

7

Ultimate Design

7.1 Introduction

In Chap. 4, I have presented the evidences of fine-tuning and order of the universe, demonstrated that the following are the only possible categories of hypotheses concerning ‘fine-tuning and order’: (i) Chance, (ii) Regularity, (iii) Combinations of Regularity and Chance, (iv) Uncaused, and (v) Design, and ruled out (i), (ii), and (iii). In this chapter, I shall rule out (iv) Uncaused, defend the conclusion of Design against scientific, philosophical, and theological objections, and demonstrate the superiority of the design inference used in this book compared with alternative approaches.

7.2 Against the ‘Uncaused’ Hypothesis

It has been suggested that ‘fundamental laws might be brute facts, meaning that they have no explanation at all’ (Sober 2019, p. 37). The Hartle–Hawking model which has been discussed in Chap. 6 is an example of a cosmological model in which the laws of nature (in this case, the laws of

quantum gravity) exist as an uncaused brute fact in an initially timeless and beginningless state. Concerning fine-tuning, Oppy (2013) suggests the possibility that the properties of the naturalistic initial state of the initial singularity lay in certain appropriately narrow ranges, which guaranteed that it is metaphysically necessary that subsequent natural causal reality would be life-permitting.¹ To explain why the physical entities are sustained in an orderly manner, one might appeal to a non-causal explanation of some sort in terms of deeper metaphysical principles. For example, Lange (2009) tries to explain why the laws are true by appealing to the (purported) fact that no matter how things had started out, the laws would still have been true, and then explaining why that counterfactual is true, by saying that no matter how things had started out, that counterfactual itself would still have been true, and so on *ad infinitum* (he calls this ‘the lawmaker’s regress’) (p. 146). If it is a law that p , then various subjunctive facts explain why p is the case, and for each of these subjunctive facts, various further subjunctive facts explain why it is the case, and so forth. All of those subjunctive facts help to make it a law that p (p. 149). Each of the subjunctive facts that helps to constitute a law’s necessity is itself metaphysically necessary, its necessity constituted by other subjunctive facts that help to constitute the law’s necessity (p. 155). Others have suggested what makes laws metaphysically necessary are essential properties of the natural kinds (Ellis 2001) or dispositional properties (Mumford 2004).

There are at least two problems with such views.

First, all such models in which the laws of nature are brute fact cannot work because, as explained in Chap. 6 while discussing the Hartle–Hawking model, an infinite regress of events is not possible and in order for the first event to begin, it must be caused by an initially changeless First Cause with libertarian freedom. In other words, the first event must have been brought about freely, and not in a law-like way which guaranteed that it is metaphysically necessary that subsequent natural causal reality would be life-permitting (cf. Oppy 2013). Thus, the First Cause which caused the first event cannot be part of the physical universe which is constantly changing and does not have libertarian freedom, and therefore it cannot be a naturalistic initial state postulated by Oppy (2013). Rather, as shown by premises 6–11 of the KCA-TA, the First Cause is

uncaused, beginningless, initially changeless, has libertarian freedom, and is enormously powerful, that is, a transcendent immaterial Creator of the Universe. This implies that the physical universe cannot be the uncaused First Cause; rather, it has a first event, which implies it has a beginning and therefore (according to Causal Principle) has a cause, and hence its properties of being fine-tuned and highly ordered would also have a cause. We need to ask why, after the First cause brought about first event (regardless of whether this is the first event *of our universe* or the first event of something else), it eventually resulted in a fine-tuned and highly ordered universe.

Second, Frederick notes that, while the sceptic might claim that the laws of nature are metaphysically necessary, this does not answer the question of how it could be necessary that unthinking, mindless things always accord with natural laws (Frederick 2013, pp. 272–273). While Lange, Ellis, Mumford et al. attempt to provide a *non-causal* explanation of what makes the laws metaphysically necessary, this does not answer the question of how it could be necessary that unthinking, mindless laws always accord with such an explanation, in such a way that the order within the universe can be described by sophisticated mathematical equations which indicate a high degree of ordering. In other words, their explanation does not answer how it could be necessary that the subjunctive facts (Lange) or the physical entities have stable essences (Ellis) or dispositions (Mumford) that persist throughout time which enable them to behave in ways describable by such mathematical laws. Likewise, saying that it is just the nature of physical entities to behave in such an orderly manner does not answer how the nature of unthinking, mindless things could be such that they (almost) always accord with natural laws describable by mathematical equations (e.g. Schrodinger equation, Dirac equation, etc.), such as the highly intricate order of quantum mechanics which scientists observe from moment to moment.

Leslie (1989) asks us to consider a hypothetical scenario in which ‘particles regularly formed long chains which spelled out ‘GOD CREATED THE UNIVERSE’, this then being shown to result inevitably from basic physics’ (p. 109). It would be unconvincing to object that this is not evidence of design by claiming that the laws of nature are metaphysically necessary and are brute facts or that this is the only universe that we have

observed. The point of this hypothetical scenario is that it is likewise unconvincing to object that our fine-tuned and highly ordered universe is not evidence of design by claiming that the laws of nature are metaphysically necessary and are brute facts or that this is the only universe that we have observed.

Some physicists seem to have thought of the laws of physics as the uncaused cause of the universe.² The problem with this view is that, as explained in Chap. 2, a law of physics is not a concrete thing but merely a description of behaviour of concrete physical things, and descriptions by themselves do not make things happen one way or another. Therefore, the laws of physics cannot be the uncaused cause of the universe. Something else is needed; that is, a concrete First Cause is required to make the universe in accordance with the descriptions of the laws of physics, and to be able to do that the First Cause would have to be intelligent as well (like an architect making a house in accordance with the description in the blueprint).

Leslie (1989) however has attempted to offer an alternative explanation for the lawfulness of the universe by saying that it is a prerequisite for having a good universe, and that there is a teleological explanatory principle that favours goodness, a view which he traced back to Plato in which reality is structured after the Form of the Good on which all existent things owe their being. He claims that the abstract ethical requirement that the good exist has ‘creative power’ partially to determine (or simply constrain) which possible world exists. Leslie (2016, p. 51) states that “The Good is “what gives existence to things””. In answer to the question whether the abstract ethical requirement would be too purely abstract to act creatively, Leslie (1989, p. 169) writes:

Well, if by ‘being purely abstract’ you just mean ‘having no practical power’ then you entirely beg the question against Neoplatonism when you classify ethical requirements as always ‘purely abstract’. Surely requirements for the existence of things are not at all clearly realities of the wrong sort for bringing things into existence. (The abstract truth that two and two make four, or the fact that quadratic equations cannot ride horses, would in contrast be realities quite wrong for this task.)

In other words, what Leslie meant by abstract ethical requirement is not what modern philosophers mean by abstract when they refer to (say) $2 + 2 = 4$, that is, things with no causal power (see Chap. 3). Rather, what Leslie meant by abstract ethical requirement is something that have causal powers (indeed, he uses the term ‘creative power’). Thus, what he meant by ‘abstract’ is really what modern philosophers would call ‘concrete’ causes. (Rosen 2020 notes that ‘Plato’s Forms were supposed to be causes *par excellence*, whereas abstract objects are generally supposed to be causally inert in every sense.’) Hence, what Leslie calls an ‘ethical requirement’ is actually what modern philosophers would call a concrete necessary existing First Cause that has creative power to bring about universes. However, as explained above, such a First Cause would have to have libertarian freedom and intelligence in order to bring about the first event resulting in a fine-tuned and ordered universe. Hence, such a First Cause would be a Creator God.

