

The probability of God: a response to Dawkins

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The use of probability in defence of atheism, specifically in Richard Dawkins' book *The God Delusion*, is analyzed. A definition of probability consisting of five parts is used to review the key probability claims made by Dawkins, which relate to the existence of the universe, the origin of God, the possibility of a multiverse, fine-tuning, and the anthropic principle. The concept of God as first cause is defended as a rational proposition that was insufficiently addressed by Dawkins, but provides a logical defence against his core argument. The fine-tuning argument is a teleological argument underpinned by a correct use of probability. This argument demonstrates that a God who is first cause is a more probable explanation for the origin of the observed universe than the naturalist's appeal to mindless processes.

'Probability' is a useful concept, frequently used by scientists and mathematicians. However, probability can be easily misunderstood or misused, a significant risk in the debates over atheism and evolution.

At face value, probability presents significant difficulties for atheists, since they need to believe that everything is the net result of unguided, mindless, random processes. It is difficult to get such processes to account for the fine-tuning of the laws of nature, or the complexity of life, and indeed for many steps in their proposed narrative of origins that are very unlikely and/or currently unexplained. However, in his famous book *The God Delusion* (figure 1), in a chapter titled "Why there almost certainly is no god", Richard Dawkins uses probability as the principal vehicle for his counter-argument: If our universe is improbable, then a supernatural creator capable of making it must be even more improbable, as a consequence of that creator being necessarily more complex. (Of course, we aren't ultimately concerned with whose narrative is *more probable*, but rather which narrative is *true*.)

This article discusses probability in relation to the existence of the universe and its creator and hopefully shows that Christians don't believe in such a very improbable story after all.

What is probability?

In any given context, a good understanding of what is meant by the 'probability' of something can be achieved by identifying the following five components:

1. *Causation*. In all instances when probability is invoked, there is a cause and an effect. For example, if I throw a dice, there is a cause—me throwing the dice—and an effect—the dice landing on a flat surface with one side facing up. Between these there is a chain of causality, facilitated by the laws of physics, taking the dice moment by moment from its initial condition in my hand to its destination on the floor.

2. *Ignorance*. The second part of probability is ignorance. In the case of throwing a dice, I don't know what side of the dice will be facing upwards once it stops rolling.
3. *Knowledge*. The third part of probability is knowledge. In the example of the dice, I know many things. Primarily I know that A) there are six possible outcomes, and B) the dice is entirely symmetrical such that any one of the sides has no geometrical 'advantage' over another.
4. *Proposition*. Where there is ignorance, probability applies to a 'proposed' scenario. For example, I can propose that after throwing the dice, it may land with the three facing upwards. In this context, I can use my knowledge to say that there is a one in six likelihood of the dice landing on a three—this is the probability of my proposed outcome.¹
5. *Direction*. There are two directions to the use of probability. In the above example of throwing a dice, I have knowledge of the cause, but ignorance of the effect—which is here called *forward probability*. In other examples, such as forensic science or medical diagnosis, one may have knowledge of the effect and ignorance of the cause—here this will be called *backward probability*. For example, if I come home to find my television missing, I know the effect and can start assessing the probable cause. A probable cause is that it was stolen; a very improbable cause is that my dog buried it in the back yard.

So what is probability? When you don't know what has happened, or what will happen, probability is a method for *quantifying* what you *do know* (figure 2).

This leads to an interesting insight: probability is not fixed! It is dependent on the boundary between ignorance and knowledge, and this boundary can shift.

What if you used a computer to simulate the throwing of a dice? If you knew entirely what initial position it was in, how it was thrown, and what the air movements were like, you could predict what side it would land on. Now the probability would only depend on the quality of your model. If your model had 95% accuracy, then you could say the probability of getting a particular number (the one predicted

by your model) is now 95%. If you were omniscient like God, then the probability of the outcome would always be 100% (this has led some to believe in determinism²). We only need probability because we have ignorance.

In his book, *The God Delusion*, Richard Dawkins demonstrates an understanding of this starting point when he says, “any probability statement is made in the context of a certain level of ignorance”. Lack of ignorance would make probability redundant.

