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Argument from Design Based on the Calculus of Probabilities

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ABSTRACT

One of the premises of the argument from design is the need for the order of a designer. This premise has been explained in various ways, one of which is the calculus of probabilities. It posits that the likelihood of an ordered thing coming into existence by chance is so low that human beings consider it nearly impossible; therefore, this order requires an intelligent designer. However, some contemporary Muslim philosophers, such as Ayatollah Jawādī Āmulī, along with certain Western philosophers, have contested the validity of the calculus of probabilities. They argue that the calculus of probabilities does not reveal reality but is merely practically useful. They assert that undesigned states have the same probability as designed states. In this article, I address these objections, refute them, and ultimately demonstrate the soundness of the argument from design based on the calculus of probabilities.

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1. Introduction

The argument from design is one of the essential ways to establish the existence of an intelligent designer who has designed and ordered the world. This argument relies on two premises:

The first premise asserts that numerous examples demonstrate order and design in this world.

The second premise posits that this order serves as a sign of the existence of an intelligent designer who has designed the world.

Various explanations support the validity of the second premise, one of which involves employing the calculus of probabilities. Through this method, all probabilities related to the existence of an ordered entity are analyzed, leading to the conclusion that the improbability of an ordered entity's existence by chance indicates its need to a designer.

However, some contemporary Muslim philosophers, such as Ayatollah Jawādī Āmulī, as well as some Western philosophers, have contested the validity of the calculus of probabilities. In this article, the calculus of probabilities will first be explained. Then the main objection against its validity will be responded to.

It must be noted that the argument from design can be addressed from various perspectives. For instance, a significant critique challenging the validity of this argument today is grounded in the theory of evolution. Some evolutionary biologists have sought to undermine the argument from design based on the theory of evolution (Dawkins, 2006: 113-119). In response, some proponents of argument from design have argued that the gradual design observed in the process of evolution necessitates a designer (Evans, 2010: 79). They also asserted that irreducible complexities cannot be adequately explained by the theory of evolution (Behe, 2006: 39), the cosmologically fine-tuned universe requires a designer (Collins, 2004: 135), and our capacity to comprehend truth is unrelated to the theory of evolution (Plantinga, 2002: 1-12).

However, it is important to clarify that this article does not discuss the relationship between the theory of evolution and the argument from design. The paper exclusively concentrates on the argument from design based on the calculus of probabilities.

The main emphasis of this article is that in discussing the argument from design based on probability calculus, one should not assume that deductive methods leading to certainty are the sole epistemic approach. The reasonableness of arguments is not limited to certain methods; rather, with some conditions, inductive and probabilistic methods also have epistemic value. Some new epistemologists have correctly clarified this issue. For example, defenders of moderate foundationalism emphasize that the process of inference from basic beliefs is not exclusive to deductive methods, but the use of probabilistic methods has epistemological value since they are reasonable. The reasonableness of belief is not based solely on certainty; probabilistic methods are also reasonable (Pojman, 2000: 124-128). Based on this, the argument from design using probability calculus, even if not certain, leads to the creation of reasonable knowledge.

This article will also explain that while probability pertains to human knowledge, it is characteristic of discovering reality. Therefore, the degree of probability of a theory is not purely subjective but a form of knowledge indicating objective reality. The higher the epistemic probability of a theory, the greater the likelihood of discovering the truth. Consequently, the argument from design based on the calculus of probabilities will, to some extent, reveal reality.

Though articles have been written about the argument from design based on the calculus of probabilities (Ramin, 2013; Zamani Qomshae, 1995), this article's innovation lies in its attempt to analyze Ayatollah Jawādī Āmulī's objection to this argument alongside examining some other objections in the West.