Against calling this ethical requirement ‘God’, Leslie (2016) argues that the ethical requirement is that which accounts for why a world-creating deity exists (p. 54). While noting the strong tradition that God’s existence is necessary because God is eternal, Leslie (1989, p. 168) objects that ‘the eternal may not be necessary at all; it is logically possible that a thing should simply happen to exist eternally.’ Leslie’s argument is similar to the Leibnizian and Thomist Cosmological Arguments which claim that, even if the universe is eternal in the sense of having no beginning, it is not necessarily existent³ and would still require a Necessary Being or a sustaining First Cause to explain its existence. Proponents of these arguments would claim that being beginningless is a necessary condition but not a sufficient condition for necessary existence.

The Leibnizian and Thomist Cosmological Arguments are controversial and it is beyond the scope of this book to settle the controversies here. The following points would suffice to address the issues that are relevant here.

First, it has been explained in Chap. 6 that the Thomist idea of Pure Act is not justified, for one can hold to the alternative view of a First Cause having libertarian freedom to freely actualize its own potential and this would terminate the hierarchical causal series. Second, the postulation of a First Cause that is both beginningless and not being sustained in

existence would terminate both the temporal causal series and a hierarchical causal series. Given a First Cause (call this God) that is both beginningless and not being sustained in existence, it is not it is logically possible that God ‘happens to exist’ given that ‘happens’ (occurs, comes into being)⁴ involves a beginning whereas God (the First Cause) is beginningless. Existing without a beginning and not being sustained in existence implies that God was not brought about; that is, He is uncaused. This is not a case of making its own quality justify its own existence. In fact, it would be fallacious to think of something beginningless as being dependent on its own property of beginningless for its existence, since beginningless is merely a description of the way it has existed (see Chap. 3). The question ‘what makes the First Cause beginningless?’ is illogical, since being beginningless and unsustained implies that it is uncaused and that nothing makes it this way. Likewise, even if (as Leibniz argues) the First Cause has other properties in addition to beginninglessness which explains why it exists necessarily, it would be fallacious to think of the First Cause as being dependent on that property, since that property would merely be a description of the way it has existed. In any case it should be noted that, as demonstrated above, what Leslie calls an ‘ethical requirement’ with creative power is really ‘a Creator God’ rather than ‘a property of God which explains why God exists necessarily’. However, if by ethical requirement Leslie intends to refer to what modern philosophers would call an abstract object, then as noted in Chap. 3, abstract objects merely describe relations or possibilities, or are merely exemplifiable by things; they do not make things happen and have no creative power to bring about the first event. Thus, in any case the conclusion that a Creator God exists cannot be avoided.

7.3 In defence of Design

As shown by the logically exhaustive list in Chap. 4, the only remaining category of hypotheses is (v) Design. In what follows, I shall reply to various objections against the likelihood of Design.

Philosopher Willem Drees claims that introducing a god as an explanatory notion only shifts the locus of the question: Why would such a god exist (Drees 1996, pp. 267–269)? Likewise, Dawkins has asked the infamous question, namely, if the laws of nature are designed by a God, then who designed this God (Dawkins 2006, p. 188)? Dawkins thinks that consideration of this question renders the existence of God unlikely. He writes:

The whole argument turns on the familiar question ‘Who made God?’, which most thinking people discover for themselves. A designer God cannot be used to explain organized complexity because any God capable of designing anything would have to be complex enough to demand the same kind of explanation in his own right. God presents an infinite regress from which he cannot help us to escape. This argument ... demonstrates that God, though not technically disprovable, is very very improbable indeed. (Dawkins 2006, p. 109)

In reply, the assumption that complexity by itself requires a designer (‘any God capable of designing anything would have to be complex enough to demand the same kind of explanation in his own right’) is false. The reason is as follows: ‘Design’ is a causal notion; ‘ x is designed’ means that x is *caused* to be what it is in accordance with the purposes of a designer. Now it is important to note that the often-held assumption that ‘everything has a cause’ is false.⁵ What the Modus Tollens argument for the Causal Principle in Chap. 3 has shown is that everything *that begins to exist* has a cause. However, if something is without beginning and is not being sustained in existence, then it was not brought about by a cause; it didn’t come from nothing nor from anything (since ‘brought about’ either implies a beginning of existence or being sustained in existence). Such a thing is uncaused, which implies nothing designed it. As explained in previous chapters, the KCA demonstrates that an infinite causal regress is impossible and that there is a beginningless and uncaused Divine First Cause of the universe. The word ‘God’ is used to refer to the First Cause, which (as explained in Chaps. 3 and 6) is beginningless, initially changeless,⁶ and exists uncaused and necessarily and hence undesignated and not fine-tuned, regardless of whether God is complex or

simple. Whereas (as explained in Chaps. 3 and 6) physical entities have beginnings and they change continually; therefore, they exist contingently and require an explanation for why they behave in an ordered way.

To elaborate, note that what Dawkins means by organized complexity is something that is composed of a variety of parts arranged in a highly specific manner (Dawkins 1986, Chap. 1). The word ‘arranged’ implies a beginning to the formation of the arrangement of the parts. It is evident that our physical universe is composed of parts that can be separated from one another, and that these parts can be arranged (e.g. separate pieces of wood can be arranged to form a table). However, a First Cause (God) which is beginningless and initially changeless is not formed by the arrangement of parts, since arrangement implies a beginning and a change whereas the First Cause is beginningless and initially changeless. Therefore, even if Dawkins argues that the ideas in God’s mind are parts of God’s mind and that God is complex in this manner, it would still remain the case that God does not need a designer because His complexity is of a different sort. That is, as Glass (2012, p. 50) observes, God’s mind is not composed of a variety of parts that are arranged together to form the mind of God. This view does not require the notion of divine simplicity (the view that God has no part whatsoever); I have argued in Loke (2014, 2018) that there is insufficient philosophical, theological, or Scriptural justification for this notion. The word ‘part’ can simply mean that which in some way falls short of being the whole of that entity; this does not imply that the parts are caused or that the parts had been put together to make up the whole. Neither does it imply that the parts are independent and separable. I have argued elsewhere that God’s mind can be conceived of as an undivided intuition (Loke, forthcoming). Postulating that the being of God has parts does not violate divine aseity, because one can deny that there is a dependence of the whole on the parts, since the parts and the whole in this case are uncaused and the parts are not prior to the whole.

