? What if there's interaction between mind and matter? What if there are discarnate agents who sometimes intervene, who sometimes contribute to the outcome? Incidentally, there's empirical evidence for that.

In that event, secular science isn't simply following the evidence wherever it leads, but disregarding inconvenient evidence and superimposing an artificial filter on what science is allowed to discover. So it's simplistic to frame the issue in terms of one side having the evidence while the other side has dogma.

There's a certain tension in science because scientists like things to be predictable. They like to be in control. But what if there are uncontrollable variables due to factors like mental causation, discarnate agents, miracles, the efficacy of prayer, and paranormal phenomena (for which there's tremendous evidence). What if that's actually a part of reality? Then, like it or not, that imposes certain limitations the ability of science to achieve mastery over the material world. It will be frustrated in its godlike quest to know and manipulate the world around us.

And that's beneficial. Science is marvelous and dangerous. It has enormous potential for good and evil. We should be grateful for barriers that curb the power of science.

**7.** Suppose Gen 1-9 was *obviously* true. Suppose there was abundant evidence for Gen 1-9 (or the Exodus, to take another example).

That would make it easy to believe. And that wouldn't leave room for faith. Conversely, that would make it much tougher to be an atheist.

But what if God made a world that's ambiguous in some respects? Where Gen 1-9 isn't obviously true or obviously false?

Now a critic might object that I'm guilty of special pleading. Yet that's not unique to Genesis. In Scripture, faith is hard. Faith is meant to be hard. That's a principle which antedates the "conflict" between science and Scripture by centuries or millennia.

On the one hand there's overwhelming evidence for Christianity. On the other hand, there are perennial emotional, physical, and intellectual obstacles along the walk of faith. That's always been the case. It didn't begin with the advent of modern science.

Although there are many lines of evidence for Christianity, it's difficult to be a Christian. God could make it a lot easier. He doesn't.

So the creation/evolution debate is just one more test of faith. That's nothing new. Generations of Jews and Christians before us had obstacles to overcome, and generations to come will face their own obstacles. The Christian pilgrimage is demanding. A winnowing process. Some pilgrims drop out before the finish line.



## Creative intelligence

How important is the role of time in the debate between young-earth creationists, old-earth creationists, theistic evolutionists, and naturalistic evolutionists?

i) By definition, the time-factor is a defining feature of young-earth creationism. That said, the time-factor is intrinsically important to naturalistic evolution in a way that's not the case for young-earth creationism. For young-earth creationism, the time-factor is inasmuch as proponents think that's what the Bible teaches, and what the Bible teaches is true. So the time-factor is important in association with other essentials, even though the time-factor may not be essential in its own right.

By contrast, millions and billions of years are a necessary condition of naturalistic evolution. That's because intelligence is a far more efficient problem-solving strategy than dumb luck.

Take hacking someone's password or pin number. You could rely on dumb luck. Manually input random numbers. And it's mathematically possible that you'd luck out the very first time. But given the daunting number of possible combinations, it's more likely that you will die of old age before you hit on the right combination.

Or you can do it the smart way. For instance, people often use memorable passwords and pin numbers. Something easy to recall because they associate it with something significant in their life, like a birthdate, address, name of a relative or girlfriend. And some of that information is in the public domain. So, rather than run all the possible permutations, hackers can sometimes take shortcuts.

But because naturalistic evolution is a mindless process, it takes enormous amounts of time to get lucky every once and a while.

**ii)** Of course, that's, at best, a necessary rather than a sufficient condition. Naturalistic evolution has to get lucky surprisingly often. Take the theory of convergent evolution. Supposedly, evolution blindly developed echolocation on two separate occasions (bats, dolphins), the camera eye on three separate occasions (mammals, jellyfish, squids and octopuses ), and flight on four separate occasions (birds, bats, insects, pterosaurs). Placentals and marsupials are another example. One can ask how plausible that is. If this were a casino, security would be hauling you off to a soundproof room for interrogation—or worse.

If an amateur poker player can stay in the game long enough, he will be dealt winning hands at random. The problem is that, for every winning hand he's randomly dealt, he's dealt many more losing hands. Even if he can afford the initial buy-in, dumb luck will exhaust his little pile of chips long before the next winning hand comes to him by chance.

And that's another problem with naturalistic evolution. For every lucky break, how many times does natural selection deal itself a losing hand? How can evolution stay in the game?

Dropping the metaphor, natural selection needs something to work on. Something to build on. How can a trial and error process succeed if it breaks down far more often than it builds a bridge? Where's the continuity? What keeps things going during a long losing streak?

**iii)** In addition, evolution is supposed to be an incremental process. Steps rather than skips. Intelligence can take intuitive shortcuts. Compare Capablanca with computer

chess. Capablanca could just take things in at a glance. Great mathematicians (e.g. Henri Poincaré, Paul Cohen, Benoit Mandelbrot, Andrew Wiles) can solve problems through a flash of insight. Or take the physical intuition of great scientists (e.g. Newton, Einstein, Pauling, Feynman). Take thought-experiments like Einstein's train and Newton's cannon. By contrast, naturalistic evolution lacks foresight—or even sight. It just lumbers along.

**iv)** Even if old-earth creationism (i.e. progressive creationism) is correct, it seems to be the right answer to the wrong problem. The real conflict isn't over time scales, but competing narratives. What fills the intervals of time.

And it isn't just a question of sequential or nonsequential narration. The Bible tells a very different story of origins. Not just a question of when it happened, or in what order, but how and what happened.