2. The Need of Ordered Things to a Designer

Before delving into the argument from design based on the calculus of probabilities, it is essential to clarify four ways to prove the argument's second premise from design (i.e., the need of ordered things for a designer). Each of these ways requires independent discussions, which will be briefly outlined here. They are as follows:

1. The first way is analogical. According to this approach, just as manufacturers are ordered by a designer, the world has also been ordered by a designer because of their similarity. In essence, considering the analogy between manufactured objects and the world makes it evident that both share

a resemblance, thereby demonstrating that, analogically, just as manufacturers require a designer, so does the world.

This approach has faced criticism from Scottish philosopher David Hume, who classifies all things into two categories: natural entities that do not require a designer and manufactured objects that do. Hume argues that while we are certain, based on experience, that a manufactured object like a house needs a designer, we cannot be equally certain that our natural world is comparable to a manufactured object. Consequently, the analogical approach is deemed unreliable since the resemblance between the natural world and a manufactured object is neither certain nor complete. The dissimilarity between the natural world and manufactured objects highlights the inadequacy of the analogical approach. (Hume, 2007: 21)

However, Hume's viewpoint could be challenged, asserting that just as manufactured objects require a designer for their order, other entities with similar order and arrangement, whether natural phenomena or manufactured items, also require a designer. Hume posited that the need for a designer is confined to manufactured objects, but in reality, as all manufactured objects require a designer, anything else resembling them in terms of order also requires a designer.

In essence, despite some dissimilarities between the natural world and manufactured objects, the analogical approach can be applied, as both share a resemblance in terms of order and arrangement.

In fact, when there are two objects, and we know that the cause of a predicate in both is a special characteristic, we can extend the judgment from one proposition to another. This argument is called 'Mustanbat al-Ellah,' which effectively refers to a form of deduction. Therefore, it can be concluded that, analogically, all ordered things require a designer because they resemble manufactured objects in their order and arrangement.

2. The second way would be called deductive and considers the need to order things from a designer as self-evident. We are filled with astonishment and amazement when we observe any ordered thing. Thus, it can be said that the need for an ordered phenomenon to have a designer is self-evident, requiring no argument for its truth. In this way, we do not compare manufactures with natural phenomena; instead, we assert that our intellect judges that any ordered thing needs a designer, whether it is a manufactured item or a natural phenomenon. Many contemporary Muslim theologians have employed this approach. (Motahhari, 2003, vol. 8: 470-472; Sobhani, 1991: 33-49)

This approach's advantage over others is that it provides a certain foundation for the validity of the second premise of the argument from design, as opposed to other methods that are merely probabilistic or inductive.

3. The third way by which the validity of the second premise of the argument from design would be proven is the inference from the best explanation. Although the inference from the best explanation does not propose a certain solution for a problem, it puts forth the best explanation for a phenomenon. According to the inference from the best explanation, there are three options to explain the world's order: chance, natural laws, and a designer. But which is the best inference to explain the order of the world?

The chance is an unreasonable explanation for design. How could it produce an ordered thing? Nobody can accept that an unguided process of chance can produce a guided, ordered, and designed thing.

The second way relies on the process of evolution. To reject this option, one can use the argument of Richard Swinburne that the natural explanation does not render us needless a personal explanation. The complete explanation requires two components: the natural explanation at the first level and a person who created and ordered the laws at the higher level (Swinburne, 2010: 20-24).¹ Therefore, the best explanation for illustrating the order and design of the world is to assert that this design has been created by an intelligent designer.

4. The fourth way, which is the subject of this article, is to use the calculus of probabilities.

While "probabilistic reasoning" and "inference from the best explanation" share similarities in

1. Thomas Nagel argues that despite the materialistic explanation offered by Darwinism failing to justify the current order of the world, he does not embrace the existence of God. Instead, he leans towards a form of panpsychism (Nagel, 2012). However, this perspective encounters its own significant challenges as it continues to reject the concept of intelligent design, namely, the existence of God. A thorough evaluation of this idea should be explored in separate articles.

some cases, the key distinction lies in the emphasis and methodology. In inference from the best explanation, the primary focus is identifying the most plausible explanation among the available options. The degree of probability is not necessarily employed; rather, the emphasis is on determining which explanation is more comprehensive, convincing, and generally plausible. On the other hand, probabilistic reasoning involves quantifying the probability of different outcomes or hypotheses. It measures the numerical likelihood of various outcomes, and this probability serves as the criterion for accepting a theory.