On the other hand, physical entities have beginnings and they change continually; therefore, they exist contingently and require an explanation for why they behave in an ordered way. Consider the hypothetical scenario by Leslie (1989) noted earlier: a scenario in which ‘particles regularly formed long chains which spelled out “GOD CREATED THE

UNIVERSE,” this then being shown to result inevitably from basic physics’ (p. 109). One might ask whether a designer would not be required if the basic physical laws in this case are beginningless, unsustained and metaphysically necessary brute facts. In reply, as explained in Chap. 2, a law of nature is not a concrete thing but merely a description of events. However, each formation of the long chain as well as each event which ground such a formation has a beginning, and thus (on the basis of the Causal Principle) has a cause. Therefore, these events are not necessary but contingent; that is, they are dependent on their causes, such that later events would have been different if earlier events are different. Moreover, as explained in Chap. 5, a series of events cannot be infinite in the earlier-than direction; therefore, it cannot be beginningless. An atheist might suggest that perhaps the series of events of our universe originated from a physical entity (say) an initial singularity which has no parts and is initially changeless, rather than a Creator. However, as explained in Chap. 6, in order for an initially changeless entity to bring about the first event, it must have libertarian freedom. Furthermore, for it to bring about a series of events that result in a high degree of specified complexity such as the mathematically describable order and fine-tuning, it would require intelligence because other alternative explanations would not work as argued in earlier chapters. Therefore, the initial entity has to be a Creator and Designer.

Oppy has also objected that, since (according to proponents of the KCA) God (the First Cause) could have freely chosen to make a physical world in which it was not the case that highly ordered mathematical theories apply, the existence of a physical world in which such theories apply is a brute contingency on this theistic view just as it is on a particular naturalistic view. Thus, this theistic view does not provide a superior explanation than naturalism for our highly ordered universe, for ‘when we get to free choice, and you think, “Why this rather than that?”, there’s no explanation now to be given of why you ended up with one rather than the other’ (Oppy, in Craig 2020). Craig replies that ‘On theism, the applicability of mathematics to the physical world is a contingency, but it is not a brute contingency (a “happy coincidence”). It has an explanation in the free decision of a transcendent, personal Designer’ (ibid.). Oppy

would object that ‘Why God freely chose X (our highly ordered universe) rather than not-X’ is still a brute contingency.

In reply, first, while on the theistic view it is a brute contingency why God freely chose X, it is not uncaused, because the choosing of X is caused by God (see further, below); thus, it does not violate the Causal Principle established in Chaps. 2 and 3. Whereas to postulate our highly ordered universe began uncaused (which Oppy has suggested, see Chap. 3) would violate the Causal Principle.

Second, while it is a brute contingency why God freely chose X (our highly ordered universe) rather than not-X, it is nevertheless chosen for a reason (e.g. to manifest His wisdom) and involves design by a highly intelligent designer who has the capacity to bring about and thus explain the existence of our highly ordered universe. Whereas to postulate our highly ordered universe began uncaused does not explain why our universe is highly ordered, since ‘began uncaused’ imply the denial of any such capacity. In other words, on the Design hypothesis, the high degree of ordering of our universe can be accounted for given a highly intelligent Creator who has the capacity to bring about such a high degree of ordering, even if the reason for creation is not a sufficient condition and even if ‘why create rather than not create’ is not fully accounted for by the reason but is an act of free choice and brute contingency. Whereas on Oppy’s hypothesis discussed in Chap. 3, there is no capacity for explaining the high degree of ordering of our universe. (As an analogy, SETI [Search for Extra-Terrestrial Intelligence] researchers can reasonably conclude that Extra-Terrestrial Intelligence exists if they pick up a certain signal under certain circumstances, given their knowledge that an Intelligence with the relevant capacity is required to produce the signal. This conclusion should be accepted even if we do not know why the ETI choose to produce [rather than not-produce] the signal [for all we know, this may be a brute contingency due to the libertarian free choice of the ETI], and even if we do not yet have independent evidence for ETI producing the signal.)

In response to the above two objections, Oppy might defend the alternative possibility that our highly ordered universe did not begin uncaused but instead arose indeterministically from a metaphysically necessary,

impersonal, and highly ordered initial state of reality in accordance with necessary natural laws which are indeterministic.

In reply, first, I have argued above in Sect. 6.4.1 that the problem with this postulation is that the metaphysically necessary initial state of reality is initially changeless, immaterial, and has libertarian freedom, and therefore it is not impersonal.

Second, the hypothesis of an uncaused and un-designed Mind as the First Cause does not face the problem which besets the hypothesis of an uncaused and un-designed universe. That is, the former hypothesis can satisfactorily explain how mindless physical entities can *consistently* behave in an orderly manner which can be described by mathematical equations, and how it can consistently manifest a uniformity and rationality which human rationality can discern and systematize. Whereas the latter hypothesis, being mindless, cannot explain these satisfactorily, as argued previously. As Rasmussen and Leon (2018, pp. 104–105) elaborate using the notion of intentionality:

Fundamental reality has intentional powers, which themselves do not depend upon fine-tuned material conditions. Intentional powers allow the foundation to aim for interesting ends, such as an evolution leading to a complex creature who can make a princess drawing. With intentional powers at the foundation, we have a mechanism to explain why the world unfolds toward something beyond merely dots of dust. This mechanism provides a probability pump, which renders organized complexity far more probable/expected. Of course, a mind that itself depends on material complexity would only relocate the problem; its existence would then be just as surprising (i.e., improbable) as the material complexity we are seeking to explain. For this reason, a foundational mind would, by hypothesis, be a mind that exists prior to material complexity. The foundational mind does not depend on organized complexity; rather, it provides the ultimate explanation of all organized forms.

Moreover, to postulate our universe arose indeterministically from a metaphysically necessary, impersonal, and highly ordered initial state of reality does not explain why our universe is fine-tuned. As argued in Chap. 4, the fundamental principles or laws of nature do not uniquely determine a fine-tuned universe (and avoid the Boltzmann Brain

problem, etc.), and ‘physics is blind to what life needs. And yet, here we are’ (Lewis and Barnes 2016, p. 181).

Against the existence of an Immaterial Mind, it might be objected that our experiences of human minds indicate that they do not exist apart from the body. This claim has been challenged by other scholars using various arguments for substance dualism, including the evidences of near-death experiences (Loose et al. 2018). In any case, the claim is based on a limited sampling of human minds on earth; it does not show that an immaterial mind cannot exist anywhere else in the universe or apart from the universe. The association of physical brains with minds can be regarded as an accidental property akin to human beings have always lived on the Earth, which was true until 1968. Out-of-body experiences are intelligible notions, even if one does not believe them. Likewise, a timeless immaterial mind is an intelligible notion and not self-contradictory, and indeed most philosophers throughout history have no problem conceiving it, and this is the reason for thinking that mind-physical dependence is ‘accidental’ to the notion of a mind.

One might object that, given that the minds which we know of (e.g. human minds) are in time, the view that there can be an initially timeless Divine Mind is special pleading. In reply, special pleading is an informal fallacy wherein one cites something as an exception without justifying the special exception. Saying that God’s thoughts are initially timeless is not a case of special pleading because there are at least two justifications for it, namely:

1. The premises of the KCA-TA, from which it follows that an initially timeless Creator and Designer exists.
2. God’s thoughts can be fundamentally similar to ours in the sense that they involve intentionality, awareness of logical relations, and so on—there is no need to be in time in order to possess these properties. Likewise, having intelligence means having knowledge, understanding, foresight, wisdom, purpose, and intention; it does not mean/ imply/require having spatial or temporal extension. One can think of a Mind having an initially timeless awareness of truths (including truths about highly ordered structures) and which has the capacity to bring about something in accordance with these truths.