What is the probability of our universe?

What is the probability of our universe? By itself, this question makes no sense. What’s the cause, effect, knowledge, and ignorance and, most importantly, what’s the proposition?

In this case all our knowledge is the effect (our universe, which we observe every day) and our ignorance is its cause (since the origin of the universe happened long before we were born, none of us observed the cause). So we *should* be

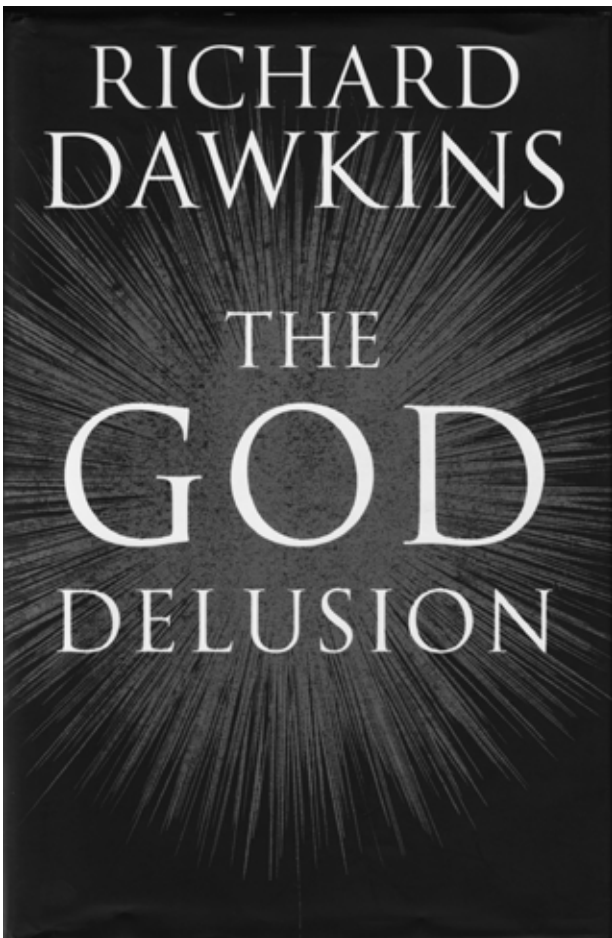


Figure 1. Richard Dawkins' *The God Delusion* is a world-wide best-selling book defending atheism, first published in 2006.

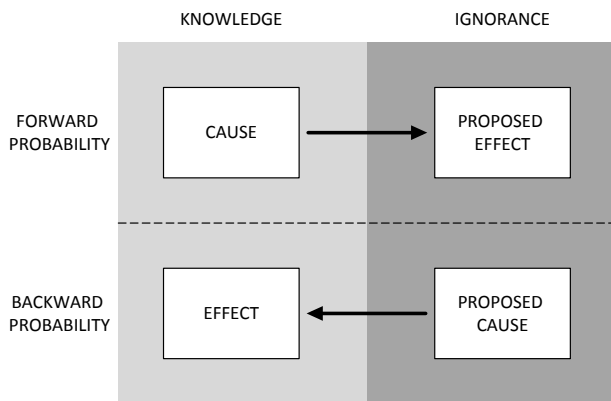


Figure 2. The relationship between the five components of probability—causation, knowledge, ignorance, proposition, and direction

asking in terms of *backward* probability: “What is the most probable *cause* of our universe?”

I think it is this confusion that created the ‘weak anthropic principle’ (i.e. that only in a universe capable of eventually supporting life could there be living beings capable of observing and reflecting upon its unlikely, fine-tuned, and life-supporting properties). It is as if someone considered the question, ‘What is the probability of our universe?’ and realised that our universe *does exist*. As a *known outcome*, its probability is 100%, regardless of the cause. The weak anthropic principle amounts to no more than: “Whatever the cause of our universe, the effect is definitely our universe”—a tautology, and thus true, but it doesn’t mean much. *Getting the direction right is important when using probability.*

But if the probability of our universe is actually 100%, why do we hear (e.g. as part of a fine-tuning argument) that “our universe is improbable”? In this instance, the person saying this is using a shorthand, where they are implicitly proposing a mindless, random cause,³ for the purpose of assessing the forward probability of that cause (e.g. for a logical argument using *reductio ad absurdum*). Dawkins uses the term ‘statistically improbable’ with this shorthand throughout his book, and defines it (albeit in the introduction to his 10th anniversary edition) as meaning “unlikely to come about *by chance* [emphasis added].”