The argument from design based on probability calculus is explained below.

3. Explanation of the Calculus of Probabilities

In the argument from design based on the calculus of probabilities, the probability of a designed world without a designer is calculated, and a too-low probability indicates the need for a designer. Suppose you want to write a meaningful sentence. If you take a pen in your hand and write some letters unintentionally, it is rarely possible to form even one meaningful word. In a broader context, if you take a pen in your hand and write some letters unintentionally, it is too rare that you can construct a meaningful sentence. On a larger scale, it is almost impossible to write an encyclopedia unintentionally. If someone suggests that it is possible for an encyclopedia to be written by chance, people would laugh at such a notion, deeming it unreasonable. Although it is logically possible for an ordered thing to exist by chance, its probability is so weak that nobody considers it a rational option. Therefore, through the calculus of probabilities, the exceedingly low probability of order by chance underscores the need for an intelligent designer. If this principle applies to the world, it can be said that it is almost impossible for this ordered world to come into existence without an intelligent God.

William Dembski, defending the argument from design, added the point that, in addition to improbability, conformity with a pattern must be considered. He cites an example from Michael Polanyi: if stones placed in a garden are arranged in a way that forms a meaningful sentence, this precise arrangement is too improbable to be created by chance. This improbability and conformity to a pattern suggest a coherent sentence and could be a sign of an intelligent designer. Thus, he defines design as "patterned improbability". (Dembski, 2005: XI-XIII)

Another crucial point to note is that the argument from design based on the calculus of probability can be explained by new discoveries in modern physics. The principle of fine-tuning the universe is one of the newest ways to explain the argument of design using the calculus of probabilities. In the last century, some new discoveries in physics and astronomy have shown us that our world is highly structured. Physical cosmologists have determined the value of fundamental parameters such as density, mass, temperature, curvature, and entropy to a very precise degree. They have concluded that this precise degree could not have happened by chance. Our universe is exactly fine-tuned for life. Any slight difference in these parameters would make life in this world impossible. Therefore, the exceedingly low possibility of the existence of this fine-tuned universe renders the probability of chance too improbable, indicating the need for a designer (Manson, 2003: 4). Thus, while it is logically possible for this fine-tuning to have occurred by chance, it is almost impossible according to the calculus of probabilities.

However, to demonstrate the validity of the argument from design based on the calculus of probability, it is necessary, firstly, to explain the theories of probabilities and then to respond to the objections raised against it.

4. Theories of Probability

When employing the argument from design based on the calculus of probabilities, a question arises regarding the objectivity or subjectivity of probability. The theories explaining the nature of probability are categorized into two types: (1) epistemological (or epistemic) and (2) objective. These two accounts will be explained below.

1. **Epistemological Accounts:** Epistemological accounts posit that "probability" is linked to human knowledge. From this perspective, probability does not exist independently in reality; rather, it serves as a measure of human understanding of reality. Epistemological accounts encompass three main theories:

- The logical theory, associated with philosophers and mathematicians like John Venn and John Maynard Keynes, considers probability based on specific evidence to be uniform for all human beings. In other words, a particular degree of probability implies a consistent degree of belief for all rational individuals.
 - Subjective theory, often linked with the work of Frank P. Ramsey, Bruno de Finetti, and Richard Jeffrey, asserts that probability varies among individuals. The same evidence may result in different degrees of probability for different people.
 - Intersubjective theory, discussed by various scholars within the broader context of subjective probability theory, is a developed version of the subjective theory. It maintains that while the degree of probability may differ among individuals, there is a consensus on the degree of probability within a group.
2. **Objective Accounts of Probability:** Objective accounts of probability claim that "probability" is not tied to human knowledge but is an inherent feature of the world. Objective accounts are divided into two main theories:
- The frequency theory, associated with Richard von Mises and Hans Reichenbach, holds that probability is a feature of the world in connection with the outcome resulting from the frequency of a similar event over an extended period.
 - Propensity theory, discussed by philosophers such as Karl Popper, maintains that probability is a feature of the world based on an inherent propensity that manifests in repeatable conditions. When an event is repeated over an extended period, it demonstrates the inherent propensity of something in connection with that event. This inherent propensity serves as the degree of its probability. (Gillies, 2006: 1-3)