Against the conclusion of a Designer, Hume has objected that the 'design' seems to be less than perfect; for example, if the purpose of creating the universe was to allow for life, this universe shows examples of 'imperfect design', such as the presence of natural evil such as tsunamis, hurricanes, and so on that destroy life (Hume 1779/1993, pp. 68–69, 71, 113).

Nevertheless, this objection does not show that the existence of a Designer is unlikely—at least, not on my argument-by-exclusion formulation of the design argument.⁷ To illustrate, if one were to discover in the midst of a jungle a factory which has the capacity for making motorcars, one would reasonably conclude that it was designed even if some of the equipment in the factory were faulty and even if all the cars would be destroyed eventually (e.g. due to corrosion of its parts). The reason is because it is unreasonable to think that the components of the factory were fundamentally brought together and assembled by Chance, Regularity, or Combinations of Regularity and Chance, or that the factory began to exist Uncaused, and as explained previously the only remaining explanation is Design. The fact that some of the equipment in the factory were faulty or that the parts are corruptible does not refute this conclusion and could be due to various other reasons. One might think that it is due to an imperfect designer, but it could also be due to another person who came and disrupted the factory after it was built, or it may be due to a perfect designer who allows for these imperfections for his other purposes which we are presently unaware of. Thus, on the one hand, the conclusion that the designer is unlikely or the designer is imperfect does not follow from the presence of imperfections in the factory, because there are alternative explanations which need to be considered and ruled out (and they have not been ruled out). On the other hand, the conclusion that a Designer exists follows from the existence of the factory given that we have ruled out the alternative explanations to Design.

Likewise, even though there are imperfections within the universe, it remains the case that the evidence of fine-tuning and the laws of the universe which are describable by sophisticated mathematical equations indicate the existence of a Designer. The reason is because, as explained in previous sections of this book, it is unreasonable to think that the

fine-tuning and order were brought about by Chance, Regularity, or Combinations of Regularity and Chance, or that they are Uncaused, and the only remaining explanation is Design. The fact that there are imperfections within the universe does not refute this conclusion and could be due to various other reasons. One might think that it is due to an imperfect designer, but it could also be due to another person (e.g. fallen angelic beings) who disrupted the designer's creation (Peckham 2018), or it may be due to a perfect designer who allows for these imperfections for his other good purposes which we are presently unaware of.

Goff (2019, p. 107) notes that theists can try to come up with explanations for why God would allow suffering, but he objects that this can seem like special pleading or ad hoc alterations. However, this objection would not work if the explanations given are justified on the basis of reasons/evidences and/or follow from the postulation of theism itself. For example, Goff (*ibid.*) complains that the observation that life had come about through the gruesome process of natural selection falsified theism. However, he fails to note that it has been argued that choosing to care for the weak, lonely, and vulnerable is a harder thing for humans to do in a Darwinian world, and this makes moral behaviour such as freely choosing to care for those in need to be of great value, and hence God who cares about such moral value chose to create a Darwinian world in which moral behaviour that are of such great value can exist (Peels 2018). Moreover, the wonders of nature, which include the incomprehensible degree of fine-tuning and the 'very advanced mathematics' involved in constructing the universe (Dirac 1963) explained in Chap. 4, indicate that the Designer's wisdom far exceeds ours. Given the evidence for the existence of such a God, 'we should not expect to grasp more than a small fraction of either the goods which lead God to act as God acts (including divine acts of allowing evil) or the constraints that make such divine allowings needful' (Perrine and Wykstra 2017, p. 86). Therefore, even though we may not know the reason why God allows certain instances of suffering, that does not mean there is no good reason which is known to God.

Sober (2019, pp. 51, 67) objects that the last response to the problem of evil, namely, that it is very hard for human beings to understand what God's goals are, would likewise undercut the Teleological Argument, for

how then could we know that God would want to create a world that could support intelligent life?

In response, we can know that there exists a Designer who wanted to create a world that could support intelligent life by ruling out all the possible alternative explanations for such a world (viz. (i) Chance, (ii) Regularity, (iii) Combination of Regularity and Chance, and (iv) Uncaused), and this has been accomplished in the earlier parts of this book, but we have not ruled out all the possible good purposes which this Designer (whom we call ‘God’) might have for allowing imperfections. The Teleological Argument for the existence of God does not require direct access to the purposes which the mind of the Designer (if such a Designer exists) would have—indeed, we have no such access⁸—but only direct access to the world of the phenomena by which we can discover the phenomena of fine-tuning and order and infer that there is a Designer by ruling out the alternative explanations (see further, Sect. 7.6). Whereas the argument from evil against the existence of God requires the proponent of the argument to rule out the purposes which the mind of the Designer (if such a Designer exists) might have in order to rule out the possibility that there might be good purposes for why the Designer (if He exists) might allow suffering, but given the failure to do so, the argument fails. (The literature on the problem of evil is huge and it is beyond the scope of this book to discuss this issue further;⁹ for examples of other responses, see Loke 2022a and the sources cited.)

Thus, on the one hand, the conclusion that the designer is unlikely or the designer is imperfect does not follow from the presence of imperfections in the universe, because there are alternative explanations which need to be considered and ruled out (and they have not been ruled out). On the other hand, the conclusion that a Designer exists follows from the existence of fine-tuning and order of the universe, given that we have ruled out the alternative explanations to Design in previous sections of this book. It might be objected that we have not established that the Designer is indeed perfect or morally good, but a proponent of the Teleological Argument can reply that it is not the purpose of the argument to do so (see further, Chap. 8).

It should also be noted that the Teleological Argument does not require the premise that there is order everywhere. For example, think again of

the factory in a middle of a messy jungle. Even though there is disorder everywhere around the factory, the presence of the factory would still require an explanation—how did the parts of the factory (e.g. the parts of the assembly line which install the engine, install the hood, install the wheels, etc.) come together to form the factory? Likewise, even though there are apparent chaos and disorder in various parts of the universe, the presence of fine-tuning and mathematically describable order of the universe would still require an explanation, and I have argued that the best explanation is design.

Against God being life-loving, it has been asked why is there so little of life in the universe? ‘Why didn’t God choose laws that permit life to exist across a much wider range of possible values for their constants?’ (Sober 2019, pp. 66–67), such that there is life (say) in Venus, Mars, and so on? Why are most regions in the universe hostile to life?

In reply, on the one hand, we do not know how many living things God actually created to conclude that there is only a little of it, given the possibility that there could be many life forms in faraway regions of the universe or in other spiritual dimensions (in which angelic beings, for example, may dwell). On the other hand, it can be argued that God in His foresight created laws such that there is no evidence of life in Venus, Mars, and so on and then ‘suspended these probabilities’ by creating life on earth so as to show that He cares for the earth and the living things on it. In any case, even if there are no life anywhere else in the universe, the fact remains that, if the universe is not fine-tuned, there would not be life anywhere in the universe, including planet earth, and it has been argued previously that the best explanation for this is design.

