Think • Vol 24 • No 70 • Summer 2025, 9–16

DOI: https://doi.org/10.1017/S1477175625000144

Could Darwinian Natural Selection Be Divinely Guided?

*Michael Bergmann**

Department of Philosophy, Purdue University, West Lafayette, USA
*Corresponding author. Email: bergmann@purdue.edu

Keywords: evolution; theism; religious belief; divine providence

Abstract

This article defends the *compatibility* of evolutionary theory and religious belief against the objection that God could not have *intentionally* brought humans into existence given that the evolutionary process by which humans came into existence crucially involves *random* genetic mutation. The thought behind the objection is that a process cannot be both random and intended by God to unfold as it does.

Introduction

I'll be defending the *compatibility* of evolutionary theory and religious belief against one sort of objection. I won't be arguing for the truth or even the rationality of religious belief. In fact, the conclusion I'll be defending has been defended by people such as Stephen Jay Gould (1999), Michael Ruse (2004) and Elliott Sober (2011) who *reject* religious belief. There are several ways in which evolutionary theory and religious belief are thought to be in conflict. Some worry about the origin of species taking longer than the six days of creation mentioned in Genesis. Others worry about the millions of years of evolutionary suffering that we'd expect a good God to prevent. I won't be addressing these concerns here. My focus will be on the charge that the following two theses are in conflict:

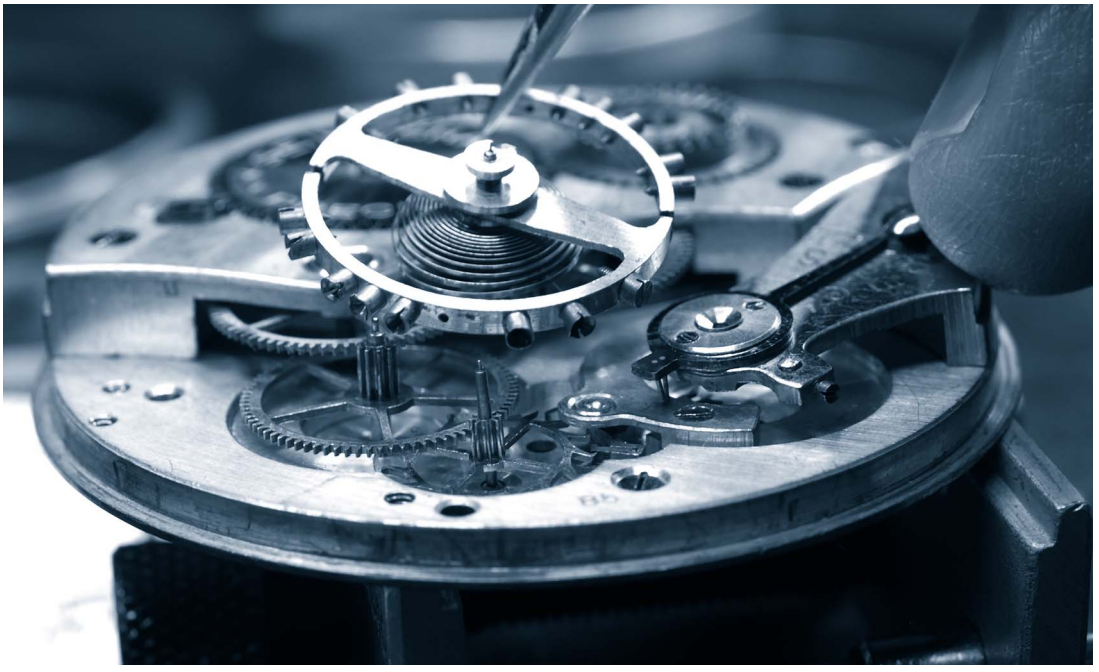
> *The Randomness Thesis:* Humans came into existence via natural selection, which operates on random genetic mutation.
>
> *The Providence Thesis:* God intentionally brought humans into existence.