What is the probability of a drawing of a house? It depends. If I throw crayons at a piece of paper, then to end up with a drawing of a house is improbable. However, if I give the paper and crayons to a five-year-old, then a drawing of a house is very probable. By using our five components of probability, we now see that *clarifying the proposition is also critically important when using probability.* The probability of something coming about by chance is only relevant if it *did* come about by chance. And just like with the crayons and paper, the universe may only be ‘statistically improbable’ (as Dawkins calls it) when we propose a mindless and random

cause. Dawkins’ use of this descriptor acknowledges that naturalist theories for the origin of the universe most likely wouldn’t result in the universe.

This so-called ‘improbability of the universe’ is well known in the atheism debate. In *The God Delusion*, Dawkins set out to address this argument from both ends—by trying to demonstrate a relatively lower probability of the theist’s alternative, and to increase the probability of the universe.

What is the probability of God?

Dawkins presents the argument that the improbability of the universe is dwarfed by the improbability of God. He’s using the same shorthand again—assuming a random process as the cause—and effectively there are three different cause-effect relationships that he discusses (each of which are *backward* probabilities), summarized in the following table:

Item#	Known Effect	Proposed Cause	Verdict
1	Our universe comes into being	Random process	Very improbable
2	Our universe comes into being	An act of God	Actually quite probable, if there <i>is</i> a god
3	God comes into being	Random process	Very, very improbable Even less probable than Item 1

You won’t find Item 2 explicit in Dawkins’ book. But you will find he acknowledges that, when looking at the universe, there is a temptation to attribute the appearance of design to a designer. And in his saying that the theists’ ‘design solution’ only *transfers* the problem of statistical probability from the universe to its designer, one can infer that none of the problem is left behind if one concedes the transfer. So when he then argues that God is an improbable *effect*, Dawkins essentially acknowledges that God is a probable *cause*.

God is not an effect at all

The more astonishing thing about this argument Dawkins makes is that Christians, and *all* philosophical theists, *don’t* believe that God was the effect of a random process, or that he is the effect of any other generation process. They rather believe that God had no beginning, is not an effect and has no cause. Dawkins’ probability statement applies to a proposition that no one is proposing! (Hence one response that Dawkins anticipated is a valid response: ‘I don’t believe in the same God that Richard Dawkins doesn’t believe in.’)

Amazingly, Dawkins addresses this argument in his book, *with a single-sentence dismissal*. He refers to Aquinas’ first three proofs of God, the second of which is ‘the uncaused cause’:

“Nothing is caused by itself. Every effect has a prior cause and again we are pushed back into regress. This has to be terminated by a first cause, which we call God.”

Dawkins then states:

“... these arguments rely on the idea of a regress and invoke God to terminate it. They make the entirely unwarranted assumption that God himself is immune to the regress.”

But this ‘unwarranted assumption’ is not an assumption at all—it is the essential tenet of theism and the whole point of the argument. If you follow a path it either terminates or goes on forever. It’s not an *assumption* to say that a termination has the properties of a termination. If the termination has the properties of a continuation then it’s not a termination, and you need to keep looking.⁴ Thomas Aquinas rightly understood that there is either an infinite series of cause and effect or an ultimate cause that is, as Dawkins puts it, ‘immune to regress’.

To assess the probability of God the effect, it is Dawkins that has to *assume* that God *is* an effect of some naturalistic process. He does this in fact for the rest of the argument—and concludes emphatically that it is highly improbable (as represented in Item 3 in the table above). By his own reasoning,⁵ one should then defer to the more probable solution, which is that God is *not* an effect. So the remainder of his argument only goes to show that this ‘assumption’ made by Aquinas is, in fact, warranted—and that without it, God is not God.

An uncaused cause—is that possible?

