

A User's Guide to Teleological Arguments

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Abstract:

In this paper we provide a conceptual map to contemporary design arguments. We argue that there is a tension between two types of design arguments—the fine-tuning argument and the biological design argument. Furthermore, we argue that given certain plausible assumptions the arguments are inconsistent with one another. We sketch a resolution to this conflict that will allow one to offer a two-step design argument beginning with the fine-tuning argument and ending with the biological design argument. However, we argue that this strategy is not as advantageous as the alternate strategy of embracing the conflict and presenting a one-step design argument. An interesting result of our argument is that theists may accept radical self-organization scenarios that are commonly thought to threaten theism. On the conception of the design argument we recommend, these self-organization scenarios are actually evidence for theism!

I. Introducing the Problem

In general arguments from design seek to infer the existence of God from general patterns of order in the universe. There are broadly two arguments from design. First, the fine-tuning argument argues to the existence of God from facts pertaining to the initial conditions of the universe and its fundamental laws. Second, the biological design argument argues to the existence of God from facts pertaining to the existence of complex organisms. These arguments can be stated in many forms, but for precision and comparability we will limit ourselves to Bayesian formulations of these arguments. It is our belief that any cogent form of the argument will be Bayesian in nature, but we do not argue this point here. The currently wide-spread use of the Bayesian framework should be enough to justify this limit in scope.

In rough outline the fine-tuning argument proceeds as follows: The a priori probability¹ that the initial conditions of the universe and the values of the constants of the fundamental laws would lie within the range they do seems incredibly low. But if

theism were true it would be much more likely that these conditions and constants obtain than if theism were false. So the fact that the initial conditions and the constants of the fundamental laws lie within the life-permitting range provides evidence for theism.

The biological design argument proceeds as follows (again in rough outline): it's incredibly unlikely that complex organisms would exist in our universe. But if theism were true, it is much more likely that complex organisms would exist than otherwise (for God could guide the process of evolution along, intervening when necessary). So the existence of complex organisms provides evidence for theism.

In this essay, we will be investigating the nature and consequences of the following conflict. Given certain commitments by advocates of the fine-tuning argument (hereafter FTA) we should think that our universe is “stacked,” i.e. the odds of intelligent moral beings arising given fine-tuning is quite high, perhaps greater than half. But given certain commitments by advocates of the biological design argument (hereafter BDA) we should think that our universe is not “stacked”. With C stating the initial conditions and laws of our universe and L stating that intelligent moral beings (of limited power and knowledge) exist, the FTA advocates seem committed to the claim that $\Pr(L/C)$ is relatively high, but the BDA advocates seem committed to claiming that $\Pr(L/C)$ is very low; for, otherwise, there would be no warrant for inferring a personal explanation for L .

Before we set out the conflict in detail, however, we note that a prominent advocate of the FTA seems committed to the claim that $\Pr(L/C)$ is relatively high.

Richard Swinburne, in The Existence of God (revised edition) writes:

[God] has the power and abundant reason for putting in such a universe intelligent organisms. He could do so either directly or indirectly, making the world with boundary conditions and scientific laws such as to give rise to intelligent organisms. All the evidence accumulated by scientists over

the past 200 years shows overwhelmingly that present-day intelligent organisms evolved gradually from inanimate matter in accord with scientific laws over thousands of millions of years. So God did not produce intelligent organisms directly. But if all evidence is that the occurrence of boundary conditions and laws such as to permit and make probable the evolution of intelligent organisms are *a priori* very unlikely, then that is evidence that God brought them about, and thereby indirectly brought about the existence of intelligent organisms. *He made an intelligent-organism-producing universe.* With *e* as laws and boundary conditions such as to make likely the evolution of intelligent organisms, *h* as the hypothesis of theism, *k* as the existence of a universe governed by some laws of nature or other $P(h/e.k) > P(h/k)$, indeed $P(h/e.k) \gg P(h.k)$.²

This passage suggests that Swinburne thinks the $Pr(L/C)$ is high³ (to revert back to our notation). The italicized claim entails that God brought about a “stacked” universe. What is interesting about Swinburne’s argument here is that it seems to require that the biological argument does not work!⁴ We claim that reflection on the tension between the FTA and BDA leads to the discovery that a cumulative case argument for theism should not include both the FTA so conceived and the BDA. Why? In short, the FTA advocates should be committed to the $Pr(L/C)$ being relatively high, while the BDA advocates are committed to the $Pr(L/C)$ being extremely low.^{5,6} While we recognize that the arguments may be formulated so that they are not inconsistent, this strategy does not have any obvious advantages and further it has some negative consequences. All this requires argument, to which we turn now.

II. Locating the Conflict

How is it that FTA advocates should be committed to $Pr(L/C)$ being relatively high and biological design advocates are committed to $Pr(L/C)$ being very low? Both the FTA advocate and the BDA advocate start from some datum and proceed to infer that

God exists. The more surprising a phenomenon is, the better evidence it makes. Both parties take as their datum some phenomenon they take to be surprising.