A theological objection to fine-tuning has been raised by Halvorson (2018), who argues that, if God could be expected to create a nice universe, then God could also be expected to set favourable chances for a nice universe, which He did not; therefore, the fine-tuning argument defeats itself. In support of his main claim he writes:

Consider a sinister game of reverse Russian roulette: your captor hands you a revolver with five chambers filled, and one empty. Now suppose that you pull the trigger, and you hear ‘click’ ... you’ve survived. What should you conclude? Should you conclude that your captor rigged the game so that

you wouldn't die? But then why would your captor begin the game by filling five of the six chambers? Why not fill only one ... or, even better, don't fill any at all? ... In application to the FTA, the analogy is as follows: God created laws such that almost all physically possible universes are lifeless. And yet, the fine-tuning advocate wants us to believe that God designed this 'game' so that we would win. Wouldn't this be a strange way for a deity to operate? Why would God make things hard for himself? (p. 126)

Halvorson's objection raises interesting theological issues concerning fine-tuning. Is a universe fine-tuned for life also fine-tuned for death?

Nevertheless, there are at least two problems with Halvorson's objection.

First, Halvorson's reverse Russian roulette analogy is not quite appropriate; according to his analogy, one out of six of the chambers of the revolver was not filled, and $1/6$ ($= 0.166 \dots$) is a non-negligible probability. Thus, even though you survived, you might still wonder whether your captor rigged the game because he wanted you to live, or did you survive by chance. Against the former hypothesis, you might ask why would your captor begin the game by filling the rest of the chambers in the first place, and you might conclude that perhaps he just wanted to play the cruel game with you for the fun of it without rigging the game (since there is a non-negligible probability that you survived by chance). However, it has been argued in Chap. 4 and this chapter that all the alternative hypotheses to Design are extremely unlikely and thus have negligible probabilities (far lower than 0.001; in cryptography, negligible probability is typically assigned a value of less than $1/2^{128}$; as noted in Chap. 4, the fine-tuning of entropy alone has been argued to be lesser than that). It would be analogous to the revolver having zillions of chambers, all of which except one was filled. In that case, the fact that you survived would leave you in no doubt that your captor had rigged the game so that you would live, regardless of why your captor began the game by filling the rest of the chambers in the first place.

Second, Halvorson's objection has similarities to the Deist Voltaire's (1764/1901, p. 273) objection against miracles when he claims that ascribing miracles to God would indicate a lack of forethought:

It is impossible a being infinitely wise can have made laws to violate them ... if He saw that some imperfections would arise from the nature of matter, He provided for that in the beginning; and, accordingly, He will never change anything in it.

However, McGrew (2013) notes that Paley (1794/1859, p. 12) and others have replied that God in His foresight would have wanted to set up a universe with regularities that no mere human could abrogate and then suspended them so as to authenticate a revelation.

Likewise, with regard to Halvorson's objection, it can be argued that God in His foresight determined the laws of nature such that almost all physically possible universes are lifeless, and 'suspended these probabilities' by creating a universe that is fine-tuned so as to authenticate a revelation, namely, His General Revelation through His creation (for a theological defence of General Revelation and Natural Theology, see Sudduth 2009; Loke 2019). In other words, God wants life to be naturally unlikely so that we would recognize His hand in designing a life-permitting universe. Moreover, if God had created the natural laws such that life is naturally likely, we might take it for granted that we are alive, whereas the fact that it is naturally unlikely and yet we are alive would make many people feel grateful to be alive. It is widely recognized that gratitude is a virtue and thus it is plausible that God would want to foster it. Concerning Halvorson's question 'Why would God make things hard for Himself?', as a professing Christian, Halvorson should have known that, according to Christian theology, God is willing to make things hard for Himself in order to accomplish His loving purposes for humankind, even to the extent of enduring the suffering of the crucifixion for our sake in order to redeem us.¹⁰

I shall now show how the logically exhaustive list of hypothesis devised in Chap. 4 is useful for answering a number of objections against the inference of the Teleological Argument.

7.4 Reply to Hume's Classic Objections

Many have thought that the Teleological Argument has already been dealt a death blow by philosopher David Hume. Historian of science Jonathan Topham writes, 'It has sometimes seemed inexplicable to historians that natural theology, and particularly the argument from design, continued to be so prevalent in the anglophone world in the wake of Hume's assault' (Topham 2010, p. 66).

Topham summarizes Hume's assault as follows:

1. The central analogy between natural phenomena and human artefacts could not be used convincingly to infer the God of Christianity.
2. The universe was so unlike human productions that the analogy between the two was extremely tenuous.
3. Such analogies were based on so limited a knowledge of the universe; perhaps at other times and in other places nature was even less like a machine.
4. This was the only universe of which anyone had experience, invalidating it as the basis of an inductive inference.
5. No one had had direct experience of the creation of a universe.
6. Even if one allowed that the universe was the product of an intelligent designer, that would only lead to an infinite regress, since the designer's intelligence would require explanation.
7. Since the cause inferred must be proportionate to the effects, such a designer could not be the infinite being of Christian theology.
8. One could not be sure whether there was one designer or many, or,
9. indeed, given the imperfections in nature, whether the designer(s) was incompetent or malevolent.
10. There were other analogies that might be considered to be at least as satisfactory as that between the universe and a machine, such as that between the universe and a living organism. In this case, one might argue that, since all animals were actuated by a soul, God must be the soul of the world; or one might argue that, like a plant, the world had grown from a seed.

11. The appearances of design in nature might reasonably be accounted for as the fortuitous consequences of a chaotic system of matter in motion (*ibid.*).

While the 11 objections represent an extensive critique of the Teleological Argument, they are far from fatal. With respect to objections 1, 2, and 10, it has been shown in this book that the conclusion of the Teleological Argument does not have to be based on analogy, but can be shown to be based on argument by exclusion. With respect to objections 3, 4, 5, and 11, it has been shown that, even though our knowledge of the universe is limited, that this was the only universe of which anyone had experience, and that no one had had direct experience of the creation of a universe; nevertheless, given the Causal Principle (see Chap. 3) and the conclusion that our universe has a beginning (see Chaps. 5 and 6), the order and fine-tuning that we observe would still require a causal explanation and the best explanation is still design (the conclusion is arrived at by exclusion and not inductively). With respect to objection 6, an infinite regress has already been refuted in Chap. 5, and as explained above in response to Dawkins, a beginningless, uncaused, and intelligent First Cause would not require an explanation. With respect to objection 9, I have argued above that the ‘imperfections’ do not imply the unlikelihood of Design. With respect to objections 1, 7, and 8, the Teleological Argument is never intended to be a sufficient argument for the Trinity Monotheistic God of Christianity but part of a cumulative case which includes (for example) the historical argument for the claims and resurrection of Jesus (Craig and Moreland ed. 2009; Loke 2017, 2020).

7.5 Addressing an Objection to Argument by Exclusion

A sceptic might object that, even if each of the alternatives to Design is improbable, their disjunction is not improbable. For example, consider the outcome of rolling a fair die. Even if the probability of each of the

alternatives to 6 (i.e. 1, 2, 3, 4, 5) is rather low (i.e. $1/6$), their disjunction is not improbable (i.e. $5/6$).

In reply, first, the die example assumes that each outcome has a non-negligible probability: $1/6$ ($= 0.166 \dots$) is non-negligible and we often do see the outcome of (say) 3 happening naturally. However, it has been argued in previous chapters that each of the alternatives to Design is not the case or extremely unlikely and thus has zero or negligible probability (far lower than 0.001; in cryptography, negligible probability is typically assigned a value of less than $1/2^{128}$).

Second, in the case of rolling a fair die, it can be shown that the outcome of 6 has equal probability to each of the non-6 alternative outcomes. However, it has been explained earlier that, while it has been shown that each of the alternatives to Design has negligible probability, it has not been shown that Design has equally negligible probability.