That God had no beginning and no cause is not easy to comprehend.⁶

We can’t easily think about something unbound by cause because we, and time itself, *are* bound by cause. Every moment of time is caused by the moment that preceded it due to the working of natural laws, many of which are characterised by *conservation*. Mass and energy is conserved, momentum is conserved. Nothing spontaneously begins. Out of nothing, nothing comes—*ex nihilo, nihil fit*.

While *difficult* to fathom it should also be *easy* to believe, for at least three reasons:

The first reason is that logically *something* had to have no beginning or no cause, and it probably wasn’t the universe. If the universe itself began without a cause, this would mean that the very first moment of our universe is fundamentally different to all the others (certainly not a uniformitarian proposition!). The universe’s coming into existence would represent a complete violation of the

conservation laws that have bound it ever since. And when something happens at a point in time, we reasonably ask—due to our long years of experience living in time—‘Why?’ We know that time facilitates causality, and uncaused things cannot happen in time.

A (deservedly anonymous) blogger, quoted by Dawkins in *The God Delusion* said:

“Ask where that bloke [God] came from, and odds are you’ll get a vague pseudo-philosophical reply about having always existed, or being outside nature. Which, of course, explains nothing at all.”

However, that response is not ‘pseudo’ philosophy, but rather, good philosophy. Our universe has properties that make it a poor candidate for an explanation of its own origins. Its bondage to the progression of causality and the persistent direction of that causality, which is towards decay and disarray, mean that it doesn’t have the *expected* properties of a self-existent phenomenon. Consequently, if you are going to propose God as an alternate solution, it would make no sense to ascribe to God those same properties! So clearly an essential feature of the ‘God hypothesis’ (to borrow Dawkins’ phrase) is that God is uncaused and non-decaying—that He always existed and is indeed ‘outside nature’.

This uncaused God, in contrast to an uncaused beginning to the universe, does not defy causality, but fulfils it. This time-*unbound* ‘first cause’ solution is the most elegant solution to the problem of the origins of causality. Something uncaused, caused the universe. This *is* the philosophy of theism.

The second reason this should be easy to believe (at least I find it so) is that the Bible teaches it. It teaches that God is the uncaused cause, and does so very clearly. Thankfully God doesn’t expect us to believe in Him *for no reason*⁷ or for reasons that are outside our mental reach—that is why we have the Bible, and historical record, including miracles. Even the most advanced efforts by the cleverest humans don’t reach consensus, and by looking closer and closer at the issue, we just pull down our own foundations and expose the complete limit to our perspective when we try. In the Bible, God’s name is ‘I Am’—an assertion of His aseity (self-existence) and thus lack of origin. This is a rational proposition from Him, so we can reasonably believe it over alternatives. Other passages provide more clarity, including Ecclesiastes 3:14–15: “I know that whatever God does, it shall be forever. ... That which is, has already been. And what is to be, has already been ...”

The third reason I have, though a bit nebulous, is that alternative solutions amount to the same burden of belief—they’re just as difficult to comprehend!

If our universe was, in fact, eternal and non-decaying—as was believed by the majority of atheists up until early last century—then it would have the same properties and be just

as difficult of explanation as God is. “What made the universe like it is?” one would ask, for which the answer would be: “Nothing made the universe like it is, because nothing made the universe—it has always existed.”

Maybe you can believe that our universe itself could be the uncaused cause and have a spontaneous beginning.⁸ But you will never see Dawkins using this argument. He’ll appeal to the heights of improbability and an unfathomably large multiverse to avoid this. The reason? If you can believe this, then in principle you have accepted all the same logical steps required to believe in theism. If our universe could be uncaused, and hence without need of explanation, then so could God. And when faced with two rational explanations, it seems more compelling to believe the one with evidence.

The anthropic principle in Dawkins’ hands

If I throw a rock to hit a street sign on the other side of the road, with one attempt, I will almost certainly miss. With 10 attempts, I may get a hit. If I throw for a day, it’s almost inevitable that I will hit it several times.