The FTA advocate begins with the fact that the initial conditions and fundamental laws of the universe—our C above—fall within a very narrow range required for complex life to exist. They note that on the supposition that God exists—call this supposition T—this would not be so surprising after all, since God presumably has good reason to bring about such a universe, i.e. $\Pr(C/T)$ is fairly high (at least not very improbable), so unless the prior probability is very small relative to the prior of the evidence—which we will assume is not the case to isolate the problem under consideration— $\Pr(T/C)$ will be significantly greater than $\Pr(T)$. Now the FTA advocate doesn't need T to entail C—i.e. $\Pr(C/T)=1$ —or anything of the sort. It merely has to be significantly more probable than it would otherwise be. The crucial claims are that

- (1) The initial conditions of the universe along with its fundamental laws lie within a very narrow range necessary for life.
- (2) That (1) is true calls out for explanation.⁷
- (3) That T would explain why (1) is the case.
- (4) Apart from T, C would remain quite surprising.

Accordingly, they consider that C is evidence for T. The reason behind (3) is that we would expect C given T, $\Pr(C/T)$ is fairly high (at least not very low). And the reason for this is that C is likely to realize a good—the existence of rational moral beings of limited knowledge and power⁸—which, we may presume, God would want to bring about: i.e.

Pr(L/C) is fairly high.⁹ If Pr(L/C) were very low, then, given the presumed intention to realize L, God would have little reason to bring about C.

The allegedly surprising datum from which BDA advocates start is the existence of complex biological organisms—say, human beings, L. L calls out for explanation. Since, the BDA advocate alleges, L is extremely unlikely to be the result of natural laws and the initial conditions alone, it is necessary to postulate a designer who purposely brought about L. The crucial thing to notice here is that L warrants personal explanation only if it is extremely improbable that it would have obtained “on its own,” i.e. without intervention into the course of nature. If the BDA advocate thought that L was not incredibly improbable given C then L is amenable to an impersonal explanation in terms of the laws and initial conditions of the universe, thus undercutting the need for a design inference. If one thinks that C requires personal explanation precisely in virtue of the fact that it falls in the narrow range allowing for the evolution of life then in this case then the individual is no longer offering a BDA at that point; rather they are offering an FTA (whether one can profitably do both at the same time is the main subject of this paper). So a BDA argument requires that Pr(L/C) is very low indeed, for the BDA is inferring nothing less than a miracle. But here’s the rub: *this is in opposition to a crucial component of the FTA*. The FTA works only if Pr(L/C) is fairly high. Even low ranges of Pr(L/C) for the FTA are many orders of magnitude greater than Pr(L/C) necessary for a BDA.¹⁰ For this—together with God’s intention to bring about L—is what explains why God would bring it about that C. Without this component T has no explanatory power with respect to C, and thus C would not be evidence for T as the FTA advocate alleges.¹¹

Let us put one objection to rest immediately. Note that the L of the FTA is the existence of moral rational beings of limited knowledge and power, while the L of the BDA is the existence of human beings. One may argue that there is no conflict since these are different facts. Moreover, the objector continues, since these are different facts one may maintain that the probability of rational moral beings given C is high enough for a FTA and also maintain that the probability of human beings given C is low enough for a BDA. So there is no tension with two-step design arguments.

This objection, however, is unsuccessful. For, if the probability of human beings given C is low enough to allow for a BDA then the probability of the existence of rational moral beings given C will not be high enough to allow for an FTA. Why? Suppose one tried to maintain otherwise. Given C it's very likely that there will be rational moral beings of limited knowledge and power. But given the many different ways this can be realized (e.g., Vulcan, Gardassian, Bajoran, Ferengi, and—though just perhaps!—Klingon) the existence of human beings is unlikely. Should we then explain the existence of human beings by way of the creative activity of a supernatural being? No. Given C, human beings are just one of the many ways rational moral beings may arise. Consider the following analogy to reinforce this point. Suppose there is a lottery drawing tomorrow. The fact that a particular ticket will win is not surprising even though the odds of that ticket's winning are $n-1/n$ for a lottery with n -tickets. Similarly, given a universe that makes the existence of rational moral beings very likely, the existence of human beings will not be very surprising. This shows that these facts are related in such a way that one cannot escape the conflict we describe by merely pressing on the

difference between these facts. For the remainder of the paper we will make the simplifying assumption that L expresses the same fact in both the FTA and the BDA.