The basic worry here is that it's tempting to think that the process by which humans came into existence cannot be both random and providentially orchestrated by God.

I will identify *three* ways in which God could have intentionally brought humans into existence via natural selection working on random genetic mutation. I won't be arguing that any particular one of them is what in fact happened or even that any particular one of them is what happened *if God exists*. My goal is only to show that the Randomness Thesis and the Providence Thesis are compatible. And to do that, it is enough to sketch out some ways in which both theses *could* be true at once.

It will be helpful to begin by saying briefly what evolution is. One somewhat popular version of the view, which will be good enough for our purposes, consists of the following five theses about life on earth, as laid out by Alvin Plantinga (2011: 8–9):

https://doi.org/10.1017/S1477175625000144 Published online by Cambridge University Press



1. *Common ancestry:* life originated at one place on earth and all subsequent life descended from it.
2. *Descent with modification*: the diversity of living things arose by way of offspring differing in small ways from their immediate ancestors.
3. *Progress*: life has progressed from simple unicellular life to more complex organisms such as humans.
4. *Ancient Life*: this process of descent with modification began several billion years ago.
5. *Darwinian mechanism*: the main mechanism (although there are others) driving this process of descent with modification is natural selection operating on random genetic mutation, whereby organism types with traits enhancing reproductive fitness are favoured and persist over time.

In this article, I'll assume that to believe in evolution is to accept these five theses.

Before considering whether natural selection could be divinely guided, notice first that there are two main kinds of ways God might be involved with the evolutionary process: God might act in a special way that departs from the ordinary and routine unfolding of the physical world, including everything that goes on in the evolutionary process (these special divine actions are miracles); or God might be involved in an ordinary and routine way.

One example illustrating an ordinary and routine way God might be involved in the unfolding of the universe is highlighted in the doctrine of *Divine Conservation*, which says that at all the times that it exists, the entire physical universe depends for its existence on God's conserving it in existence with all the causal powers that it and its parts have. If this doctrine is true, then God is constantly involved in the evolutionary process, albeit in very ordinary and routine ways. After all, none of the standard scientific conclusions would have to be altered in any way to accommodate this doctrine. The doctrine of Divine Conservation affirms what science tells us about the laws of nature and says that the truth of these laws depends on God. Likewise, this doctrine affirms what science tells us about what exists and what causal powers existing things have and says these things exist with those powers because God sustains them in existence with those powers.

https://doi.org/10.1017/S1477175625000144 Published online by Cambridge University Press

In what follows, we'll see that according to the first two proposed ways in which natural selection could be divinely guided, God's involvement in the evolutionary process is *ordinary and routine* as in the example of Divine Conservation. But according to the third proposal, God is involved in *special* ways that depart from the ordinary and routine unfolding of the evolutionary process.

'You might think that to be truly random, it must be that God didn't plan for the mutation to occur.'

The 'Theistic Hidden Variable' View (THV)

Standard quantum mechanics (QM) tells us, among other things, that there is indeterministic causation at the quantum level. With *deterministic* causation, an event of natural kind E1 in a particular sort of circumstance or scenario *always* causes an event of kind E2. But with *indeterministic* causation, it is merely *probable* to a certain degree that an event of kind E1 in that sort of circumstance or scenario will cause an event of kind E2; and it is also probable to a certain degree that it will instead cause an event of kind E3; and it's probable to a certain degree that it will instead cause an event of kind E4; and so on. Moreover, as biologists such as Kenneth Miller (1999: 207–14) remind us, this sort of indeterminacy is also manifested at the level of gene mutation, so that it isn't determined whether a particular kind of mutation will occur; instead, it is only probable to a certain degree that it will occur.

According to the standard Copenhagen interpretations of QM, this indeterminacy is real and not mere appearance. There really is no fact of the matter about what an event of kind E1 in circumstance C *will* cause; there are only probabilities. But there are also deterministic Hidden Variable interpretations of QM, favoured by Einstein, according to which indeterminacy at the quantum level is merely an appearance: in actual fact, the physical universe (as it has unfolded from the Big Bang through the evolution of species) is deterministic. It appears indeterministic only because there are variables that are currently hidden from us. As Einstein famously put it 'God does not play dice.'