In addition to addressing the probability of God, Dawkins attempts to increase the probability of the naturalistic narrative (Item 1 in the table), by appealing to a very large quantity of ‘attempts’ as capable of explaining any improbable ‘successes’. He calls it the application of the anthropic principle—that is, one success becomes unsurprising *if* there are many other failures around it.

But what if the pole is further away than I can throw? I could have an infinite number of attempts and still never hit it if it is not merely improbable, but impossible. So in his argument, he makes two assumptions. 1) That the spontaneous unguided development of life is *possible*. 2) That there are *sufficient* attempts that an eventual successful outcome is *probable*. He may object to miracles because they aren’t repeatable and are never observed, but in this instance he is trying to provide nature sufficient opportunity to do something also unrepeatable and never observed. However, the magnitude of these assumptions, given the actual improbability involved, is phenomenal!

In reality, for Dawkins these are only assumptions in the same way that Aquinas’ ‘termination’ is an assumption. They are not assumptions. They are the whole point of his argument. They constitute a necessary condition for the naturalist narrative; for naturalism to be true, somehow these assumptions have to be. Those who consider an Aquinas-style ‘uncaused’ God hypothesis *unfathomable* need to contemplate the naturalist miracle of the first ‘simple’ cell. In doing so, they need to face two things. Firstly, Aquinas’ ‘uncaused cause’ may be difficult for the mind to comprehend, but it is possible, and as a solution has higher probability (see table). Secondly, the Aquinas solution

has evidence—both historical and scientific. In contrast, the naturalist narrative is unobserved and cannot even be considered probable with the entire history of the entire observed universe providing opportunity for it. As Sarfati demonstrated in his portion of *Evolution's Achilles Heels*,⁹ if one generously allows that since the beginning of our universe (granting naturalism the vast ages it assumes) there have been 10^{110} opportunities for chemical reactions to create the simplest form of life, this is not nearly enough for an event with a likelihood of 1 in 10^{5035} !

Is the multiverse improbable?

Though Dawkins may contest this assessment of probability and believes that an explanation of chemical evolution will yet be found,¹⁰ he still has to appeal to the *unobserved*, even constructs larger than the universe (see below), to complete the naturalist narrative. (Note that without any role for *observation*, this cannot truly be called science.)

One idea that Dawkins approves of regarding the fine-tuning (and subsequent ‘improbability’) of our universe is the multiverse idea. Of that, he said:

“The key difference between the extravagant God hypothesis and the apparently extravagant multiverse hypothesis is statistical improbability. The multiverse, for all that it is extravagant, is simple. God, or any intelligent, decision-taking, calculating agent, would have to be highly improbable in the very same statistical sense as the entities he is supposed to explain.

“The multiverse may seem extravagant by the sheer number of universes. But if each one of those universes is simple in its fundamental laws, we are still not postulating anything highly improbable.”

Here, the term probable still means the probability of *resulting from mindless natural causes*. But what does his discussion of the ‘statistical probability’ of the multiverse imply? Is he saying that it is not the ultimate reality and creator of our universe, but rather another entity that requires an explanation, in turn, of its origins? The moment he discusses its ‘probability’ he is, by implication, proposing a random cause for it. So his multiverse is just another link in the chain and there is some sort of multi-multiverse or other structure ultimately responsible for it. The bigger problem between these two ideas he is comparing is not their probability or lack thereof. It is the lack of an Aquinas-style *termination* that is robbing his solution of elegance.

This is also a distinctly sloppy use of probability. His assertion of the multiverse’s higher probability is made without any clarity on the multiverse’s definition, much less the proposed mechanism for its origin. He has no working description of the cause, effect or proposition involved in

his probability statement. It is then an enormous assumption that the probability of such a thing would relate only to its simplicity or complexity. Without a proposition of a cause, how can he know that the probability does not also relate to size? What is the probability that three marbles will be on my desk? Is it a lower probability than that four will be there? And much lower than that seven would? You can’t even comment until you have a proposition for how they got there. How can he assert that a multiverse is probable for its simplicity, and not improbable for its size? In addition to this, he assumes the multiverse is simple only because that allows him to apply higher probability, not because of any specific reason that a multiverse would be simple.