III. The Strong & Weak Fine-tuning Arguments: A resolution we don't recommend

A natural response to this conflict is to suggest that the FTA advocate doesn't need $\Pr(L/C)$ to be very high. $\Pr(L/C)$ could be quite low actually, indeed low enough for the BDA. The objector may continue that—after all— $\Pr(L/C)$ doesn't even figure in Bayes' Theorem for assessing $\Pr(T/C)$. So the FTA advocate does not need $\Pr(L/C)$ to be high. According to this strategy, the FTA arguer just needs it to be the case that $\Pr(C/T)$ is significantly greater than $\Pr(C/\sim T)$.¹²

We acknowledge that this is a plausible move and indeed it allows for a “weak” fine-tuning argument (the WFTA) that is consistent with the BDA. We want to argue, however, that there is a strong fine-tuning argument (the SFTA) that is more resilient than the WFTA and further that the SFTA has many other advantages over the WFTA. Moreover we think that theists have a not insignificant reason to favor the SFTA. As a consequence we think that theists have a not insignificant reason to think that the BDA does not succeed and that a self-organization scenario may very well be true. Further we will argue that the WFTA faces some tough questions.

To make these points with sufficient clarity we will turn from our informal presentation of the conflict to a more formal presentation. In the following we give precise numerical assignments to the probability of various claims. We do not pretend to have any special insight into what these values should be. We do not assert that there even exist precise numerical values. However, we do claim that there are fairly plausible

upper and lower bounds to these values with which we can calculate a reasonable assignment for the various claims. We think that by being extremely generous with the assignments we can reasonably determine intervals within which any plausible value must fall.

The WFTA differs from the SFTA primarily in that $\Pr(L/C)$ for the WFTA is low enough to allow for a BDA, whereas it is not on the SFTA. Using the odds form of Bayes's theorem¹³ $\Pr(C/T)$ must be greater than $\Pr(C/\sim T)$ for C to provide confirmation for T, assuming that the difference among the priors does not swamp the difference among the likelihoods.¹⁴ A problem for the WFTA, though, is that T must predict C. For if T does not predict C then $\Pr(C/T)$ may be equal to or less than $\Pr(C/\sim T)$. We think that T does not make likely a C such that $\Pr(L/C)$ is very low.¹⁵ Fortunately the WFTA does not need T to make likely a C such that $\Pr(L/C)$ is low. All the WFTA needs is that $\Pr(C/T)$ is much greater than the $\Pr(C/\sim T)$. Let us see how this works out for the WFTA.

It is reasonable to think that $\Pr(C/\sim T)$ is at least as low as 10^{-16} . Even if the prior for T is relatively low (say 1 in a million chance of occurring) as long as the $\Pr(C/T)$ is much greater than 10^{-16} then C will provide significant confirmation for T. Given the following assignments: $\Pr(T)=.000001$; $\Pr(C/T)=.00001$; and $\Pr(C/\sim T)=10^{-16}$ the Odds Form of Bayes's Theorem gives the result of $\Pr(T/C)/\Pr(\sim T/C)$ as 10000.01. This shows that even granting a significant difference among the priors the result of adding C (in this specific case) confirms T over $\sim T$. Hence a WFTA can be successful with assignments constant with a BDA.

It is important though that the prior of T remain relatively high. For given the same values as the prior of T diminishes by one order of magnitude so the confirmatory

power diminishes by one order of magnitude. The interesting result is that if T's prior diminishes by 4 orders of magnitude from 10^{-6} to 10^{-10} then given the above assignments the odds form delivers the crushing result that $\Pr(T/C)/\Pr(\sim T/C)=1$. This means that even though the odds *ratio* (the ratio among the likelihoods) may significantly favor T over $\sim T$ with respect to C the difference among the priors swamps the advantage. From this one can easily see that if the prior of T decreases further then the overall result of adding C into one's total evidence does not make T more likely than $\sim T$.¹⁶ It is thus crucial for the advocate of the WFTA to ensure the prior of T remains relatively high. One way to lower the prior of T is to complicate the theistic hypothesis by introducing additional content to the theistic hypothesis that is not derivable from the basic constituents of the hypothesis itself. As we will argue below this difficulty with the priors is much more problematic for the WFTA than for the SFTA. We do acknowledge, however, that given certain assignments the WFTA is both a significant reason for theism and consistent with the BDA. The problem, however, is ensuring that those assignments are both stable and reasonable. We argue below that the assignments may not be reasonable. Further we think that empirical data may threaten the stability of those assignments and thus continually threaten to undermine the WFTA.