**v)** Some professing Christians take refuge in theistic evolution. But is that a satisfactory fallback position?

**a)** To begin with, what's the relationship between the theistic component and the evolutionary component? Are these independent or interdependent? Are they theistic evolutionists because they think there's convincing evidence for God's existence as well as convincing evidence for evolution, so they simply combine these two propositions? Or do they think God has an instrumental role in evolution?

**b)** Apropos (a), do they reject naturalistic evolution because they think a mindless process is unable get the job done? Do they think the only feasible form of evolution is guided evolution?

But if a natural process can't succeed without this deus ex machina, why believe in evolution in the first place? If

you're invoking God to shore up deficiencies in evolution, isn't that a reason to scrap the evolutionary paradigm?

**vi)** The evolutionary worldview is at odds with the Biblical worldview. At best, theistic evolution says God front-loaded the process. But after that, it unfolds on its own. That's a noninterventionist deity. Essentially evolutionary deism.

By contrast, the Bible depicts an interventionist deity. And not just God. You also have interventionist spirits (angels, demons).

To be sure, the Bible also has a doctrine of ordinary providence. In Scripture, the relationship between miracle and providence is analogous to respiration. Respiration is normally an unconscious process. Self-regulating. An autonomic function. Yet it's possible for us to consciously control our rate of respiration. We can override the default setting. That's useful for swimmers and divers.

Likewise, natural processes are normally automatic. Like a machine. But agents can intervene at will.

**vii)** Another problem with theistic evolution is that if you accept evolutionary history, then it seems to be an utterly random process rather than a guided process. "Random" in the sense that world events are independent of what species need to survive. You have natural disasters that result in mass extinction of most species. Whether they survive or perish seems to be an accident of timing. Finding yourself at the wrong place at the wrong time.

The process appears to be groping rather than guided. Uncoordinated. Indifferent to collateral damage. Like a twisted freeway interchange where most onramps and offramps abruptly end—dangling in midair. So many roads to nowhere. So many false starts. So many dead-ends.

If God is directing the evolutionary process, he seems to be hopelessly lost. A driver without a map or compass—much less GPS—who tries out alternate routes to see which, if any, lead to the destination.

## Theistic human evolution

One of the challenges for theistic evolution is how to reconcile theistic evolution with the competence and benevolence of God. According to evolution (i.e. macroevolution, universal common descent), Cromagnon man is the end-result (thus far, at least) of earlier hominids. Some represent linear ancestors of Cromagnon man, while others represent independent offshoots, where we and they branched off from a common ancestor. Divergent evolution. Earlier hominids became extinct. In some cases, Cromagnon man replaced them.

From a theistic evolutionary perspective, this is strikingly like those science fiction stories in which a cyberneticist experiments with model androids until he is able to perfect his design. Once they outlive their usefulness, the earlier models are deactivated and destroyed. This calls into question both the competence and benevolence of the deity postulated by theistic evolution

In addition, it's far from clear why modern man would represent the final stage in human evolution. Logically, we'd be just another stepping stone, another temporary phase, in human evolution—to be replaced by a superior model down the line.

## Animal mortality

I'm responding to Facebook commenters on my recent animal mortality post:

### MICHAEL L DRAKE

If the image of God's ultimate cosmic peace (among other things) is that the lion lies down with the lamb, did the lion lie down with the lamb before the fall?

He needs to demonstrate why the Isaian imagery is literal rather than poetic. Does he take the same approach to other Isaian passages, viz.,

**Sing, O heavens, for the Lord has done it; shout, O depths of the earth; break forth into singing, O mountains, O forest, and every tree in it! (44:23).**

**“For you shall go out in joy and be led forth in peace; the mountains and the hills before you shall break forth into singing, and all the trees of the field shall clap their hands.**

**Instead of the thorn shall come up the cypress; instead of the brier shall come up the myrtle; and it shall make a name for the Lord,**

## **an everlasting sign that shall not be cut off (55:12-13).**

And even if we take it literally, why assume the final state is just a throwback to the primeval state?

### **DION ASTWOOD**

I think the issue needs answering, but I don't find the criticisms in the article that compelling. Jesus made wine from water, that is a creative event.

Which weakens the YEC appeal to the 7th day as the terminus of divine creativity.

It is not that God could not create new kinds of creatures after the 6 days, it is that it does not appear that he did.

YECs usually take a stronger line on the implications of the 7th day to rule out macroevolution. To the extent that Dion relativizes its force, that opens the door to progressive creationism and theistic evolution. So he's defending YEC by arguments which undercut YEC.

Modifying creatures post fall, even genetically, fits with YEC.

Not if the "modifications" fit the standard definition of macroevolution (i.e. novel body parts and body plans due to new genetic information).

The world was cursed and that means changes. Thorns (I believe) are mutated leaves, but that God directed that on a global scale fits in a with a curse.



He's assuming what he needs to prove. Gen 3 doesn't say the "world" was cursed. Gen 3 doesn't say thorns are mutated leaves.

Further, it is not that human death is assumed to apply to animal death thus animals were not carnivorous, it is that the animals were vegetarian as they are described. The author is incorrect about many carnivores, they can live even now on a vegetarian diet including felines, canines.

I specifically made allowance for exceptions. He needs to pay attention to what people actually say, rather than respond with prepared answers that don't address the specifics of the argument.

He is also probably incorrect about the vampire bat.

Does he know that or not? Why the weasel words ("probably incorrect").

It is also not ad hoc. Plants died. Why does Steve think that ants need to be classified with dogs and not plants, or fungi, or sponges, or bacteria.

Because ants are obviously more dog-like than sponge-like. Do the comparative anatomy. Is the body plan of an ant more like a dog or a sponge, fungus, daffodil?

Prelapsarian bacteria certainly died.