The trick of backward probability

When using backward probability (assessing the probability of a cause), a common method is to propose a cause, and then assess the forward probability of the proposed cause by assessing all of its alternative possible effects (already used a few times in this article). The following inference is often made:

If A is unlikely to result in B, then when I observe B, A is unlikely to be the cause.¹¹

This is a *seemingly* logical inference, but not necessarily true. What if *every* outcome of a cause has very low probability? What if there exist no alternative explanations?

For example, if I throw 10 dice, it is very unlikely I will get 10 sixes. The probability is 1 in 60.5 million. Using the above inference, if I see 10 sixes, it is unlikely they were thrown randomly and more likely they were placed deliberately in that arrangement somehow. That is a reasonable inference.

However, what if the dice rolled were 1, 3, 2, 6, 6, 4, 5, 1, 2, 4, in that order? This outcome also has a probability of 1 in 60.5 million, so the same inference should apply—it is unlikely to have resulted from random processes. Yet a rational observer would not doubt that this unpredictable sequence was generated randomly. Why not? Though this outcome is improbable (1 in 60.5 million) it is not *relatively* improbable—it is just as improbable as every other possible outcome.

So now we compare this with the first scenario and ask what makes the inference work for the case involving 10 sixes? For a random process, these two outcomes are equally probable, but for a structured (non-random) process, these outcomes are not equally probable! A thinking human being is more likely to place them all on the same number. Or they are likely to come off the conveyor belt in the factory all with the same orientation. So it is not the relative probability from the random cause that has changed, but the relative

probability from alternate possible causes. Non-random causes are more likely to create non-random outcomes.

Consider a third scenario: Before I roll the dice I predict that I will roll 1, 3, 2, 6, 6, 4, 5, 1, 2, 4, in that order, and then that is exactly what happens! Now you may reasonably say it is unlikely that the dice were rolled randomly and more likely that it was rigged somehow. The reason this time is that I can differentiate a class of outcome. There are two possibilities now:

- A. I could guess correctly with a probability of 1 in 60.5 million, or
- B. I could guess incorrectly with a probability of 99.9999983%.

In this case the *relative* probability of a correct guess is extremely low, though the relative probability of the sequence itself is unchanged from the second scenario.

So whilst it seems logical, the above inference cannot be used without two additional considerations:

1. The *relative* probability of the effect resulting from the *proposed cause*. Are other outcomes any more likely?
2. The *relative* probability of the effect resulting from *alternative possible causes*. Is the relative probability any different if there was a different cause?

Sometimes when these considerations are neglected, people are unlikely to notice. In fact, evolutionists have possibly done their own argument harm due to this error. Consider this famous question: What is the probability that a million monkeys, randomly typing letters, would eventually write Hamlet? Of course that is very improbable. However, even if you had Shakespeare himself *intentionally* writing *non-random* letters you still aren't likely to get Hamlet—especially not *word for word*. After all, Shakespeare wrote some 37 plays, and only one of them is Hamlet. If he were to write a thousand more, Hamlet still isn't likely to recur.

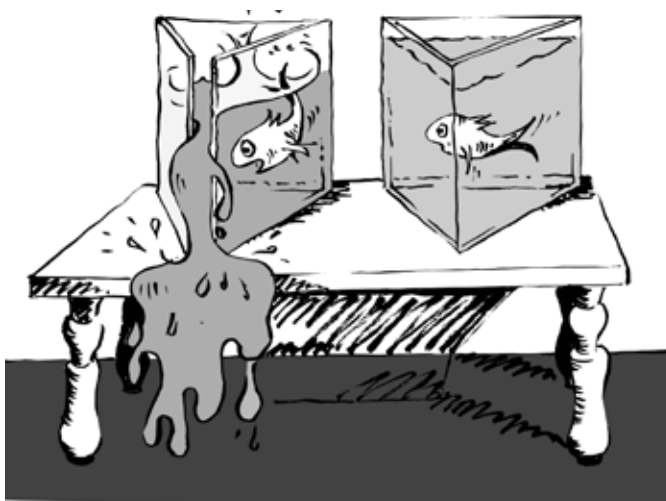


Figure 3. A fine-tuned fish tank—only a slight deviation in the design of the base of this tank will make it incapable of supporting life.