The SFTA will assign $\Pr(C/T)$ to be much greater than the WFTA assigns it. We think a reasonable assignment is .7.¹⁷ Moreover we think that the prior of T on the SFTA is greater than 1 in a million, but we will assume otherwise to isolate the contrast with the WFTA. Thus given the same assignments as above with the purposed change to $\Pr(C/T)$ the odds form delivers the result that the ratio $\Pr(T/C)/\Pr(\sim T/C)=700,000,700$ (or approximately 7×10^8). The interesting result is that the prior of T can decrease by 8

orders of magnitude and still the overall result favors theism. If it decreases by 9 orders of magnitude then we get the result that difference among the priors swamps the difference among the likelihoods so that the end result is that $\sim T$ is more likely than T . The upshot of all this is that the SFTA can take a substantive hit to the prior of T and remain a significant argument for theism. Moreover as we will argue shortly the WFTA in contrast to the SFTA is open to a serious challenge on its prior of T . So not only is the WFTA less resilient than the SFTA with respect to the prior of T it faces a serious challenge to its prior. This leads us to the judgment that the defender of the FTA should favor the SFTA, and thus should be committed to an assignment of $\text{Pr}(L/C)$ that is inconsistent with the BDA.

Another point is worth making if only in passing. The WFTA is also more vulnerable to arguments that $\text{Pr}(C/\sim T)$ is higher than 10^{-16} . Now we think that 10^{-16} is a generous assignment, but it is easy to see that if it is raised then the WFTA is threatened more so than the SFTA. We will not develop this point further but we claim that the WFTA is vulnerable to two lines of attack, attacks against $\text{Pr}(T)$ and attacks against $\text{Pr}(C/\sim T)$. The SFTA fares better on both fronts.¹⁸

IV. Objections & Replies

We now turn to entertain some objections to our argument. The first objection we consider is that our argument assumes that God is interested in creating a “stacked” universe—a universe that makes probable the naturalistic development of intelligent moral beings. Thus our argument assumes that God is interested in efficient universe creation. But efficiency is a virtue only for beings like us, beings with limited resources.

Since God is not limited in such a manner we needn't assume that God's creative activity will be governed by considerations of efficiency.¹⁹

This objection correctly notes that efficiency is a virtue for beings with limited resources. We, however, do not want to reason to an efficiency principle (EP) from any such connection. Rather we conceive of (EP) as a principle of rational action. Rational action is efficient. Rational action is action based on reasons. When a rational agent acts on the basis of reasons the agent brings about a state of affairs for the purpose of achieving the agent's goal. If an agent brings about a state of affairs for the purpose of achieving the agent's goal and yet it's not likely that that state of affairs will achieve his goals then some explanation is called for. For instance, if I want a cup of tea and take tea bags, water, and the kettle and put them in the dishwasher, then some explanation of my action is called for. Why? Because, given that I want a cup of tea putting all those things in the dishwasher does not make it likely at all that I'll get a cup of tea. We submit that a suitable explanation must be available to account for the agent's apparent irrational action. This can be done by observing that the agent is irrational or that the agent lacks some relevant knowledge or power. Another possible explanation is that the agent has other goals that make the action a rational means to those goals. But some explanation is called for; otherwise the action is mysterious—not based on reasons and thus not rational action. So we think the nature of rational action yields a *prima facie* reason to expect efficient action, including God's creation of the world.²⁰ For folks that can't live without a specific principle we offer a rough-and-ready one:²¹

(EP) Agents act rationally only when they purposefully bring about states of affairs that are likely to achieve their goals, given that they do not lack the relevant knowledge or power.²²

Since God lacks neither knowledge nor power he will act in a way that is likely to achieve all his goals.

Let us be clear on how (EP) functions in our argument. Given the truth of (EP) once you fix God's goals, you thereby gain a reason to think that God will accomplish those goals in the fewest possible acts. Thus, on the assumption that God's goal is G and that it's possible to accomplish G either by one act or two acts (EP) specifies God will choose one act. To put the point a bit colloquially: given (EP) we should assume God will be a symphony man rather than a jazz man.

From this point forward we will operate on the assumption that (EP) is true. If the reader disagrees, she may read on anyway, since our overall project is one of logical cartography. So given that FTA advocates hold that God intends to bring about intelligent life, he will create a universe that is life-producing, not merely life-permitting. A life-producing universe is one in which it is likely that life will exist given its initial conditions and laws. A life-permitting universe is one in which it is not likely that life will exist given its initial conditions and laws even though it is nomically possible that life exist. Thus FTA advocates should be committed to the SFTA rather than the WFTA and as a consequence FTA advocates cannot use the BDA.

The objection that our argument assumes that God is interested in bringing about a stacked universe may be pushed farther along the following lines: God may have other purposes and those purposes may require that he create a life-permitting universe not a

life-producing universe. So even assuming the efficiency principle, it seems that FTA advocates aren't committed to $\text{Pr}(L/C)$ being high.²³

We note several problems with this response. First, some other goals must be given. It's not enough just to advert to "other" reasons merely as conjecture. This would be an argument from ignorance. The way explanatory arguments for theism work is to posit a person with unlimited knowledge and power who therefore is willing and able to bring about states of affairs which are, at a minimum and on balance, good. Then, to the extent that the obtaining states of affairs are on balance good and that they are quite inexplicable apart from personal explanation, it is reasonable to infer that God brought them about to realize the good they contain. So the foe of a stacked universe would need to argue that creation in many acts realizes a greater good than creation by a single act.