Suppose that a deterministic Hidden Variable interpretation of QM is true. Then God could have brought about humans by setting in motion a series of events that are guaranteed to achieve some intended results. On this Theistic Hidden Variable view (THV), God set things in motion at the Big Bang and watched the evolutionary process unfold in exactly the way God planned, in accord with the *deterministic* laws of nature God selected. You might think that on this view, God acts in a special out-of-the-ordinary and non-routine way when God sets things up. That may be true. But on this account God doesn't get involved in any special way in the *unfolding* of evolutionary history; at most, God gets specially involved in getting the process started at the Big Bang. So on this view, the Providence Thesis is true because God arranged for the existence of humans by setting up the laws of nature and the initial conditions at the Big Bang in such a way that a habitable planet was guaranteed to be formed and humans were guaranteed to evolve on it.

But what about the Randomness Thesis? Is *that thesis* true according to the Theistic Hidden Variable view? In particular, is the gene mutation in the evolutionary process *random*, given that it is occurring in a deterministic universe? To answer this question, let's begin by considering an Atheistic Hidden Variable view according to which the universe is deterministic and there is no God. Consider the result of a coin toss in such a universe. Is it random? Well, in a sense *no*, because the past history of the universe guarantees it. But in the relevant sense *yes*, because no one and nothing in the physical universe *knows* whether it will be heads or tails or *plans* for it to land the way it does land. What about genetic mutation in an atheistic deterministic universe? Is it random? Similar

https://doi.org/10.1017/S1477175625000144 Published online by Cambridge University Press

remarks apply: in a sense *no*, because the past history of the universe guarantees each particular mutation; but in the relevant sense *yes*, because no one and nothing in the physical universe knows the particular way in which the mutation will occur or plans for it to occur in that way. As Alvin Plantinga (2011: 11–12) reminds us, the eminent philosopher of biology Elliot Sober (2011: 192) says that the mutation counts as random because 'there is no *physical mechanism* (either inside organisms or outside of them) that detects which mutations would be beneficial and causes those mutations to occur'. Another way to think about this is to consider this question: if physicists eventually proved that Einstein was right that the universe was deterministic, would that prove that Darwinian theory was mistaken in saying natural selection works on random genetic mutation? No. Instead, we would simply conclude that genetic mutation was random in the sense in which coin tosses are random in a deterministic universe. Insofar as nineteenth-century evolutionary scientists (who had never heard of quantum indeterminacy) believed that the genetic mutation involved in natural selection was random or by chance, they presumably thought it was random in this sense.

We may conclude, therefore, that genetic mutation can be random in Sober's sense in a deterministic universe. Now compare the theistic and atheistic versions of determinism. In both cases, each gene mutation is determined by the consequences of the Big Bang. In discerning whether gene mutation is random in a deterministic universe, does it matter whether or not God planned the Big Bang? In each case, the mutation result is guaranteed from the beginning of the universe; in each case there is no physical mechanism that detects which mutations would be beneficial and causes those mutations to occur. The only difference seems to be that in one case God planned it and in the other case no one did. Given that the gene mutation will be random in Sober's sense on both scenarios, it's plausible to claim that, in each case, genetic mutation counts as random.

You might think that to be truly random, it must be that God didn't plan for the mutation to occur. Let's distinguish two senses in which genetic mutation could be random:

> *Random (Sober's sense)*: there is no physical mechanism that detects which mutations would be beneficial and, for that reason, causes those particular mutations to occur.
> *Random (strong sense)*: random in Sober's sense *and* God didn't arrange for it to occur.