The fact is, you don't really need the monkeys to write *Hamlet*, you just need them to write *a play that makes sense*. What becomes relevant then is the likelihood that a random array of letters will make sense. This is a much higher probability than that a random array of letters will be Hamlet. So with this correction, the probability increases by many orders of magnitude, but when using English letters and the English language, the probability is still vanishingly small.¹² What matters in this situation is not the specific outcome, but the *class* of outcome and its *relative* probability.

Is fine-tuning improbable?

The fine-tuning of the universe refers to the precision required in the design of the universe, and the location of man within the universe, for our life to be possible. The fine-tuning of the laws of nature is a well-established scientific truth.¹³ Because of its quantifiable probability, this has taken its place as one of the strongest teleological arguments for God's existence.

Dawkins objects to the idea of a God who is an "intelligent knob-twiddler, who adjusts the dials of the physical constants so that they have the exquisitely precise values required to bring evolution, and eventually us, into being". However, his argument is not really explained. It seems more an emotive than a rational reaction. After all, he also said that he finds the idea of a multiverse an elegant solution—and the multiverse idea he was referring to is nothing more than an *unintelligent* knob-twiddler that adjusts the dials of the physical constants. So he doesn't have a problem with knob-twiddlers *per se*, just intelligent ones.

However, in saying this, I believe Dawkins is downplaying the higher probability of God as a cause of our universe. By implying that God would use trial and error, he makes it seem that our universe is still improbable even with God as the cause. So if there is a God, what is the relative probability of our fine-tuned universe? Is it any higher than from random causes?

If I were to make a fish-tank with a triangular base (figure 3, right side), then I will create three walls that meet at three edges. Looking at that tank, it could be considered fine-tuned, in the sense that the three sides could more easily *not* make a closed triangle. Let's use some mathematics to describe the base of the tank. As a triangle, the ratio between the sine of the angle on one side and the length of the side on the other would be exactly the same in all three cases that you can measure it (called the *sine rule*). If you lived within that tank, you could observe this, and marvel that any slight variation of this ratio would cause your tank to gain an open edge (figure 3, left side) and leak—hence no longer supporting your life! With some more information, you could perhaps estimate the permissible variation in these

ratios that would cause that leak! You could rightly conclude that a random line-drawing machine drawing sets of three lines on millions of pieces of paper is unlikely *ever* to draw a triangle with the same properties as the base of your tank. As you have described it—your tank is fine-tuned!

However, I as the designer of that triangular base could draw an infinite number of enclosed triangles capable of supporting life in the tank. For me, it is neither amazing nor ‘improbable’ that I stopped my pen where I had started it as I drew up the plans. In fact, it was easy. Shakespeare might as easily have written *As You Like It* as *Hamlet* and been satisfied with the outcome. If we look at God as a probable cause, then our exact universe is still improbable. But only in the sense that Shakespeare writing *Hamlet word-for-word* is improbable, or me drawing that specific triangle is improbable. But what’s the *relative* probability of the *class* of outcome? Is it really knob-twiddling to draw a triangle?

We’re made in God’s image—though our brains may consist of chemical processes, we have an awareness; we have capacity for abstract thought, imagination, and creation. Though our power to both think and act on our thoughts is limited by nature, this ability is still modelled off God, and this argument can also be used for God. Thinking is in God’s nature, and He does it with ease. There is a greater *relative* probability that an intelligent God would make a universe *that makes sense* rather than a universe that doesn’t. Or, to paraphrase John Lennox, it makes complete sense that a rationally intelligible universe would ultimately be derived from an eternal, rational intelligence.