The die example however is analogous to the case for Design in this sense: the probability of each of the logical alternatives must add up to 1 ($1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 = 1$). Likewise, the epistemic probability of each of the five possible categories of explanations—namely: (i) Chance, (ii) Regularity, (iii) Combination of Regularity and Chance, (iv) Uncaused, and (v) Design—must add up to 1. Since each of the four alternatives to Design has negligible probability and that the probability of the disjunction of four negligible probabilities is negligible, it can be concluded that our universe is designed (i.e. the probability of Design has negligible difference from the probability of 1). (It might be objected that one could also reverse the direction of the argument from exclusion, so that [according to the critic] the improbability of design as the explanation should lead us to think that there is a higher probability of non-design explanations than we had previously estimated.¹¹ However, I have already argued previously that, on the one hand, there is no good reason to think that Design is improbable; on the other hand, the improbability of non-design explanations is well-established.) Even if one disagrees with my assessment that each of the naturalistic alternative hypotheses has ‘negligible probability’, one can still say that each of these naturalistic alternatives has been shown to be very improbable. For example, even if one assigns to each of the four naturalistic alternatives a probability of 1 in 1000 (which is very generous given the arguments in previous

chapters), that still leaves Design with a high epistemic probability of 99.6%. This should warrant assent from a reasonable person.

7.6 Response to Difficulties Concerning Determining the Prior Probability that God Design the Universe

My argument from exclusion avoids a difficulty often mentioned against other approaches to inferring design, namely, the difficulty of assigning *prior* probability for Design. Proponents of fine-tuning argument have argued that, while the fine-tuning is improbable under atheism, it is not improbable under theism: '[Since] God is an all good being, and it is good for intelligent, conscious beings to exist, it is not surprising or improbable that God would create a world that could support intelligent life' (Collins 1999, p. 54). It is good for embodied, intelligent, conscious beings to exist because 'intelligent conscious beings can actualize noble values in the world, such as moral values, aesthetic values, and epistemic values' and they can be aware of God and 'can communicate and establish a deep relation of love with God, if God exists' (Chan and Chan 2020, pp. 6–8 citing Swinburne). Halvorson (2018, p. 129) notes that a defender of the Fine-Tuning argument would argue that, while a life-permitting universe is improbable conditional on God's non-intervention, it is probable conditional on God overriding the probabilistic laws of physics, but he objects that 'not many of us—even the theists among us—have a prior probability for the claim that God will intervene in a certain situation'. Sober claims that the likelihoodist formulation of the design argument is the best formulation,¹² but it is beset by the problem of assigning prior probability for Design given the difficulties of knowing the putative designer's goals (pp. 29, 44–45, 62). Moreover, our ground rules of inferring intelligent design are based on our empirical knowledge of *human* intelligence, which may not carry over to hypotheses involving non-human intelligent designers (Sober 2003, p. 38; see also Manson 2020, who argues that God's mind is so different from ours that we cannot judge what God would likely do; thus, the probability that there is a

life-permitting universe if God exists should be regarded as *inscrutable*). Likewise, Grünbaum complains that we have no independent evidential access to God's choices and motives. He argues that this is unlike the case of ordinary action-explanations, for example, an unreasonable reprimand of an academic colleague by the department chairman, where we have access to independent evidence as to the content of the agent's motives other than the action taken by the agent. He thinks that, absent such evidence, we should reject the proffered action-explanation as viciously circular (Grünbaum 2000, section 3). The problem of assigning prior probability for Design is further accentuated by the presence of imperfect design (see Sect. 7.5), which atheists argue are evidences against the goodness of the Creator assumed by Collins et al. While theists can reply that this objection fails using the approach of sceptical theism, atheists might reply that the sceptical theism approach highlight the difficulties of knowing the putative designer's goals mentioned by Sober.

Now Barnes (2019; citing Hawthorne and Isaacs 2017, 2018) has used what he calls the *Awesome Theistic Argument* test (ATA) to argue that the kind of inscrutable probability objection raised by Manson to the Fine-Tuning Argument (FTA) fails, as follows:

Manson contends that the fine-tuning sceptic can limit the extent of their judgement of inscrutability, so that while being unconvinced by the FTA, they could agree that "there would be evidence of God's existence if, for example, the stars miraculously rearranged themselves to spell out the Nicene Creed" (2018: 5). And yet a starry Nicene sceptic could block this argument by claiming that the probability of "We believe in one God, the Father Almighty, Maker of all things visible and invisible ..." appearing in the night sky if God exists is inscrutable. This, if anything, is more plausible than declaring that the probability of a life-permitting universe on theism is inscrutable, and yet the conclusion is absurd. If the starry Nicene sceptic would be irrational to block that argument by appealing to inscrutability, then the fine-tuning sceptic must also be irrational.

My argument-by-exclusion formulation of the design argument complements the ATA by showing *why* the conclusion is absurd (see the analogy of 'discovering a factory in the jungle' mentioned in Sect. 7.3), while

also avoiding the above objections which beset the likelihoodist formulation of the design argument.

To elaborate, given that the list of categories of hypotheses mentioned previously (viz. (i) Chance, (ii) Regularity, (iii) Combination of Regularity and Chance (iv) Uncaused, and (v) Design) is logically exhaustive, and given that the laws of logic are necessarily true for all entities human or non-human (see Chap. 1), we can argue for the Design hypothesis by exclusion and without vicious circularity and without violating any ground rules. This can be done by arguing that, while the alternatives to design are unlikely, the Design hypothesis is not. Given that all the alternatives to design fail (as has been shown previously), it can be argued using a *Modus Tollens* argument:

1. If there is no intelligent designer of the universe, the universe would not be fine-tuned and highly ordered given the failure of all the alternative hypotheses (viz. Chance, Regularity, Combinations of Chance and Regularity, Uncaused).
2. The universe is fine-tuned and highly ordered.
3. Therefore, there is an intelligent designer of the universe.

Therefore, we should accept the conclusion of design regardless of whether we have access to independent evidence concerning the content of the agent's motives. Swinburne points out that we can often have strong evidence for a hypothesis that a particular person committed the crime, without having the slightest idea of his reasons for bringing it about in the exact way that he did (Swinburne 2005, p. 924). Likewise, we can have strong evidence for a hypothesis that an event—for example, a magician pulling out a rabbit from the hat—happens as a result of design without knowing how the designer (e.g. the magician) pulls it off. Thus, objections based on our ignorance of the motives or mechanisms of the process of divine creation (e.g. 'we really do not know how God "pulls it off"') fail to rebut the conclusion that the laws of nature are designed. In other words, 'we often are able to tell that an intelligent designer made an object even though we have no idea what that putative designer's goals were' (Sober 2019, pp. 44–45).

Against this, Sober objects by claiming that this inference is an inductive sampling reasoning which

focus exclusively on the causes we have actually observed; it ignores causes that may have operated before human beings existed, or that may have operated far away in space, or that may have occurred too slowly for human beings to notice. The inductive sampling version of the design argument is biased against theories that postulate unobservable processes. (*ibid.*, p. 29)

In reply, my argument is not based on inductive sampling but based on deduction using a logically exhaustive list of hypotheses which covers all possible hypotheses, regardless of whether they involved entities that exist long ago or far away or processes that are too slow or unobservable, and the conclusion of Design is arrived at by exclusion of the alternative hypotheses based on their essential characteristics. Hence, my argument is not susceptible to Sober's objection.