Considering the above theories, a question arises regarding the acceptable theory. In my view, probability is epistemological because something either exists or doesn't exist in the objective world. As Muslim philosophers asserted, there is nothing in the middle of being and non-being (Suhrawardi, 1996: 4; Shahrazuri, 2004: 34). Therefore, it must be said that in the objective world, there either is a God or there is no God; there would not be something in the middle of being and non-being called probability. Probability is a feature of our knowledge of the world, not the objective world; reality is not probable.

The next question is which epistemological theory is the most reasonable one. The question here is whether the degree of probability differs among various individuals and groups or whether there is one logical foundation for evaluating probabilities.

If one holds that the degree of probability depends on each individual, it leads to relativity. The calculus of probability is a reliable method, used by scholars and scientists in different fields, but if one says it is relative, it loses its validity. Therefore, to avoid relativity, it must be held that probability does not rely on the minds of some people or groups, but rather the degree of probability calculated is equal for everybody proceeding on rational arguments. If evidence is rational, it must possess a high degree of probability for all; if it is not, it must possess a low degree of probability for all. Thus, to keep evidence as evidence, it must be equally probable for all rational humans, and it is not reasonable to make the degree of probability relative. Relativity undermines the validity of probabilistic arguments. Therefore, it should be held that the probability of evidence can be calculated, and then it can be equally rational for everyone.

However, the significant point that must be noted for efficiency in the argument from design is that although probability is a feature of our epistemic knowledge, it does not mean that this probability is merely subjective knowledge with no relation to objective facts. Our beliefs, if rational and valid, are ways to represent the objective world, and as much as our knowledge is more probable, it can represent reality more accurately. The nature of rational beliefs is to represent reality, like a mirror showing the picture of objects. Thus, if the probability of evidence is certain, it accurately reflects the fact, and the more probable our knowledge is, the more accurately the objective world is portrayed. Consequently, though the reality of the calculus of probability is epistemic, it represents reality, and the more probable the evidence is, the more accurately facts will be revealed.¹

1. Muslim philosophers have categorized universal concepts into three groups: (1) "first intelligibles" in which the occurrence ('arūd) and characterization (ittiṣāf) are both external. (2) "secondary philosophical intelligibles," where the occurrence

5. Responses to Objection

Based on the above explanations, I clarify and then refute the chief objection against the argument's validity from design in what follows.

5.1. Calculus of Probabilities and Revealing of Reality

The first objection posits that probabilistic arguments find practical application in our daily lives, aiding us in achieving specific goals. We depend on probabilistic reasoning for practical decision-making. The objection against the argument from design based on the calculus of probabilities, as raised by Ayatollah Jawādī Āmulī, is that in arguments for the existence of God, we should seek evidence that reveals facts, whereas probabilistic arguments do not unveil reality; they serve only practical purposes. The probability of an event is calculated for planning and assessing our expectations, representing a practical application devoid of a direct connection with reality. In arguments for the existence of God, the aim is to demonstrate the existence of a real God, but probabilistic arguments fall short of revealing this reality. (Jawādī Āmulī, 2011: 245-246)