Irrelevant. I didn't discuss bacteria in the context of mortality, but good and evil.

Sponges are classified in animalia though we would not consider them dying prior to the Fall, nor even now. Scripture suggests that death relates to the soul and breath

"Soul" is misleading. That has traditional connotations of an immortal, immaterial seat of personality. Genesis doesn't use "soul" in that sense. He's bouncing off the rendering of the King James Bible.

thus breathing is a quality of an animal who can die, not Steve's presumption of how he thinks they must be classified.

To my knowledge, most organisms on earth require oxygen to survive. So doesn't his criterion backfire?

Or is he talking about a particular mechanism (e.g. lungs) to process oxygen? If so, that's ad hoc.

His critique would be better if he were more well read I cited Sarfati and Snelling. And in my recent Genesis series I also cited Wise. Those are three of the best representatives of contemporary YEC.

and interacted on a deeper level.

Ironic considering the superficiality of his own comments.

"So there is some level of death (or predation and Steve's feelings about anteaters and ants doesn't really cut it."

His bluster aside, once he starts carving out exceptions to his principle, he no longer has a principle. He can no longer object to antelapsarian death and predation as a matter of

principle. At best, he can only try to draw the line with certain types of prelapsarian death and predation, on a case-by-case basis. The original categorical claim undergoes a series of ad hoc qualifications.

To say the counterexample of anteaters (which wasn't my only counterexample) "doesn't really cut it" is bluster rather than argument.

"In terms of subsequent creation, I don't see it as a necessary problem."

It's a problem if you oppose six-day fiat creation to progressive creation or theistic evolution.

"Thorns are new..."

He's assuming the distinction is temporal rather than spatial. Why do thorns have to be new? They could preexist outside the garden. They are new to Adam and Eve. After Adam and Eve are banished from the Garden, they encounter thorns thistles for the first time.

Dion filters the text through YEC exegesis. He doesn't even seem to be conscious of alternative interpretations at this juncture.

"and this can either be targeted genetic change by God in a pre-existent kind, permitted genetic change (which continually happens with new disease) or creating a new kind."

Creation of "new kinds" subsequent to the cessation of God's creative work on day 7 is progressive creationism or theistic evolution rather than young-earth creationism. He's oblivious to tensions within his own position. Isn't one of

the defining features of YEC that God made all the natural kinds during the six-day creation week? Subsequent developments are supposed to occur \*within\* the boundaries of a natural kind.

If day 7 doesn't mark the cut-off, then what distinguishes young-earth creationism from progressive creationism or theistic evolution? And, at the risk of repeating myself, if the infusion of new genetic information results in new body parts or body plans, isn't that the definition of macroevolution? To say that's divinely targeted is synonymous with theistic evolution.

## Historical holonovels

Mass extinction is a common argument for the atheistic implications of evolution. Mind you, one can have mass extinction apart from evolution. Those are separable.

But the basic argument is that it's pointless for God to create species which he subsequently destroys. They just come and go. And not just species. Entire ecosystems come and go in the course of natural history. The unique fauna and flora of that particular epoch arise, exist for millions of years, then pass out of existence, to be replaced by the next set of temporary fauna and flora.

For the sake of argument, let's grant conventional geological timescales. Christian theology concerns the future as well as the past. Eschatology as well as protology.

Suppose, in the world to come, God makes time-travel possible. We can go back in time to observe the past. Perhaps we can't interact with the past. Rather, we're like immersive spectators. Something we can experience, but not something we can change.

There are, in fact, many men who'd love to go back in time to observe dinosaurs, or extinct Ice Age animals, or see the exotic flora and the wild ancient landscape. And maybe God will make that possible for the saints.

If so, then it's not "wasted." Rather, it's like a historical holonovel. Something that God wrote for our enjoyment.

Now, an atheist might object that this is one of the things he especially dislikes about Christian theology: we can

always postulate a supernatural solution. That's just too convenient.

But, as a matter of fact, if Christianity is true, then it really does have wide-open possibilities which are foreclosed by secularism. That's not ad hoc. That's integral to the nature of the belief-system.

## Creation debate: Mohler v. Collins

I recently saw a debate between Albert Mohler and Jack Collins:

<https://www.youtube.com/watch?v=kGETfOQgNI4>

**1.** Having read Collins present his position in a number of books, it wasn't especially informative to me. The best part was the second part where they sat down and answered questions.

I disagree with some of his exegetical moves. But he has a very thoughtful position.

**2.** There were strengths and weaknesses in Mohler's case. One weakness is his appeal to the consensus fidelium. But that's just a fancy word for tradition. And tradition tends to be self-reinforcing. You believe it because the guy before you believed it, and he believed it because the guy before him believed it. But that makes belief its own justification, which is viciously circular. We need something to ground belief, and not just regressive or circular appeals to belief itself. Take urban legends that get passed on uncritically. To believe something just because other people believe it is a sorry substitute for evidence.

**3.** Another weakness was his appeal to the "plain, natural, normal, face-value" sense of the text. Problem is, that's not directly about what's in the text, but the impression it makes on the reader. Moreover, what's "plain, natural, or normal" to a modern reader may be far removed from what's "plain, nature, and normal" to the original audience. Unless we guard against it, our modern culture supplies

reference frame for what we deem to be the "plain, natural, normal" meaning of the text.

In chapter 8 of **UNDERSTANDING DISPENSATIONALISTS**, Vern Poythress has some useful things to say about the ambiguities and unreliability of appeals to the plain or literal meaning of the text:

<http://frame-poythress.org/ebooks/understanding-dispensationalists/>

In addition, what seems to be the natural or face-value meaning of the text in isolation may take on a different meaning when we consider the wider context. Indeed, Mohler is aware of that.