Further, positing more complex goals has the potential to hurt the WFTA as well as help it. Suppose God wanted to display his power²⁴ and this means that God would first create a world and then create life. Now here's the problem: if that's the case why didn't God create a universe that does not permit life at all and then suddenly change the nature of the universe so that it both permitted life and contained life.

Perhaps, to anticipate another line of thought, God wanted to put a distinctive seal on human life by specially creating it. Still, this could be done by means of connecting human souls with bodies suitably evolved in a universe where $\text{Pr}(L/C)$ was adequately high.²⁵ Finally, it might be thought more beautiful to paint a world in multiple strokes. But why is this more beautiful than the classical elegance of pre-planned harmony. Consider an example from pyrotechnics. The beautiful multi-stage explosions of the best fireworks are the result of building the rocket right and then just lighting the fuse. The

beautiful and dynamic result comes from planning and precision engineering. In short, it is hard for us to imagine a consideration offered on behalf of two-stage creation which couldn't be just as well achieved with a single creation.²⁶

It might be replied that the SFTA advocate owes some explanations too. For example, why would God bring about C as a means to L when he knew the path would be strewn with pain and predation? This doesn't seem like a rational means to the end, so what explanation does the SFTA advocate offer for that inefficiency?²⁷ That is a good question and we have this to say in reply. First, this paper is part of a larger project of pursuing integrity in natural theology. We refuse to exaggerate the evidence on behalf of a cherished thesis, nor will we allow our theorizing to be guided by ease of theodicy. We are not here denying the plausibility of evidential arguments from evil. If they work, they clearly lower the probability of theism: both by subtracting from the cumulative case and—more directly in this context—robbing T of some of its predictive power. It may well be that for some C* such that $\Pr(L/C^*) \approx \Pr(L/C)$, $\Pr(C^*/T) > \Pr(C/T)$. That is, there may be some universes that are just as likely to achieve the good God is expected to bring about but lacking some features we may not expect. This will clearly lower the predictive power of theism with respect to this world, if the evidential problem of evil can be sustained.

Furthermore, surely this is *at least* as big a problem for the WFTA. The proponent of the SFTA can make wide usage of the account of God's plan given by van Inwagen²⁸ (which we are prepared to accept) according to which God's plan is identified with (roughly) the sum total of God's decrees where those decrees leave much to chance.²⁹ As a result, the evils of the process were not intended parts of God's plan. If

the WFTA advocate is correct, God is implicated for more direct responsibility for some of those evils, since he specially intervenes in the process. According to a typical SFTA advocate, the fact that many organisms have to over-produce by a large margin to overcome low survival rates is an adaptive accident not prevented by God whereas a typical WFTA will see this as a divinely ordained method of assuring the propagation of the species.

Another difficulty for the WFTA is the problem of the priors that we mentioned above. For either FTA to work the prior probability of T must be non-negligible. Swinburne has illustrated that $\text{Pr}(T)$ is not negligible given that theism posits a very simple being with just a few properties³⁰ held in the simplest way.³¹ The SFTA claims to derive from T itself that God is likely to bring about the existence of intelligent moral beings (see note 17). If the WFTA is to introduce other goals such that those goals make God intend to bring about a mere life-permitting universe then those goals must be derived from the theistic hypothesis itself. If they don't, then it complicates the theistic hypothesis and so lowers its prior. And as we illustrated above the WFTA cannot survive a substantial hit to its priors.

Moreover, given that an infinite number of hypotheses conjoining T with some other purpose can be generated, it is absolutely essential that the WFTA derive the other purposes from T itself.³² The WFTA advocate cannot simply posit the additional goals to get theism to predict a mere life-permitting universe. We think a virtue of the SFTA is that it keeps T simple.

We will now consider a theological issue which might be thought to bear unfavorably on the SFTA. In the end, whether the data supports the WFTA—that is, it turns out that $\text{Pr}(L/C)$ is extremely low—or the SFTA—i.e. it turns out that $\text{Pr}(L/C)$ is quite high—must determine how teleological arguments are run. There are two questions which, when taken together, constitute an interesting situation: is $\text{Pr}(L/C)$ very low or not, and what does T predict? The data is not yet conclusive with respect to the first question and the second is a matter of some dispute. We cannot address the first question, but we have indicated our leanings on the second one. We have suggested that T predicts that $\text{Pr}(L/C)$ is high. This is what underwrites a higher value for $\text{Pr}(C/T)$ in the SFTA than in the WFTA. In what follows we consider and attempt to rebut a theological reason to think that T does not predict the high value of $\text{Pr}(L/C)$.