This objection has been articulated differently. It is argued that the calculus of probabilities does not explain an actual occurrence; instead, it merely reflects our expectations. For instance, when we roll a die, the probability of rolling a two is one out of six, given that a die has six sides. This probability indicates our expectation, derived from our lack of knowledge. The calculus of probabilities does not reveal reality; it only addresses our expectations where we lack knowledge of reality. However, if we know the forces determining the outcome of a die roll, we can ascertain the objective reality. Probabilities arise from our expectations when we are ignorant of reality. Consider the scenario of boarding a plane. If you were to estimate the probability of a plane crash, you might assess it as one out of a hundred. However, this estimation is rooted in ignorance. In reality, the plane will either crash due to specific causes or not crash due to the absence of those causes. Consequently, it can be argued that the calculus of probability is not applicable when considering the existence of God. (Ayatollahy, 2013: 115-116)

This objection can be addressed by clarifying that two propositions must not be confused:

1. The probability is epistemological. There is no probability objectively in the world.
2. Since probability is epistemological, it has no relation to the objective world.

The problem with the above argument is that the second proposition does not logically follow from the first one. As explained, even though there is no probability in the objective world, our knowledge serves as a means to disclose reality. Our probabilistic argument acts as a mirror to reflect the objective world. The more probable an argument is, the more accurately reality is revealed.

In the example of the plane crash mentioned earlier, if someone intends to board the plane, they should estimate whether it is reliable to do so or not. Our estimation is a way to reveal the reality. Similarly, concerning the existence of God, we can calculate the degree of probability of God's existence using the calculus of probabilities to make decisions about our belief in the reality of God's existence. Thus, the calculus of probabilities, in all cases and particularly in the case of the existence of God, reveals reality and is not merely a practical and mental method lacking objectivity.

5.2. Non-Certainty of the Calculus of Probabilities

The second objection contends that the calculus of probability, although utilized in sciences, is not a certain method. It, at most, establishes the argument's validity from design to the extent of a conjecture and guess. A certain argument is needed to prove God's existence, and the argument from design based on the calculus of probabilities does not provide this certainty. (Jawādī Āmulī, 2011: 245)

Two replies can be presented regarding these objections:

Firstly, although the calculus of probabilities does not provide us with certain knowledge of the world, it yields an almost certain result. This kind of almost certain result can be rationally considered acceptable and reasonable.

('arūd) is mental, but the characterization (ittiṣāf) is external, and (3) "secondary logical intelligibles," where both occurrence ('arūd) and characterization (ittiṣāf) are mental. (Mesbah Yazdi, 1999: 143-144)

Based on this classification, the concept of "probability degree" can be considered a kind of secondary philosophical intelligible. Although it is a subjective concept, it is realized in the objective world.

Secondly, the calculus of probabilities is used to judge between two theories: chance and design. This argument expects us not to have complete knowledge but to give precedence to the theory of design over the theory of chance. However, the reason for this preference is not solely subjective; in reality, the probability of the need for a designer is higher. Therefore, even though this method is not certain, it can be deemed reasonable.

5.3. Probabilistic Equality of Designed and Undesigned States

The third objection alleges that the degree of probability of designed and undefined states is equal therefore there is no reason to prefer one of them. Suppose there are one thousand states for one thing to occur, and among these thousand states, it is in one state ordered and arranged; and other states, which are nine hundred ninety-nine states, are unordered and undesigned. The question is whether the designed state's probability is higher than other states.

It is argued that all states in the calculus of probabilities are equal and, therefore, not usable or helpful in arguments for the existence of God. For example, if there are ten coins with numbers from one to ten, and you throw them, it is much more unlikely that the numbers from one to ten respectively appear, and therefore this regular arrangement would not happen by chance. However, the probability of all unordered states is equally low. In other words, if the probability of states of throwing a dice is counted, all of them have the same probability. For instance, if the probability of appearing the numbers ten, eight, three, and so on (an undesigned state), is one out of one thousand, the probability of appearing the arranged numbers from one to ten is also one out of one thousand. Therefore, it would be concluded that if the possibility of an ordered phenomenon is one out of one thousand, all other unordered and undesigned states have the same probability. Consequently, the low possibility of ordered states is not a sign of the need for a designer because these low possibilities also exist in all of the unordered states. (Jawādī Āmulī, 2011: 32-33)