**4.** Mohler's strongest objection to old-earth creationism is that proponents accept cosmology and geology, but reject (evolutionary) biology. That seems to be ad hoc.

Likewise, it's not just about time, but what evolutionary biologists and paleontologists say happened during that time.

**5.** One has to be careful about the ad hoc allegation. Even if the special creation of Adam and Eve in OEC seems ad hoc, one could say miracles in general seem ad hoc. After all, miracles are, by definition, discontinuous with the ordinary course of nature.

**6.** Which is not to deny that you can have makeshift positions along the creationist/evolutionist continuum. Consider people who say Gen 2 is factual when it talks



about the special creation of Adam and Eve, but everything else in Gen 1-3 (or 1-11) is false or fictitious.

**7.** I'm skeptical about our ability to reconstruct the distant past. Can we seriously know what happened in the first three minutes of the Big Bang, some 14 billions years ago?

A paradox of reconstructing the past is that we lack direct access to the past. The present is our only available frame of reference. Residual evidence from the past. But how do we know that's a representative sample? And when you talk about billions of years, imagine the vast gaps in the surviving evidence.

**8.** A related problem is the assumption of linearity. But especially where creation is concerned, there's no presumption that the past resembles the present. For all we know, the universe may be like the "instant" past of a stage set about ancient Rome or the Old West. That's where the movie begins.

And this is more than a bare possibility. Any version of creation ex nihilo requires an element of mature creation. Something comes into being which is not the result of an antecedent natural state or process. And once we make allowance for that principle, it's hard to draw a line that isn't arbitrary. The issue then becomes how much was built into creation, and how much is due to natural development.

**9.** The theory of evolution isn't just theologically controversial, but scientifically controversial. It's controversial within the secular scientific community in a way that cosmology and geology are not.

So it's not just a question of conservative Christians drawing the line with evolutionary biology. Although secular

scientists generally believe in the "fact" of evolution, there are raging debates over the theoretical underpinnings. Indeed, Collins said biologists admit to him in private that they don't think naturalistic evolution can get the job done.

**10.** Another issue that Mohler raised is whether OEC is unstable. Is there a firewall between OEC and theistic evolution or naturalistic evolution?

However, it's possible to turn that objection around. Many people who start out as young-earth creationists become theistic evolutionists or naturalistic evolutionists. So in that regard, one might contend that YEC is unstable. It has no give. Apostates who used to be youth-earth creationists continue to treat YEC as the standard of comparison, but they no longer believe it. They continue to believe that's the right interpretation of Gen 1-9, but they no longer believe in Scripture because they think science falsified YEC. And they had no fallback position. For them, the alternative to YEC is naturalistic evolution. So they become atheists.

In fairness to Mohler, he may mean OEC is unstable in the sense that it's a stopgap position, whereas YEC is a coherent position that presents a clear-cut alternative to theistic evolution and naturalistic evolution. It's an interesting question whether there's sociological data to answer the following questions:

i) How many Christians who start out as YEC remain YEC?

ii) How many Christians who start out as YEC become OEC?

iii) How many Christians who start out as YEC become theistic evolutionists?

iv) How many Christians who start out as YEC become naturalistic evolutionists?

v) How many Christians who start out as OEC remain OEC?

vi) How many Christians who start out as OEC become YEC?

vii) How many Christians who start out as OEC become theistic evolutionists?

viii) How many Christians who start out as OEC become naturalistic evolutionists?

## What's good for the Gosse is good for the gander

On Twitter, progressive theologian Randal Rauser labored to mount a rejoinder to a post of mine responding to a post of his.

Just to put things in context, part of Rauser's schtick is to say we shouldn't create unnecessary stumbling blocks that drive people away from Christianity or deter them from considering it in the first place. And it just so happens that the list of unnecessary stumbling blocks always lines up with what progressive theologian Randal Rauser doesn't believe in. What a coincidence! And by yet another amazing coincidence, he never classifies his progressive theology or ideology as an unnecessary stumbling block, even though progressive theology and ideology constitute a turnoff for many people.

Science doesn't deal with eschatology. It simply projects the future of the universe based on current conditions. And based on current conditions, the universe will suffer a heat death. When Christians offer a different future, they do so based on divine intervention, and science has *nothing* to say about that.

I was wondering if Rauser would take the bait, and what do you know—he stepped right into the trap. It doesn't occur to him that a young-earth creationist can take the very same principle and apply to the past what Rauser applies to the future.

Science also doesn't disprove "immortal souls".

I agree, but for the sake of argument I was alluding to neuroscientists who routinely appeal to evidence they think shows that mind events are brain events. The brain generates the mind.

But neither do you need to believe in such things to be a Christian.

Of course, Rauser has a long list of biblical teachings that you don't need to believe in to be a Christian. Indeed, considering the many examples he's given of biblical teachings he disdains, if he was to draw up two lists, the list of biblical teachings he rejects would be appreciably longer than the list which he accepts.

Triablogue should place their eschatological hope in the bodily resurrection, not an immortal soul.

**i)** Enter a false dichotomy. The biblical eschatological hope includes both the intermediate state and the final state.

**ii)** That's a fixture of pastoral grief counseling and funeral services. The hope that your loved one didn't pass into oblivion when they died.

**iii)** In addition, physicalism raises problems for personal identity. If you cease to exist, and after a chronological gap God resurrects you, is it *you* that God resurrects if that's just a *copy* of you? For instance, is a copy of your memories transferred to a new brain the same you?