In summary, my argument by exclusion—based on the logically exhaustive list of hypotheses formulated in Chap. 4—can lead to the conclusion that the universe is designed without having to first assign a prior probability for Design, thus avoiding the objections by critics on this point entirely. In this aspect, my formulation of the design argument is better than the likelihoodist formulation as well as other formulations which are beset by those objections.

Concerning the prior probability of naturalism versus prior probability of theism, I have argued above that, on the one hand, there is no good reason to think that prior probability of theism is low and the prior probability of naturalism is high. While many atheists would subjectively push up the prior probability of naturalism (due to simplicity), the criterion of simplicity is only valid if all else is equal. The theist can use the KCA to argue that all else is not equal and that theism has a higher prior than atheism. Moreover and in any case, the observation by Lewis and Barnes (noted in Chap. 4) that our conclusions would not depend much on the prior probability of the theory if our data is very good implies that the final probability of the constants being 'fine-tuned' by the 'Chance hypothesis' would be very low, and I have argued in Chaps. 4, 5, and 6 that this problem cannot be avoided by all the other alternative

hypotheses to Design (Regularity, Combination of Regularity and Chance, and Uncaused). Therefore, we can conclude that the final probability of the Design hypothesis is high.

7.7 Reply to Objections Concerning the Range of Explanatory Latitude

Against Swinburne's defence of the Teleological Argument from the order of the universe, Grünbaum (2004, p. 605) objects that, whatever the laws of nature turn out to be, the theist would explain these as *brought about by God; hence, the range of the explanatory latitude of the theistic volitional explanation is too permissive and the supposed evidences (i.e. the laws of nature) provide no check on the validity of the explanatory premises*. Grünbaum complains that the proposed theistic explanation fails to transform scientific brute facts into specifically explained regularities, for contrary to Swinburne's contention, the divine volitional explanation provides no epistemically viable account of why the physical energy conservation law holds, let alone of why the magnitude of the total energy is what it is (ibid., p. 562).

In reply, Grünbaum's objection would only work against Swinburne's version of the argument, which claims that 'The very same criteria which scientists use to reach their own theories lead us to move beyond those theories to a creator God who sustains everything in existence' (Swinburne 1996, p. 2). This claim makes Swinburne vulnerable to the objection that his theistic hypothesis does not make predictions in the same way as scientific theories, and that it does not transform scientific brute facts into specifically explained regularities the way Grünbaum demanded. Likewise, an important reason why several authors have objected to Dembski's eliminative approach (see Chap. 4) by emphasizing the necessity of providing some positive argument in favour of design is because Dembski claims that his theory of Intelligent Design is scientific, and according to these authors' definition, a scientific theory would be expected to make a range of testable predictions (Dawes 2007, pp. 71, 79; Fitelson et al. 1999, p. 487).

However, Grünbaum's objection would not work against the argument from the mathematically describable order of the universe presented in this book. For the argument defended here does not follow Swinburne in claiming to use the very same criteria which scientists use to reach their own theories. Contrary to Dembski, my book does not claim to defend Design as a scientific theory. Instead, I argue in Chap. 1 that science is not the only way to knowledge (contra scientism), that science itself requires the laws of logic, that the laws of logic imply that the conclusion of a deductively valid argument with true premises must be true (regardless of whether it makes testable predictions), and I have explained in the rest of the book why my argument is deductively valid and why the premises are true. Therefore, the conclusion of Design is true.

Additionally, the argument defended in this book is not based on the premise that the laws of nature should be able to be described by one mathematical form rather than the other, but that they should be able to be described by any highly ordered mathematical form at all. It is true that a range of possible laws of nature describable by a range of possible mathematical equations is possible. Nevertheless, given that a particle, for example, could have moved in billions of alternative directions other than consistently in the direction described by any form of mathematical equation (see Chap. 4), the explanatory latitude of the Design hypothesis is still vastly more restricted than the hypothesis that there is no external creative cause. Thus, the observations concerning whether particles do move in the manner describable by mathematical equations would still serve as a check with regard to the evidences for the Design hypothesis, and these observations constantly confirm the evidences for the Design hypothesis. It is true (as Grünbaum argues) that the hypothesis that God exists entails nothing about the numerical value of the energy of the universe being of a certain value E (Grünbaum 2005, p. 935), given that God could have assigned other values (Swinburne 2005, pp. 923–924). Nevertheless, as explained in Chap. 4 and this chapter, the evidence that particles do behave in the manner describable by mathematical equations is still evidence for the conclusion that there is a Designer who, for whatever reason, causes them to behave in this manner, resulting in the numerical value of the energy of the universe being of a certain value E . Swinburne explains it thus,

But of course the probability that he would choose a particular disjunct is low; and I am not appealing to there being just the amount of energy there is (rather than some other slightly different amount) as confirmatory evidence of the existence of God. But the evidence which I am adducing as evidence of the existence of God confirms the claim that he brought about just the amount there is ... Analogously, footprints of a kind that the suspect would have made if he had been at the scene of the crime confirm the hypothesis that he was at the scene of the crime and so put his feet in the exact position when the footprints were found, without it being the case that the prints being at that exact position rather two millimetres to the west has any confirming effect on the hypothesis. (ibid.)

One might complain that, just as the existence of God does not entail that the numerical value of energy in the universe should be E rather than other value, likewise, the existence of God does not entail that the universe exhibits very sophisticated mathematical order, given that God could have chosen to create a universe without this order. Why then should we think that the existence of sophisticated mathematical order is evidence for God?

In reply, the reason why E is not evidence for God is not merely because the existence of God does not entail E , but also because there are alternative plausible explanations for E that does not involve a designer. Whereas, in the case of the existence of sophisticated mathematical order, we have already ruled out the plausibility of alternative explanations, and therefore this should be regarded as an evidence for a Designer (God). To elaborate, given the vast number of possible alternative disordered schemes and given that the alternative categories of hypotheses in the logically exhaustive list are unlikely (see Chap. 4), the probability that, without an external intelligent cause, we should observe the ordered scheme which we do observe is extremely low, and this is evidence against the null hypothesis that no external intelligent cause is required (Cf. Grünbaum 2004, p. 599).

Therefore, even though the existence of God does not entail the existence of a highly mathematically ordered physical reality, nevertheless the existence of a highly mathematically ordered physical reality is evidence for God because all the alternative explanations have been excluded.