It might be objected by some readers that the argument commits us to deism. We have talked of God's bringing about that C obtains and then, as it were, sitting back and watching the show (at least until beings with free will show up). Let us say at once that we are happy with an account of creation which includes God's sustaining, at every moment, each particle in existence and, at every moment, causing it to have the causal powers it has. As van Inwagen has described, this amounts to God's issuing certain decrees from moment to moment: "Let *that* now exist and have such-and-such causal powers."³³ Ordinarily, God issues the same decrees from moment to moment. On van Inwagen's definition of 'miracle', a miracle is not an "intervention" into or a "violation" of nature or its "laws". It is simply a brief interval during which God, for some reason, issues different decrees than He usually does: say, he causes the molecules on the surface

of a body of water to have unusual causal interactions so that a man can walk on it and demonstrate his uniqueness.

We want to use this picture to emphasize that we do not conceive of God in deistic terms. God is intimately involved in every event at every time. Note, though, that the deviation from the norm calls for some explanation. Presumably, God doesn't just get bored. This latter point has two consequences. First, as stated above, the advocate of the WFTA owes an explanation of why God would change his decrees, interrupt a stream of consistency. The WFTA is essentially claiming that God performed a miracle in bringing about biological complexity. For what reason would he do that? There's no one around at the time to impress. Moreover it frustrates our goal of genuine scientific knowledge—something which is enough of a good to require explanation for why God would hinder us in that ability. Perhaps it could be to some effect on future persons by leaving some trace. Assuming $\Pr(L/C)$ is very low we humans can look at the existence of complex life forms and say: it's a miracle! But to what avail? What's the point of this miracle? The advocate of the WFTA carries the extra burden of answering these questions.³⁴

We think it far more prudent not to try to get the God of Abraham, Isaac, and Jacob out of a teleological argument. The existence of the "God of the philosophers" would make it quite reasonable to look into the claims to revelation by various religions. Perhaps further evidence of a historical nature could indicate that the abrahamic God exists. Our feeling is that those who oppose (EP) are reading too much into T.

Concluding observations

We have offered reasons for thinking it preferable to advocate an SFTA. However, in the end we are merely concerned with having performed a bit of logical cartography. We have described several positions in logical space and argued that they are not all compatible. So at the very least, this essay is a clarion call for design arguers to be circumspect in their theorizing. Some prominent defenders of the FTA—such as Swinburne and Leslie—indicate that they conceive of it in terms of the SFTA. This is in direct opposition to a Bayesian interpretation of intelligent design theory which operates on the assumption that life in this universe is practically a miracle.³⁵ It is interesting to note that the SFTA and the BDA are two prominent forms of the design argument to date and that further evidence must refute at least one of them. We find that it is not uncommon in conversation with intelligent non-philosophers and even occasionally with philosophers sensitive to theism that there is a tacit assumption that these two arguments are woven together into a larger apologetic fabric. However, this is simply not possible for reasons we have drawn attention to. We have shown that there is a weak version of the fine tuning argument which is compatible with the intelligent design movement in its Bayesian guise and to this extent there is potential harmony between the FTA and the BDA. However, if future evidence shows that the universe is in fact strongly fine-tuned as Swinburne suggests, it could spell the end of the intelligent design movement as it now exists—with its focus on improbable biological phenomena—since there would seem to be no further need for a personal explanation of the existence of complex life. The only data left to be explained would be the fact that the initial conditions and laws were of just the right kind for producing complex life. This is the data from which fine-tuning

arguments proceed. Moreover, a not insignificant result of favoring the SFTA is that objections to the biological design argument along the lines of some sophisticated self-organization scenario are not thereby objections to theism. In fact the SFTA predicts that some self-organization scenario is true!

¹ The form of probability with which we will be primarily concerned in this paper is a form of conditional epistemic probability where $\Pr(h/e)$ is the probability a properly functioning rational agent attending to the evidence would have. When we speak of prior probabilities we will be suppressing for stylistic reasons that prior probability is a relative notion, sometimes taking more into account sometimes less as we go about learning. Often the prior probability will be conditional only on tautological information. Further, we will be assessing this from the standpoint of an “outsider”, a view that does not assume the agent knows what we know but is appropriately epistemically innocent.

² The Existence of God rev. ed. (Oxford: Clarendon Press, 1991): 303.

³ In private correspondence Swinburne has attested: “in order to have an argument from fine-tuning - I need to appeal to the 'scientific view that the laws and initial conditions in our universe make it very probable that human life will evolve” referring to page 189 of the Second Edition of The Existence of God.

⁴ John Leslie, another prominent advocate of the fine-tuning argument, seems to think that the BDA does not work.

⁵ As we will explain below there is a way to run the FTA without the $\Pr(L/C)$ being relatively high. There is not, however, a way to run the BDA with the $\Pr(L/C)$ being relatively high (and thus consistent with a strong FTA).