This is why "Christian physicalist" Peter van Inwagen once proposed that the body that's buried isn't the actual corpse of the deceased Christian but a simulacrum. God preserves the actual corpse in stasis. *That* is what is resurrected. He

was driven to that outlandish proposal because, as a physicalist, there's no immortal soul to maintain personal continuity between death and resurrection. Rauser skates over the metaphysical difficulties of his position.

And science doesn't address divinely wrought resurrections. Which brings me to the last nonsense point. Science says dead people stay dead in the natural course of events. But Christ's resurrection is not part of the natural course of events so science has nothing to say about it.

Rauser still hasn't caught on to the fact that he's trapped in the same dilemma (see above). Once again, a young-earth creationist or—even Philip Henry Gosse—can invoke the same principle to defend mature creation or Omphalism. What's good for the Gosse is good for the gander.

## Genesis, Creation, & contemporary science

Steve and I recently had an e-mail exchange on some issues related to interpreting Genesis, the days of creation, and their relationship to contemporary science. We thought others might benefit from this interaction.

### **Evan May**

Hey Steve,

I thought [your post](#) on the creation days and God's labor during the daylight was insightful. I appreciate the way that you have an eye to how the original audience would conceptualize a text given their world and setting; we're often hampered by the fact that we interpret these texts from behind a desk in the AC!

I was curious if your position related to the days of creation and the age of the earth question had developed any. I've not come across anything you've written recently that wouldn't complement what you've written in the past, but it has seemed to gesture toward some possible change in thought. But maybe I'm misreading that.

Just was curious as to where you find yourself currently in your study of these things. You've always been a helpful guide to me.

### **Steve Hays**

Ah, always so tactful! Complicated question to answer:

**i)** I'm probably more open to/sympathetic to OEC than I was as a young man. If we range OEC on the left of YEC, perhaps that means I'm going soft in my dotage. However, I don't think it's that simple.

**ii)** For one thing, I'm open to a version of Omphalism, which is to the right of YEC.

As I've discussed before, for all we know, the universe may well be like a period movie set. To all appearances, it began as if history was already in progress.

Take directors of historical movies like Tombstone. They build movie sets with period architecture, period technology, period attire, &c. Instant past. In the opening scene of Tombstone, the Earp brothers step off the train. That's where the story begins. There is, of course, an implicit backstory. But that doesn't really "exist" within the world of the film.

Critics complain that if mature creation is true, then we see the aftereffect of supernovas that never existed. True, but so what? It's like asking where the RR tracks at the Tombstone station really begin.

I don't have any antecedent ethical or theological objection to the possibility that we are living on the movie set of a cosmic historical fiction (in that sense). In that respect, my position is more radical than YEC.

**iii)** That said, for several years I've taken in interest in the neglected significance of light and darkness in Gen 1. For instance:

"Fiat lux"



## "Light shade"

Is the emphasis on units of time or units of light? Of course, that could be a false dichotomy. Obviously, it can be both. But it's a question of what the narrator is accentuating.

**iv)** I began to observe the frequency of septunarian patterns in OT narratives:

## "Sacred time & sacred space"

That raises questions about numerology: round numbers, symbolic numbers.

Likewise, the relationship between the first day and the fourth day has always been provocative:

## "The significance of the fourth day"

**v)** In addition, when I read Biblical narratives I think it's good for the reader to cast himself in the role of a movie director. If I had to film this, what should I see in my mind's eye? For instance, as I recently said:

There's also the enigmatic relationship between light on day 1 and lights on day 4. Part of the explanation is that you can't put lights in the sky before you make the sky. In that respect, day 2 must precede day 4. Likewise, it's the sky as seen in relation to the land, from the perspective of a ground-based observer. In that respect, day 2 must precede day 3, while day 3 must precede day 4—inasmuch as you can't see lights in the sky from earth until the earth (i.e. dry land) is made.

Put another way, there's a distinction between light without land supplying the frame of reference (day 1), and light with land supplying a frame of reference (day 3). If the land is submerged, an observer can't see light overhead, because he has nowhere to stand. And that analysis of day 4 is true whether or not we endorse the temple interpretation.

Likewise, I think it's important that we put ourselves in the situation of the original audience, as best we can (from this far out).

**vi)** I think there's undoubtedly a fair amount of truth to mature creation. And once you make allowance for mature creation, it's hard to draw a bright line. Likewise, once you make allowance for an omnipotent, interventionist God—or even creatures with paranormal abilities—it's much harder to exclude various possibilities.

**vii)** I think it's a good exercise to develop some competing paradigms (YEC, OEC, Omphalism) in detail; to take each one as far as they can. By working them out as fully as possible, that facilitates comparing and contrasting them, assessing their respective stronger and weaker points.

**viii)** Because I think YEC might well be right, we should be prepared to defend it. We should develop supporting arguments. And that's something I continue to do. But OEC might be right. So the same strategy applies to OEC. Same thing with Omphalism.

One reason I so often defend YEC is because I think most objections to YEC are ill-conceived. Also, atheists typically ignore OEC. They attack YEC or Intelligent design theory. Those are their primary targets.

ix) [Here's](#) an example of a Christian who was too invested in a particular interpretation. Notice, it wasn't disproving Genesis that generated a crisis of faith, but merely disproving (or challenging) a particular interpretation of two verses. It wasn't the truth of Genesis that was at stake, but the truth of his interpretation. And a fairly narrow exegetical point at that. It's dangerous to have such a brittle faith.

The only point of difference I'd have with Justin in the article would be with his view of [Gen 1:1](#); [2:4](#). I do believe that the two verses are summary statements. [Gen 1:1](#) — this is what God did, let me tell you about what happened. [Gen 2:4](#) — that's what God did, what I told you is what happened. If that's true, and I believe it is, then [Gen 1:1](#) does not describe the creation activity of Day 1. It means the heavens and the earth were there when God began his work week and said, "Let there be light." One word of caution here, please be gentle with how you deliver this exegesis. I was 39 yrs old and 39 years a young Earther when this was explained to me. It sent me into a tailspin for the better part of a year. Honestly, it was one of the most frightening seasons of my life.