Then we can say that gene mutation is random in this strong sense in an atheistic deterministic universe but not in a theistic deterministic universe. The problem is that science has no business claiming that gene mutation is random in this strong sense. Science hasn't definitively settled the question whether the universe is deterministic. But even if it had settled that the universe (from the Big Bang through the evolution of species) was deterministic, it still would not have shown that God does not exist as the one who planned the Big Bang to unfold as it did. Hence, science doesn't show that genetic mutation is random in the strong sense. Science shows, at best, that genetic mutation is random in Sober's sense.

Thus, we may conclude that, according to THV, not only is the Providence Thesis true, but so also is the Randomness Thesis. This gives us our first case illustrating the compatibility of these two theses.

The 'Divine Collapse-Causation' View (DCC)

The second proposal takes for granted that the universe is *not* deterministic – that no deterministic hidden variable interpretation of QM is true. It endorses a 'spontaneous collapse' interpretation of QM. This kind of interpretation differs from the standard Copenhagen interpretation of QM as follows. According to that standard interpretation, there are only probabilities about what an event of a certain kind will cause and

https://doi.org/10.1017/S1477175625000144 Published online by Cambridge University Press

what the location of a particular subatomic particle is. The probability distributions of characteristics of a quantum system can be represented by a wave function. When an observer takes a measurement of this system, the subatomic particles in the system come to have a definite location instead of merely a probability distribution across many locations. This switch from a probability distribution to a definite location is called the collapse of the wave function. 'Spontaneous collapse' interpretations of QM differ from the Copenhagen interpretation by saying that these wave function collapses occur spontaneously rather than as a result of measurement by an observer. According to the GRW (Ghirardi–Rimini–Weber) interpretation, a macroscopic system visible to the naked eye spontaneously undergoes a localization (or wave function collapse) 10 million times per second.

The crucial question is: what causes the wave function to collapse to the particular state to which it does collapse? Why does it become determinate in this particular way rather than another? The answer, according to the usual GRW interpretations of QM, is that *nothing* causes the wave function to collapse to one state rather than another. There is a predictable probabilistic pattern to these collapses. But there is no way to predict the precise result of the next collapse, because there is no fact of the matter about how precisely that sort of collapse will occur. With genuine quantum indeterminacy, there are only probabilities, no guarantees. So the GRW interpretation says that the wave function for a middle-sized object collapses 10 million times per second, in accord with a predictable probabilistic pattern, but that nothing causes the next collapse to go to the particular state it does go to, rather than another.

'God could watch the universe unfold in its indeterministic way and decide to tinker in minor ways on various occasions in the gene mutation process to keep evolution on track, so to speak, where being 'on track' includes leading eventually to the existence of humans. And since this kind of tinkering is in principle undetectable by science, science doesn't tell us that the universe has not unfolded in this way.'

Now consider the GRW interpretation from a theistic perspective. One possibility is that instead of each collapse being spontaneously caused by *nothing* (to occur precisely as it does rather than in some other way), each of the collapses is freely caused by *God* in such a way that the pattern of collapses matches a certain probability distribution over time – the very probability distribution that science tells us to expect. Alvin Plantinga (2011: 115–21), who has suggested this possibility, calls it the Divine Collapse-Causation View (DCC). DCC is just like the ordinary GRW interpretation of QM except that, instead of saying that *nothing* causes the collapses to occur precisely as they do, it says that *God* causes them to occur precisely as they do. Given that this is the only difference, it's difficult to see how any scientific evidence could

https://doi.org/10.1017/S1477175625000144 Published online by Cambridge University Press

enable us to decide between DCC and the ordinary GRW interpretation (although it's possible that scientific evidence could overturn all GRW interpretations).

The upshot is this: if DCC is true, then each of the collapses of the wave function for each quantum state in evolutionary history is caused by God. This means that God is constantly involved in this process in an ordinary and routine way. And this kind of divine involvement would be like divine conservation in that it couldn't be detected by scientific means. Moreover, as a result of this involvement, God could guide the unfolding of the evolutionary process to occur just as it did. If God had chosen to cause different collapses, God could have had evolutionary history unfold in some other pre-selected way, which also fitted the expected probabilistic pattern of collapses. Thus, if a theistic DCC version of a GRW interpretation is true, then the unfolding of the universe – including the evolutionary production of humans – is under God's control, in which case the Providence Thesis is true.