⁶ We have presented what we believe a Bayesian version of the BDA must look like and what its advocates are committed to. It is natural to wonder whether the results of this paper will apply to non-Bayesian probabilistic BDA's, such as the much-discussed “design inference” of William Dembski—see *The Design Inference: Eliminating Chance Through Small Probabilities* (Cambridge University Press, 1998). The answer to this question will depend upon the relationship between classical statistical inference—Fisher-style significance testing in particular—and Bayesian inference. We believe that classical statistical

inference is cogent only if translated into Bayesian terms, in which case we think Dembski's method will be subject to our results. However, arguing for this thesis is far beyond the scope of this paper. For a Bayesian criticism of Fisherian statistical inference see Howson and Urbach *Scientific Reasoning 2nd Ed.* (Open Court, 1993), Chapter 8, pp. 178ff.

⁷ We see Bayesianism as the proper rigidification of talk about explanation. Thus, when we talk of explanation we always intend it to be understood in a Bayesian way with explanatory or predictive power tied to likelihoods and simplicity tied to prior probability.

⁸ For stylistic reasons we will henceforth omit the phrase "of limited knowledge and power" though it will be understood that this is what we have in mind. For the importance of this, see Swinburne, *op. cit.* 160.

⁹ This assumes that mind-body dualism is false. If minds cannot evolve from physical things then the $\Pr(L/C)=0$. Since we tend to think that emergentism is true, we note this and move on. Of course, by our reckoning, if dualism is true and the efficiency principle is true then it seems like God would favor direct creation.

¹⁰ We think this is intuitively quite obvious once pointed out. We have been intentionally vague about the ranges involved, but we think it plenty clear that if A requires that x be very low and B requires that it be fairly high, A and B are in conflict. We also think it very clear that the BDA requires a very low value for $\Pr(L/C)$, one much much lower than a good FTA will require. However, below we consider numerical outcomes based on plausible assignments.

¹¹ Perhaps we do overstate a bit—there is a version of the fine-tuning argument that may still provide evidence for theism (we call it the Weak-FTA or WFTA), but for reasons that will be apparent later theists should not take solace in this fact.

¹² The observant reader will note that $\sim T$ includes many other supernatural hypotheses, some of which entail C. We make the simplifying assumption that $\sim T$ is naturalism. This assumption is harmless. We think the main competing hypotheses must be relatively simple and that the naturalist hypothesis is the most simple of the hypotheses that compete with theism.

¹³ Robin Collins, major proponent of the FTA, states that he is concerned only with the results given the odds form of Bayes's Theorem. See <http://home.messiah.edu/~rcollins/finetech.htm>. He says "We will formulate the fine-tuning argument against the atheistic single-universe hypothesis in terms of what I will

call the prime principle of confirmation. The prime principle of confirmation is a general principle of reasoning which tells us when some observation counts as evidence in favor of one hypothesis over another. Simply put, the principle says that whenever we are considering two competing hypotheses, an observation counts as evidence in favor of the hypothesis under which the observation has the highest probability (or is the least improbable). (Or, put slightly differently, the principle says that whenever we are considering two competing hypotheses, H1 and H2, an observation, O, counts as evidence in favor of H1 over H2 if O is more probable under H1 than it is under H2.) Moreover, the degree to which the evidence counts in favor of one hypothesis over another is proportional to the degree to which the observation is more probable under the one hypothesis than the other” then immediately adds in a footnote “For those familiar with the probability calculus, a precise statement of the degree to which evidence counts in favor of one hypothesis over another can be given in terms of the odds form of Bayes's Theorem: that is, $P(H1/E)/P(H2/E) = [P(H1)/P(H2)] \times [P(E/H1)/P(E/H2)].$ ”

¹⁴ We return to this issue shortly.

¹⁵ Here we use ‘C’ in a general way to indicate *a* universe’s initial conditions and fundamental laws.

¹⁶ In fact ~T remains more likely than T. Of course, the difference between the two significantly decreases.

¹⁷ We expect many readers will balk at this claim. However it is reasonable to suppose that if you know a person’s beliefs and desires (and their strengths) you can infer their purposes with a high degree of accuracy. Richard Swinburne has argued for this point in Epistemic Justification (New York: Oxford University Press, 2001). Swinburne writes,

If we know some person’s desires and their strengths, and know in what circumstances they believe they are situated—we can infer their purposes, often with logical probability 1. And, if we know their means-ends beliefs, and their basic powers, we can then infer their actions. If we know of Jones that he desires to eat lunch at 1 p.m. each day, has no other desire that leads to a different purpose at 1 p.m. today, and believes that it is 1 p.m. now, we can infer that he will form the purpose of going to lunch. From that, his belief that lunch is obtainable most readily in the lunch room and his having the power to move thither, we can infer (with probability 1) that he will go to the lunch room (p. 79).