This argument seems flawed. It is clear that if the ordered and unordered states have the same improbability, then there is no need for a designer. However, the point is that the probability of ordered and unordered states is not equal. The probability of unordered states is so high, and the probability of ordered states is so low. The problem with the above argument is that it considers the states of appearing of each state individually, but to count the degree of probability of something; we should count the improbable states together. Suppose there are one thousand possible states for a thing to appear meaningfully. In this instance, one cannot say that all states have the same probability, i.e., one out of one thousand, but rather, it should be said that the probability of unordered states altogether is nine hundred ninety-nine, and the probability of the ordered state is one out of a thousand. In fact, if all ordered and unordered states are considered together, it could be concluded that the probability of the ordered state is too low, and therefore it needs a designer who has arranged it. Consequently, it can be concluded that the improbability of something happening is a sufficient criterion for its need for a designer, but this improbability exists in the ordered and designed states only.

5.4. Calculus of Probabilities and Anthropic Principle

Some contemporary philosophers have endeavored to support the hypothesis of chance, rather than the need for a designer in unlikely events, by appealing to the so-called "anthropic principle."

There are various formulations of the anthropic principle, and some interpret it as an argument for the existence of God. However, the accounts used by John Barrow and Frank Tipler differ. They assert that it is possible to recognize the existence of order in the world, based on the calculus of probabilities, when there are many realized worlds. When people compare these worlds, they recognize that one of these worlds has order while the rest have no order. However, considering that humans have encountered only the existing world, they cannot judge the regularity of the world, as humans have only observed this particular world. Order is a concept humans impose on the world based on their observations, and it is not a real and objective reality. The conclusion of the anthropic principle is that our world is not something astonishing and unlikely, requiring the need for a designer. (Barrow, 1986: 2)

This argument appears flawed. The concept of "order" can be derived by comparing objects in the world. When humans compare different objects, they observe some as having order and others as lacking order. Correspondingly, when a person observes the world, they realize that this current world

is designed to achieve specific goals. For example, the parts of the human body fulfill certain functions such as seeing, hearing, tasting, etc., and the system of plants serves their goals. Considering these instances, humans discover that although they have only encountered this world and have not seen other worlds, this observable world has a real order that achieves specific goals. This order is not a concept imposed on the world but a reality discovered by observing the objects in the world and their relationships with other things in terms of achieving certain goals due to these relationships.

Using the anthropic principle, one might criticize the argument from design, asserting that the existence of all universes, including our universe and other hypothetical irregular ones, is equally improbable. Thus, just as winning a lottery does not need a designer, the order of this world does not need a designer. Although designed states are much less likely to occur, they do not need a designer because there are cases where improbable events happen without any need for a designer. Suppose a person participates in a lottery in which one million people have joined. In this lottery, the possibility of A winning is one out of a million. If A wins the lottery, an improbable event has happened, but no designer is needed. In the lottery, improbable events happen merely randomly, making it the best example to show that improbable events could happen without needing a designer. In other words, if all improbable events need a designer, then why, in cases like the lottery, does an improbable event occur by chance? It demonstrates that improbable events could happen merely by chance.

It seems there is a fallacy here. The fallacy lies in the fact that although winning a lottery is improbable, this improbability is for everyone. Improbability is a sign of the existence of a designer in cases where one side is almost improbable, and the other side is very likely. However, in the case of a lottery, winning is improbable for everyone, and therefore, it does not indicate the existence of a designer.

6. Conclusion

Although "probability" is epistemological, it reveals reality. The more likely a reason is, the more it reflects the objective world. Considering this point, the probabilistic argument to prove the existence of God is not certain, yet it is a rational and reasonable argument. It indicates that the probability of this world coming into being by chance is too low, and thus, it needs an intelligent designer. The function of this argument is that our intellect judges that theism is more probable than atheism and naturalism.

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