What about the Randomness Thesis? Is it compatible with the conjunction of DCC and the Providence Thesis? Once again, it is helpful to consider an *atheistic* theory first – in this case, an atheistic version of the GRW interpretation of QM – and to consider whether genetic mutation could be random according to it. The answer seems to be yes. After all, if a GRW theory is right, the universe unfolds in an indeterministic way, with collapses happening according to predictable patterns, but with no particular collapse being predictable. It is as natural as can be to think that genetic mutation that is influenced by this indeterministic process is random.

Now consider a theistic DCC universe that is physically identical to the atheistic GRW universe just described. In both cases, the patterns of spontaneous collapses influencing gene mutation will be the same; and in both cases, each particular collapse and mutation will be the same. The only difference is that in the DCC universe, *God* is causing each collapse to occur precisely as it does whereas in the atheistic GRW universe, *nothing* is causing each collapse to occur precisely as it does, rather than in some other way. In each of these universes, gene mutation is random in Sober's sense. It's true that gene mutation is random in the *strong* sense in the atheistic GRW universe whereas it is not random in that sense in the DCC universe. But, as already noted, science doesn't show us that gene mutation is random in the strong sense in a GRW universe, since it doesn't show us that it is not God but (rather) nothing at all that causes the collapses to occur as they do, rather than in some other way. Hence, genetic mutation in a DCC universe is random in every sense in which science can reasonably claim that genetic mutation is random.

Thus, if DCC were true, then both the Providence Thesis and the Randomness Thesis would also be true. This gives us a second case illustrating the compatibility of these two theses.

The 'Scientifically Undetectable Miracles' View (SUM)

On the first two views, God does not get specially involved in the unfolding of evolutionary history: according to THV, God gets specially involved at the Big Bang when everything gets set up, but not afterward; and according to DCC, God is involved constantly but in an ordinary and routine way. However, what if both THV and DCC are false? Scientists may eventually have good reason to reject all deterministic hidden variable theories, in which case they'll have good reason to reject THV. Likewise, they may eventually have good reason to reject all GRW interpretations, in which case they'll have good reason to reject DCC. At present these views seem to be possibilities that haven't been ruled out. But that may change.

I now want to consider a way in which God can guide the evolutionary process if there *is* genuine indeterminacy (so no deterministic hidden variable view is true) and if spontaneous collapse theories are false. According to this proposal, God gets involved in *special and non-routine* ways in the evolutionary process. Once again, let's suppose that quantum indeterminacy is manifested at the level of gene mutation. Suppose also that God wants to guarantee a particular mutation, so God gets specially involved and causes it. In fact, suppose that God tinkers

https://doi.org/10.1017/S1477175625000144 Published online by Cambridge University Press

in this way with the evolutionary process, not constantly or in regular ways but on *numerous* occasions. Notice that this sort of tinkering could happen in a way that is in principle undetectable by empirical science. This is because, as already noted, science tells us only that there will be certain probabilistic patterns in the results of indeterministic processes, not that any particular undetermined result will occur on a particular occasion. If God tinkered with the gene mutation process in a way that is consistent with the probabilistic patterns scientists have learned to expect, then – as Peter van Inwagen (2003) explains – even if we knew these patterns perfectly and God tinkered with the mutation process fairly often, God's involvement would be in principle undetectable by scientific means. It would still count as miraculous involvement. But the difference between it and no divine involvement would be the difference between *nothing* causing the effect to be the precise one it is and *God* causing the effect to be the precise one it is. Science is in principle incapable of detecting such differences. (One might wonder: why would God do this in a way that is in principle undetectable? Maybe because God doesn't want to interfere with creaturely attempts to learn via science. Maybe because God likes the elegance of a system operating in accord with indeterministic laws. Maybe for reasons we couldn't grasp.)