We derive from theism that God has the desire to bring about a good state of affairs; the better the state of affairs the greater desire God will have to bring about that state of affairs. It is a good that intelligent moral beings exist. Thus God has a desire to bring about intelligent moral beings. We think, though we will not argue for it here, that this is a great good and consequently God has a strong desire to realize this good. Given that God is not limited in either knowledge or power he will bring about a state of affairs that will make likely that his desire is fulfilled. Thus, assuming that God does not have other desires that complicate this result (we consider this below), it is expected that God will bring about a universe whose boundary conditions and fundamental laws make likely that intelligent moral beings exist. Hence the P(C/T) will be very high; an assignment of .7 reflects this fact. Here, as we observed in note 15, we are using C to indicate *a* universe's initial conditions and fundamental laws.

¹⁸ We concede, however, that if the WFTA stands, it is a strong argument for theism.

¹⁹ We thank Greg Welty for holding our feet to the fire on this point. In the recent literature on efficiency in creation there have been some rather shrill reactions against efficiency, see Jay Wesley Richards, "Howard J. Van Till's 'Robust Formational Economy Principle' as a Critique of Intelligent Design Theory," in *Philosophia Christi* (2002) 4:1, 101-112, followed by a brief exchange with Van Till.

²⁰ It might seem that the dishwasher example is uncharitable, for the seemingly irrational actions are not in any way a means to an end of getting a cup of tea. There's no natural two-stage process it fits into, whereas one is present in the case of the WFTA: First God creates a life-permitting universe, then he creates a life-sustaining one. However, we think this is special pleading, for the BDA requires that nothing less than a miracle occur to bring life into existence.

²¹ We conceive of this principle as being defeasible in the sense that it is open to some adequate explanation of why an agent would deviate from efficiency.

²² We think that (EP) can be derived from the principle to maximize expected utility. Here is a brief informal proof: Suppose an agent S is only concerned with realizing outcome *o*. Suppose five options are relevant to S's decision. Therefore by the principle to maximize expected utility S should choose the option that has highest (subjective) probability of achieving outcome *o*. But this is just to say that S acts rationally only if S chooses the action that has the highest probability of realizing S's goal. If we shift to

objective probability then we must add that the qualifier “assuming the agent lacks neither knowledge (specifically of the relevant objective probabilities) nor power. So we have EP.

²³ Jay Wesley Richards in *op. cit.* pp.109-110 suggests no less than a dozen different reasons ranging from the mundane to the bizarre. Almost all of the ones worth taking seriously are perfectly consistent with Pr(L/C) being very high, as Van Till points out in his reply.

²⁴ Incidentally we think it’s a pretty awesome display of power and knowledge to create a universe that has it all written in from the start.

²⁵ Our thanks to Richard Swinburne for suggesting this point.

²⁶ At this point we are not addressing the concern that God may intervene in the world as a result of the activity of moral beings, perhaps to right a great wrong or to answer prayer.

²⁷ This question was put to us by Greg Welty and Lydia McGrew.

²⁸ “The Place of Chance in a World Sustained by God,” in Thomas Morris, ed., Divine and Human Action (Ithaca: Cornell University Press, 1988), 222ff. Reprinted in Peter van Inwagen, *God, Knowledge, and Mystery* (Cornell University Press, 1995), 42ff.

²⁹ *Ibid*, 52ff.

³⁰ In *The Christian God* (Oxford University Press, 1994), Swinburne considers a single property—“pure Limitless Intentional Power” from which it is plausible that all God’s other properties follow (see esp. pp. 150ff). Most theorists take God to have three core properties: knowledge, power, and goodness. See Wierenga *The Nature of God* (Cornell University Press, 1989), p. 1 and Hoffman and Rosenkrantz *The Divine Attributes* (Blackwell, 2002), p. 15. Swinburne thinks God’s goodness follows from his perfect freedom and omniscience, but that perfect freedom does not (*Christian God*, 151). We personally think that perfect freedom is also derivable from omnipotence and omniscience, but on any traditional account bare theism is a very simple hypothesis. Attributing to God any intention that does not follow solely from the intrinsic goodness of the act requires going beyond simple bare theism to attributing *particular* intentions to God which we see as drastically lowering the prior probability of theism given the vast array of intentions God might have.

³¹ I.e. with no finite measure.

³² M.C. Bradley makes a similar point though in a different context. See Bradley “The Fine-Tuning Argument: the Bayesian Version” *Religious Studies* 38 no. 4 (2002): 375–405.

³³ “Chance,” 219.

³⁴ We suspect that whatever the WFTA advocate appeals to can be also accomplished by a life-producing universe. See the above section on the WFTA advocate appealing to God’s power in a two-stage creation.

³⁵ Adherents of that theory will likely deny that the theory itself survives translation, but that is a matter that need not be settled here since our point is meant to apply to our interpretation. As we have said, we think that Fisher-style statistical inference is bankrupt and the only way to push a probabilistic BDA is as we have presented it. However, our present thesis does not depend on the latter one.