BTW, my recent post on "[Evangelicalism and OEC](#)" isn't a statement of support for OEC. It's more of a warning to Christians whose knowledge is so insular and uninformed that they "shocked" when exposed, for the first time, to a conservative Christian (like Justin Taylor) who questions or rejects YEC. It catches them off-guard, and that's a dangerous condition. They at least need to be aware of this.

**Evan**

Hey Steve,

Thanks for your detailed reply! Very helpful.

As you've pointed out before, I think the doctrine of creation *ex nihilo* commits everyone to some form of "story begun in progress." At the moment of creation, something exists which does not have preexisting naturalistic causes and operations. It's just a question of at what point in the narrative God decides to press the play button, and how long the creative process takes to set the stage. And given God's continued supernatural operation in the world, what science is able to detect with its blinding-goggles of methodological naturalism will be limited.

A benefit of Omphalism is that it's unfalsifiable. That's a *faux pas* for scientific theories, but of course it isn't a scientific theory but a philosophical and theological position. And it isn't *ad hoc* to the Christian storyline and it's theology of miracle.

My layman's assessment of the scientific data is that the evidence for the old age of the earth and universe is relatively strong (although not without its own paradigm assumptions), that the evidence for universal common descent is mixed (and mostly weak), and that the evidence for the Darwinian processes being able to account for biological life and diversity is nonexistent.

So my primary concern is more with interpreting the Genesis text. If Genesis commits me to YEC, then I don't find that to be existentially problematic. If Genesis permits OEC, then there's even less tension to manage. And obviously there is a variety of textual interpretations that support these and other views. As you've also pointed out, there is a collection of distinct claims that tend to be lumped together unnecessarily (the age of the cosmos, the

nature of the days of creation, the presence or absence of animal predation outside the garden before the Fall, the extent of the flood, etc.). By the way, what are some of the more reliable resources that you've drawn from when it comes to reading Gen. 1-3? Are you developing someone else's insight for the theme of light and darkness, or are these your own "enlightened" thoughts? :-)

Now there's the question of the age of the *earth*, and then there's the distinct question of the age of *humanity*. Even if Genesis allows for an ancient earth, it would seem to commit us to a relatively young humanity. While the genealogies may contain gaps, they do list the years at which the generations were sired, which would seem to provide a seamless history between Adam and Noah (Gen. 5) and then from Noah to Abraham (Gen. 11). Of course, the putative evidence for a 100,000+ year old humanity seems to be predicated on Darwinian assumptions to begin with. Now, theistic evolutionists who hold to an historical Adam tend to select him from a pre-existing population of homo sapiens, or non-*imago-dei*-bearing hominids. But that's problematic for both the Darwinian story and the Genesis text. On the other hand are progressive creationists who hold to common descent but also a genuine historical pair of first humans from which all of humanity have descended. But if you are willing to sift through the genetic data used to argue for the limited bottleneck, why not do the same for the genetic data used to support common descent?

These are some rambling thoughts on my end. Feel free to respond to anything here with your own impressions.

**Steve**

**i)** One problem is that, to my knowledge, OEC proponents don't generally expound a detailed narrative for their position in the way that YEC, naturalistic evolutionary, and theistic evolutionary proponents do. They are less clear on how they correlate or intercalate their position with Genesis in terms of an overarching narrative.

**ii)** Let's consider a theologically acceptable version of OEC. This version denies macroevolution and universal common descent, whether for animals or man.

Like YEC, it involves the fiat creation or special creation of natural kinds. Like contemporary YEC, it allows for considerable variation via adaptation.

God introduces natural kinds into the biosphere at different times. It's staggered. He creates a natural kind. He allows the natural kind to diversify. So different natural kinds are phased in over time. Dinosaurs might preexist mammals and go extinct before mammals are brought into existence. Some natural kind are phased out over time. Something along those lines.

On that construction, God introduced humans, via special/fiat creation, fairly late in the historical sequence of events.

**iii)** One issue regarding Genesis is the old question of the narrator's source of information. There were no human observers for most of Gen 1 and much of Gen 2. Adam didn't observe his own creation. Adam didn't observe the creation of Eve. Eve didn't observe her own creation. And Adam and Eve didn't observe the prior fiats.

One possibility, which I've touched on elsewhere, is [visionary revelation](#).

If that's the case, then in one respect, Gen 1-2 (or Gen 1-9) is analogous to Revelation. Both Genesis (up to point) and Revelation would be visionary narratives. There's a difference: Genesis uses prosaic descriptions whereas Revelation uses symbolic descriptions. So Genesis would be more representational than Revelation.

However, it raises the same "chronological" questions as Revelation. If the narrator (i.e. Moses) is simply recording what he saw God saying and doing in a vision, then that isn't necessarily continuous action.

**iv)** There's the issue of how to date the appearance of man. What makes man recognizably human—especially when all we have to go by are fossil remains?

**v)** Darwinians presume that encephalization is a mark of incipient humanity. That, however, goes to the perennial mind/body problem. The irreducibility of consciousness.

The relation between mind and brain is baffling. To take an [extreme example](#).

Here's one possible way of looking at the issue: suppose you could transfer the human soul to the brain of a lab rat. The result might be the world's smartest lab rat.