We can call this view the 'Scientifically Undetectable Miracles' (or SUM) view. Notice that if God was prepared to tinker in the way SUM says God tinkers, then God could intentionally bring about the existence of humans. God could watch the universe unfold in its indeterministic way and decide to tinker in minor ways on various occasions in the gene mutation process to keep evolution on track, so to speak, where being 'on track' includes leading eventually to the existence of humans. And since this kind of tinkering is in principle undetectable by science, science doesn't tell us that the universe has not unfolded in this way. Thus, the SUM view endorses the Providence Thesis in a way that is consistent with contemporary science.

What does the SUM view say about the Randomness Thesis? Again, it will be helpful to look at an atheistic view first. Suppose that the standard Copenhagen interpretation of QM is true and quantum indeterminacy manifests itself at the level of genetic mutation, as that occurs in the evolutionary process. Now consider an atheistic universe of this sort in which evolution results in humans. Is gene mutation random in this atheistic universe? Of course. If any genetic mutation is random, that is.

Now suppose that SUM is true and consider a theistic universe with a physical history that is exactly the same as that of this atheistic universe. The only difference is that some of the outcomes – at the quantum level and at the level of gene mutation – are caused directly and miraculously by God (with the aim of nudging the unfolding of the universe in the direction of producing humans, among other things). Is gene mutation in this theistic universe random? Well, it's not random in the strong sense, because it's directly caused by God. But notice that whether God is directly involved in these ways is scientifically undetectable *in principle*, because God's involvement fits the expected probabilistic patterns – that is, it matches one of the ways things might have gone in an atheistic universe. That means science is unable *in principle* to confirm that genetic mutation is random in the strong sense. Nevertheless, it is entirely compatible with the SUM view to say that gene mutation is random in Sober's sense (i.e. there is no physical mechanism that detects which mutations would be beneficial and causes those mutations to occur).

So according to the SUM view, the Randomness Thesis is true. And, through timely tinkering, God is able to intentionally bring about the existence of humans. So the Providence Thesis is true as well. This gives us a third case illustrating the compatibility of these two theses.

Conclusion

There's no reason for theists to endorse one of the three views presented here, in order to

https://doi.org/10.1017/S1477175625000144 Published online by Cambridge University Press

believe both the Providence Thesis and the Randomness Thesis. Instead, theists could say that *either* THV *or* DCC *or* the SUM view is right (*or* some other view, according to which both the Providence Thesis and the Randomness Thesis are true, is right). The main point of this article is just this: the argument that evolution and religious belief are incompatible *because the Providence Thesis and the Randomness Thesis are incompatible* fails.

Acknowledgements. Thanks to Jeffrey Brower, Martin Curd, Hud Hudson and Sebastian Murgueitio Ramirez for helpful comments on earlier drafts.

References

Gould, Stephen Jay (1999) *Rocks of Ages* (New York: Ballantine Books).
Miller, Kenneth (1999) *Finding Darwin's God* (New York: HarperCollins).
Plantinga, Alvin (2011) *Where the Conflict Really Lies* (Oxford: Oxford University Press).
Ruse, Michael (2004) *Can a Darwinian Be a Christian?* (Cambridge: Cambridge University Press).
Sober, Elliott (2011) 'Evolution without Naturalism', *Oxford Studies in Philosophy of Religion* 3: 187–221.
van Inwagen, Peter (2003) 'The Compatibility of Darwinism and Design', in Neil A. Manson (ed.) *God and Design: The Teleological Argument and Modern Science* (New York: Routledge), 348–63.

Michael Bergmann

Michael Bergmann is Professor of Philosophy at Purdue University.

Cite this article: Bergmann M (2025) Could Darwinian Natural Selection Be Divinely Guided? *Think* **24**, 9–16. https://doi.org/10.1017/S1477175625000144

© The Author(s), 2025. Published by Cambridge University Press on behalf of The Royal Institute of Philosophy.

https://doi.org/10.1017/S1477175625000144 Published online by Cambridge University Press