References

1. In this instance, my determination of the probability comes from my knowledge of its symmetry; in other instances my *knowledge* of probability may come from *statistics*. Statistics is the measurement of past outcomes, and is the counterpart to probability. If I threw the dice 3,000 times, and it landed on a ‘three’ 1,000 times, then I could say that the *statistical* probability of getting a three is one in three (with a measurable confidence—the more times I throw it, or the greater my sample size, the greater my confidence in my prediction). In this hypothetical case, my statistics tell me I probably have a loaded dice!
2. Determinism says that if one could know the current location of every atom in the universe, every bit of light, *all* activity in the universe in this moment, and feed all that knowledge into a simulation that knew all the laws of nature—then one could predict the entirety of the universe’s future exactly, and no alternate future is possible.
3. This use of probability as a property is frequent in explanations of the second law of thermodynamics, where the ‘probability’ of a given macroscopic state (macro-state) is a property that directly relates to its entropy and means the proportion of unique micro-states that would result in that macro-state. Homogeneity or equilibrium is the most probable macro-state because the largest number of unique micro-states would result in it, and the law says that real processes always work towards this most ‘probable’ (highest entropy) state.
4. Like a Hindu might learn about gods that are clearly insufficient to be the ultimate origin, and hence continue enquiring until they learnt of Brahman, the only Hindu god with the attribute of aseity (self-existence).
5. Dawkins: “... the fact that we can neither prove nor disprove the existence of something does not put existence and non-existence on even footing”.
6. ‘Has no beginning’ is in fact an understatement to most theists. We have no reason to think that God’s existence is even a chain of causality. In addition to having no beginning, His infinite life isn’t necessarily arranged as a chronological ‘sequence’ like our finite lives are. God has thoughts and is intelligent, so contains *logical* sequence in some way. He can interact with

us in time, and was able to cause time. Beyond that we are entirely out of our depth, as God Himself says in the Bible: “For as the heavens are higher than the earth, so are my ways higher than your ways and my thoughts than your thoughts” (Isaiah 55:9). God is *outside* of time. C.S. Lewis once described it that time is a line drawn on an infinite piece of paper that starts at one point and then continues infinitely after that. And God is the piece of paper. To put it another way, the God we may interact with today, has access to no less a vivid or complete knowledge of the future or the past than he does of the present. Our knowledge of the past, in contrast, is incomplete and inaccurate, and we have no knowledge of the future at all. See how the deeper we look, the more difficult the ‘uncaused cause’ is to fathom?

7. This is in contrast to the common erroneous way in which ‘faith’ is used by atheists and unfortunately by some Christians, that it is belief in something *for no reason*, rather than belief in something *without complete proof*. The former would be what we call ‘blind faith’. Blind faith is rather foolish, is not the faith commended in the Bible (Hebrews 11) and is never expected by God in the Bible.
8. Though it’s hard to reason about something we can’t really fathom, one might think self-creation would give the universe a scary instability. It popped into existence once, so why doesn’t it ever undergo spontaneous change again, or pop out of existence? One might perceive that at its core, an uncaused universe must retain the ability to do uncaused things. The rules governing its predictability are themselves uncaused and hence could at any moment unravel.
9. *Evolution’s Achilles’ Heels*, authored by nine Ph.D. scientists, Creation Book Publishers, Powder Springs, GA, 2014; creation.com/s/10-2-640.
10. Dawkins in *The God Delusion*: “I shall not be surprised if, within the next few years, chemists report they have successfully midwived a new origin of life in the laboratory” and “I do not for a moment believe the origin of life was anywhere near so improbable [as to occur on 1 in a billion planets] in practice” and “I think it is worth spending money on ... SETI, because I think it is likely that there is intelligent life elsewhere.”
11. People familiar with philosophy and logic will recognize the contrapositive. If the likelihood is made to be zero (i.e. A cannot possibly result in B) then this inference reduces to the law of the contrapositive and is true. But if the probability is only very, very close to zero, this inference may become completely wrong.
12. Since mathematicians started playing in the mud with biologists, this problem has been better defined and assessed. Statistics have been brought to bear to define the tendency of random genetic ‘words’ to have meaning and specifically to be better than whatever words were modified incrementally to write them, and the problem facing neo-Darwinian evolution has only become worse. Refer *Genetic Entropy* by J. Sanford.
13. Lewis G.F. and Barnes, L.A., *A Fortunate Universe: Life in a finely tuned cosmos*, Cambridge University Press, 2016; see review by Statham, D., in *J. Creation* 32(1):48–52, 2018.

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