Yet I doubt it would be nearly as smart as a human being. That's because I think a ratty brain would severely limit the ability of the human soul to express itself. It's like the difference between using a 1965 computer and a 2015 computer. The operator of a 1965 computer might seem to be a lot dumber than the operator of a 2015 computer because there's so much less that he can do with (or through) that antiquated technology.

Claims about when man first appears on the scene are based largely, if almost entirely, on morphology or comparative anatomy. At least, that's my understanding. And my point (or one point) is that anatomy by itself doesn't tell you what's going on behind the eyes (as it were).

**vi)** A related problem is the question of what counts as evidence of human intelligence. Let's take artifacts like pottery or arrowheads.

Now, I don't doubt that these are human artifacts. I don't doubt that these are the product of human intelligence. But why is that? We assume that or infer that in large part because we're directly acquainted with humans who make arrowheads or pottery. That's an extrapolation from the present, or recorded history, to prehistoric times. And that's perfectly reasonable.

But as a matter of principle, is that a reliable deduction? Is an arrowhead or clay pot more sophisticated than a spiderweb, termite mound, or burrow of a trapdoor spider? [For instance](#).

Suppose we found a "termite mound" or trapdoor burrow on a human scale, containing fossil remains of Australopithecus. Darwinians would chalk that up to simian brainpower. In a sense, it takes intelligence to make a spiderweb, termite mound, or trapdoor spider borrow. But that's not because spiders and terminates are intelligent. Rather, that reflects intelligent programming, like robotics.

Another example is beaver dams. Why do they build dams? Well, we can't ask them, and even if we were able to, they couldn't tell us since they don't know why they build dams.



It's instinctual. But the usual explanation is the beavers build dams to protect themselves from land predators. The dam creates a pond. They build their lodge in the pond. So it's like a moat. I've even read that they let the dam leak when the water-level is high upstream to prevent the dam from giving way due to too much water pressure behind the dam.

If chimpanzees were aquatic like beavers, and did the same thing, Darwinians would tout this as evidence of their proto-human intelligence. But that explanation won't work for beavers. Beavers rank low on the mammalian bell curve.

Point is: inferring intelligence from artifacts isn't straightforward. By the same token, dating the advent of humans from artifacts isn't straightforward.

Some artifacts like cave paintings or ancient flutes seem to be unmistakably human. Likewise, there are debates over the significance of the Ishango Bone.

By the way, what are some of the more reliable resources that you've drawn from when it comes to reading Gen. 1-3? Are you developing someone else's insight for the theme of light and darkness, or are these your own "enlightened" thoughts?

It's mostly my own idiosyncratic musings. I think that Walton, in his commentary, has a useful interpretation on the cursing of the snake. Other than that, I don't think he's especially reliable. Very hit and miss.

I think there's some merit to the cosmic temple interpretation, championed by some interpreters. But that's been overextended.

Some studies on ANE ophiolatry/ophiomancy are germane to Gen 3, but most commentators miss the significance.

Some of my reflections have been stimulated by responding to the oft-repeated allegation that Scripture teaches a triple-decker universe.

## **Evan**

Hey Steve,

Much helpful information here. Thanks in particular for the useful counter-examples to the assumption that comparative anatomy indicates comparative intelligence.

Picking up on your thoughts about the creation narrative as visionary revelation, I think that brings an important angle to the linguistic debates. OEC advocates point out the semantic range of "day," while YEC proponents draw attention to other syntactic features that they take as indicating a less figurative use. But if the days of creation are days in a vision, then what is significant is not primarily the *sense* of the term but the extravisionary *referent*. So the word "day" may connote (in modern terms) a 24 hour period but may denote either that or something else.

## Polyphonic narration

**1.** I'd like to consider the hermeneutics of young-earth creationism, old-earth creationism, and theistic evolution. In particular, how does Gen 1-9 map onto natural history according to these three positions? How, if at all, does Gen 1-9 provide guidance for the way primeval history unfolds?

**2.** Because YEC operates with a face-value reading, it posits a straightforward correlation between the narrative descriptions and natural history. For YEC, Gen 1-9 is a clear-pane window onto natural history.

**3.** Conversely, because the narrative of theistic evolution is at such variance from Gen 1-9, it has several options:

**i)** Gen 1-9 is pious fiction rather than historical narrative. There's no correlation between Gen 1-9 and natural history. It doesn't operate at that level. Rather, the text teaches "spiritual" truths.

**ii)** Gen 1-9 is purified pagan mythology. It's not directly related to what happened. Rather, it corrects prevalent heathen narratives by removing the objectionable features and substituting a theologically orthodox concept. The frame of reference isn't natural history; rather, the frame of reference is pagan mythology, but using that as a foil. But if the template is fiction, then a redacted template is fiction. If the template is a pagan creation myth or flood legend, then after all the impious elements are edited out, the end-result will still be fictional.

**iii)** Gen 1-9 is allegory. There's a kind of analogy between Gen 1-9 and natural history, but it's not a recognizable description of what actually happened. You can't use the

text as a guide to what really happened. It's like an extended metaphor. The allegory is consistent with any number of scenarios.

For theistic evolution, Gen 1-9 is a mural. It doesn't show the viewer what's outside. It doesn't show the viewer what lies on the other side of the wall.

**4.** So where does OEC lie. Somewhere in the middle.

**i)** In my experience, it's less developed. At least until recently, the argument for OEC has been more scientific than exegetical. It critiques evolution on scientific grounds and it critiques YEC on scientific and exegetical grounds, but it doesn't provide a detailed exegetical alternative.

**ii)** In part that's because it's more challenging than YEC, which reads events right off the text, as it stands. Or at least as it seems to a YEC reader.