Against appealing to God as the Creator of natural laws, Mumford (2004, pp. 147–148) complains that how God’s decrees come to be manifest in nature remains unexplained. He writes: ‘they are essentially supernatural, so how do laws have effects in nature? This is not a compelling model of how laws govern. This relation between laws and the world is a paradigmatic *deus ex machina*.’ The latter is illustrated by the classic cartoon of the scientist writing the elaborate theorem on the chalkboard with ‘*then a miracle occurs*’ in step two to fill in for what he could not work out. Others might object that accepting God as a conclusion opens the floodgates to virtually any competing explanation where one can just posit ‘the ability to do X’ to solve the problem, such as posit the intelligence and power to create a universe to a Magic Beaver.¹³

In reply, my argument does not postulate a Designer as a *deus ex machina*, nor is the conclusion of my argument based on ignorance (my argument is not ‘because we don’t know how to explain the laws of nature, therefore God’). Rather, the conclusion is based on the analysis of the necessary conditions (e.g. what is required for an initially changeless First Cause to bring about the first event) and follows from deduction and exclusion (we know by deduction that there are only a few possibilities and all the rest have been excluded, therefore God). My argument does not posit a First Cause having libertarian freedom merely as a possible solution among many alternative solutions. Rather, I have explained that a First Cause having libertarian freedom and intelligence follows deductively from the premises I presented. Thus, there is no other possibilities and no floodgates opened to a Magic Beaver for which we have no independent reason or evidence to think is the case. The classic cartoon case is disanalogous because the ‘miracle’ does not follow from the previous steps of the theorem and is based on ignorance of what should follow from those steps, and this ignorance is open to being filled by all kinds of alternative explanations such as a Magic Beaver to be posited to solve the problem. Whereas my conclusion follows deductively from my premises and is not based on ignorance but on reasons and analysis of the necessary conditions (e.g. what is required for an initially changeless First Cause to bring about the first event). Thus, it is not open to being filled by other explanations because there isn’t any other viable logical alternative and there is only one viable conclusion which follows deductively

from the premises, namely, the conclusion that the Creator and Designer of the universe exists.

Not knowing how the supernatural affect the natural is not a compelling objection, because our lack of understanding of a relation is not a good reason to reject the existence of the relation. As Koons and Bealer point out, physics itself admits lawful relationships among physical entities that are extraordinarily diverse in nature and, in turn, admits relations of causal influence and law-grounded explanation among these entities. Physics allows, moreover, that some of these lawful relationships are brute facts having no further explanations (Koons and Bealer 2010, p. xviii). Likewise, the relationship between mind and body (and between ‘supernatural’ and ‘natural’) could well be a brute fact having no further explanation. Kojonen (2021, p. 64) notes that

the problem of not being able to provide further details about the mechanism is not necessarily unique to theism: as Dawes (2009, pp. 51–53) notes, in all explanations there comes a point where we reach the level of basic causal powers, and are unable to specify further intermediate mechanisms. To insist on an explanation at such a truly basic level would just lead to an infinite causal regress.

Moreover, SETI (Search for Extra-Terrestrial Intelligence) researchers can reasonably conclude that Extra-Terrestrial Intelligence exists if they pick up a certain signal under certain circumstances, even if they do not yet know the actual mechanism by which the Extra-Terrestrial Intelligence created the signal.

7.8 Conclusion

In this chapter, I complete my refutation of the alternative hypotheses to design by offering two considerations against the hypothesis that the fine-tuning and order of the physical universe is Uncaused (the other alternatives have already been refuted in Chap. 4). First, all such models cannot work because, as explained in previous chapters, the physical universe cannot be the uncaused First Cause; rather, it is constantly changing and

has a first event, which implies it has a beginning and therefore (according to Causal Principle) has a cause; hence, its properties of being fine-tuned and highly ordered would have a cause.

Second, the ‘Uncaused’ hypothesis does not explain how it could be the case that unthinking, mindless things consistently accord with natural laws.

I have defended the hypothesis that the best explanation for why unthinking mindless physical entities consistently have such an orderly behaviour is that there is a Mind who determined that they should be like this, by replying to various arguments against the likelihood of Design. For example, in answer to the infamous question ‘Who designed God?’ (Dawkins 2006, p. 188), I have explained that ‘God’ refers to the First Cause which is beginningless, initially changeless, uncaused and necessarily existent and hence is un-designed. In reply to the objection from ‘imperfections’ such as the presence of natural evil (Hume 1779/1993), this objection, even if successful, does not imply that a designer is unlikely, only that the designer is imperfect (moreover, as noted above, various plausible theodicies concerning why a perfect Designer might allow evil have already been offered by scholars; see Loke 2022a). Against the theological objection that, if the universe is fine-tuned, it should not be the case that almost all physically possible universes are lifeless (Halvorson 2018) or that most regions in our universe are hostile to life (Sober 2019, pp. 66–67), it can be argued that God wants life to be naturally unlikely so that we would recognize His hand in designing life.

In conclusion, while the alternatives to design are unlikely, the Design hypothesis is not. Since the list of hypothesis is logically exhaustive as shown in Chap. 4, one can argue for the Design hypothesis by exclusion without having to first assign a prior probability for Design, thus avoiding the objections by critics on this point entirely.

Moreover, my argument does not postulate a Designer as a *deus ex machina*, nor is the conclusion of my argument based on ignorance. Rather, the conclusion is based on the analysis of the necessary conditions (e.g. what is required for an initially changeless First Cause to bring about the first event) and follows from deduction and exclusion. My argument does not posit a First Cause having libertarian freedom merely as a possible solution among many alternative solutions. Rather, I have

explained that a First Cause having libertarian freedom and intelligence follows deductively from the premises I presented and that there is no other viable possibility. Hence, there are no floodgates opened to be filled by other explanations because there isn't any other viable logical alternative and there is only one viable conclusion which follows from the premises, namely, the conclusion that the Designer of the universe exists.

Notes

1. Oppy (2013) also considered the alternative possibility that there are at least some aspects of fine-tuning of natural causal reality that arise contingently at non-initial stages of natural causal reality as the results of the outplaying of objective chance. However, this possibility has been refuted in Chap. 4 when considering the Chance hypothesis.
2. Cosmologist Don Page wrote to me about this in personal correspondence, attributing it to Stephen Hawking.
3. Lewis and Barnes (2016, p. 328) argues that 'The Universe is not a necessary being because "there is nothing necessary about how it is, or that it is, or how it behaves", unlike (say) a triangle which necessarily has 3 vertices. This is why science needs observations; we can't figure out the Universe from our armchairs. We need to go outside and look.'
4. *Merriam-Webster Dictionary*.
5. Concerning the historical circumstances that led to the lamentable prevalence of this false assumption among atheist philosophers (Bertrand Russell et al.), see Clarke (1970).
6. With regard to the concerns raised by the Thomistic Cosmological Argument, the initial changelessness of the First Cause implies that the First Cause does not require a sustaining cause; the subsequent changes can be understood as being initiated and sustained by the libertarian freedom of the First Cause (see Chap. 6).
7. This objection may affect other formulations, such as the likelihood formulation. See Sect. 7.6.
8. Unless the Designer chooses to grant us such an access in some ways.
9. I discuss this issue in greater detail in Loke (2022).
10. Concerning the debate about divine impassibility and a defence of the view that the Second Person of the Trinity suffered in his human nature, see Loke (2014, chapter 4).

11. I thank an anonymous reviewer for suggesting this objection.
12. He constructs a likelihoodist formulation of the design argument as follows:

$$\Pr(\text{the value of physical constant } x \text{ is in } W \mid \text{God set the value of } x \ \& \ W \text{ is narrow}) >$$

$$\Pr(\text{the value of physical constant } x \text{ is in } W \mid \text{a mindless chance process set the value of } x \ \& \ W \text{ is narrow}) \text{ (p. 62).}$$
13. I thank Vaal for raising this objection.

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