**iii)** One issue is whether YEC oversimplifies the text. Whether it misses certain clues, in part because it's insensitive of the experience of an ancient audience. How the descriptions appear to a modern reader may not be how they appear to an ancient reader, in the 2nd millennium BC. We must try to adjust to their outlook.

**iv)** Although OEC falls in-between YEC and theistic evolution, the reading is much closer to the YEC end of the spectrum. Like YEC, an OEC reading regards Gen 1-9 as a historical narrative. And the descriptions would bear recognizable correspondence to actual events.

It simply regards the YEC reading as too crude. A failure to grapple with the chronological relationship between day one

and day four. A failure to appreciate the role of stock numbers in Genesis. A failure to appreciate the wide-ranging significance of light and darkness for pre-modern readers. A failure to appreciate the name of the Tempter as a pun. A failure to appreciate the possible role of hyperbole in the flood account. A failure to make adjustments for the historical horizon of the original audience when reading geographical markers in the flood account.

Ironically, an OEC reading may even be more literal than a YEC reading. For instance, it's OEC that takes the Mesopotamian setting of Eden at face-value, while YEC reinterprets that as a case of using old names for new locations (e.g. American towns and cities named after English counterparts).

**v)** Because OEC lies somewhere in the middle, there's the risk of an ad hoc interpretation that is more about avoiding the extremes of the two opposing positions than having its own plot. If, say, Gen 1 isn't consistently chronological, then what is the actual sequence of events? And if we can't say how Gen 1 corresponds to the actual sequence of events, if we can't use it as a guide in that respect, then what does the text teach us?

**vi)** In that regard, consider a comparison:

The narrative technique...consists in constantly shifting from one story and one set of characters to another, but with a "dovetail" or liaison at the point where we change...It may be called the "interwoven" or "polyphonic" narrative...In polyphonic narrative...scenes can succeed one another not where the exigencies of a single rigid "plot" permit. C. S. Lewis, **STUDIES IN**

**MEDIEVAL AND RENAISSANCE LITERATURE** (Cambridge 2013), 133-34.

If you think about it, Revelation employs polyphonic narration. The plot in Revelation shifts back and forth between different streams of action. And even though Lewis is discussing a traditional technique in fictional narration, it's something often used in historical narration. When a historian writes about a complex event like WWII or how the Old West was settled, he must alternate between different streams of action. It's not reducible to a single rigid plot because it's not one event but a cluster of interrelated events. There never was a unilinear order of priority and posteriority, because multiple chains of events are in play.

That may make it harder, or sometimes impossible, to reconstruct the actual series of events. Rather, we're treated to segmented history. Chronological segments. How those correlate is complicated. But in many cases that's a necessity of realistic writing. There isn't a just one course of action to record. Rather, there are multiple events in different places that may run parallel for a time, but begin and end at different times. A historical narrative may conceal that fact because it's selective, but the underlying reality was more variegated.

However, a historian using polyphonic narration to recount the Civil War or how the Old West was settled will will be an accurate, detailed account of real events. It provides a guide to what really happened. It strings together historical segments. So while it may be difficult for reader to piece all that into a linear plot, it's a principled and necessary way to write history.



## Images of creation

**1.** Scripture uses different imagery for God's creative modalities. In the ancient Near East, creative art included architecture, pottery, metallurgy, painting, woodwork, and sculpture. Sculpture and pottery overlap. However, sculpture also made use of ivory and stone. Likewise, sculpture and woodwork overlap.

In pottery or cast bronze sculpture, you take something formless (soft or liquid), then form it into a shape.

In woodworking or stone/ivory sculpture, or relief, you take something solid (hard), then bring a form or shape out of it—as if it was there, on the inside, waiting to be released or brought to the surface.

Two different creative processes: forming *into* or forming *out of*. In the former, the finished object corresponds to the potter/sculptor's visual idea. In the latter, the sculptor projects his idea into raw material. What he sees in it or finds there mirrors what was in his mind's eye.

In Gen 1 it's speech. It might even be song, like the Psalms. God as a lyric poet or bard. Both speaking and chanting are utterances.

It's an interesting question why a locutionary metaphor is used to depict the mode of creation. There may be several reasons:

**i)** Speech comes from a speaker. That's different from, say, a potter who uses preexistent material.



**ii)** Speech is invisible, so it reinforces an aniconic piety. A God who can be heard but not be seen.

**iii)** Speech is revelatory. So creation is a divine revelation.

**iv)** Speech is the outward expression of thought. Mind precedes matter.

**2.** There appears to be a bit of architectural imagery in the "expanse" of **Gen 1:6-8**, like a ceiling or roof. If so, that's figurative.

**3.** Then there's mediate creation, viz. **Gen 1:11ff**. God creates creatures that recreate.

**4.** **Gen 2:7** is often thought to trade on connotations of a potter. That may be correct, although the statement is very terse. I don't know why it's so often translated "dust". Potters don't use dust. Dust is dry granular dirt, whereas clay or mud is moist earth.

However, that may depend on how we visualize the larger setting. Earth can be mud, clay, hardpan, or stone. Soft or hard, loose or solid. The implicit image in **Gen 2:7** is God as a sculptor, but there are different kinds of sculptural techniques, depending on the raw material (see above).

There's also the pun, where the same word may mean "Adam/the man" or what he was made of/out of/from (dirt, soil, ground). So the raw material is flexible.

Gen 2:7 is the language of analogy. Perhaps the process was analogous to a miraculous Bernini.

**5.** Scripture is reticent to use procreative metaphors for creation—no doubt because pagan creation myths do that. It uses a procreative metaphor for regeneration, in a clearly figurative sense. The highly poetic personification of wisdom in Prov 8 is the most extensive example.