Why I’m Not An Atheist

An Essay by Noah Samuel Zielke

Atheism, God, and Two Hypotheses

The Atheism being addressed in this essay can be defined as the lack of belief in a God, or the position that it is not possible to know whether God exists. Addressing these beliefs involves attempting to provide robust reasons to conclude that God does in fact exist, and so that will be the goal of this essay.

Before that can be done, however, a definition of “God” needs to be provided. For the purpose of this essay, “God” can be defined as a supremely powerful, intelligent being, who exists necessarily and eternally. While this definition may seem like it presumes a lot, each of the elements of the definition can be shown to be reasonable, when attempting to conceptualize a being which is responsible for the existence of the current reality:

- Supremely powerful - This is the being that is being suggested to explain the existence of everything else, via creation. Therefore, this being must be powerful enough to create
- Intelligent - The constituent elements of creation have properties which define their behavior in creation, such as mass or charge. Therefore, a being responsible for their existence must have a concept of properties, in order to create a situation in which they are meaningful, and apply them to entities in that creation, or to creation itself. It also seems reasonable that if this being created something, then it has a will, as there is no obvious reason why it would need to create, or after having created, need to sustain a creation so that it continues to exist, apart from choosing to of its own will. And both intelligence and a will require a mind or center of consciousness
- Exists necessarily and eternally - If this being is being proposed as the cause of all other things besides itself, then by definition it could not have had a beginning or cause, but must have always existed

The alternative hypothesis to explain the existence of reality involves suggesting that there is no intelligence at the root of what currently exists. Somehow, everything simply exists, and there is no reason or explanation as to why. This would also mean that there is at least one thing with no intellect which never began to exist, but has simply always existed, and can be seen as the cause of everything else which began to exist. An Atheist finds this hypothesis more likely, when comparing it to the God hypothesis.

So, the two hypotheses being put forth can be summarized as:

1. The God hypothesis - there is an intelligent agent responsible for reality
2. The Atheist hypothesis - there is no intelligent agent responsible for reality

Evaluating the Two Hypotheses: The Cosmological Dilemma

When evaluating the two hypotheses being put forth, it makes sense to begin by considering the origin of reality. It is a fact that things exist, and that events are taking place, but logically, that process cannot extend infinitely into the past. Eventually, the chain of causes leading to this point must terminate in an ultimate cause, and there also must be a finite series of steps between that first cause and now, otherwise, logical impossibilities are implied.

Consider the following example:

1. Suppose there is a person, John, at an arbitrary point in a causal chain, x
2. In order for the atoms that comprise John's body to be where they are at point x, there had to be forces acting on them at x - 1, which account for their current location. In order for the atoms that comprise John's body to be where they are at x - 1, there had to be forces acting on them at x - 2. And so on
3. Suppose this causal chain is infinite
4. Then, John is a product of a sequence of events represented by: x - ∞, x - (∞ - 1), x - (∞ - 2), ..., x - 1, x
5. But it is impossible to reach x from x - ∞, as no matter how many events take place after x - ∞, the infinite series will never be traversed
6. Therefore, John must be a product of a sequence of events represented by: x - n, x - (n - 1), x - (n - 2), ..., x - 1, x, where n is some finite number, or else his existence would be a logical impossibility, as his atoms never would have reached their current arrangement. And, under the God hypothesis, x - n represents the point at which an uncaused, first cause, God, created the universe

Under the Atheist hypothesis, the root cause of reality is unintelligent, and impersonal. But, that position is intuitively (even if not formally) problematic. Why would an unintelligent thing exist eternally and necessarily, rather than not at all? What made that be the case? What reason is there to believe that there could be an unintelligent thing which simply exists, for no reason, and then goes on to cause events resulting in the current reality? There can be no deeper answer in Atheism beyond asserting that it is a brute fact, because the only possible explanation that offers a non-arbitrary foundation - namely, a necessary, intelligent being - has been rejected.

Evaluating the Two Hypotheses: The Evidence of Purposeful Design

Beyond failing to provide an ultimate answer as to why and how the unintelligent material universe exists at all, the plausibility of the Atheist hypothesis is also diminished by the overwhelming evidence that the universe has been purposefully finely-tuned to allow intelligent life to exist. Observational measurements of the strength of the fundamental forces of nature, and the properties of the fundamental particles of the universe, reveal that the slightest alteration in their values would render life in the universe impossible.

What follows are some examples of the extreme degree of the universe's fine-tuning, written by qualified experts in their fields:

Stephen Hawking earned a PhD in physics from the University of Cambridge, and taught at Cambridge for 30 years:

> <u>A Brief History of Time - Chapter 8</u>
> Why did the universe start out with so nearly the critical rate of expansion that separates models that recollapse from those that go on expanding forever, that even now, ten thousand million years later, it is still expanding at nearly the critical rate? **If the rate of expansion one second after the big bang had been smaller by even**

one part in a hundred thousand million million, the universe would have recollapsed before it ever reached its present size.

Martin Rees earned a PhD in astronomy from the University of Cambridge, and served as a professor at Cambridge:

> Just Six Numbers - Chapter 1
> The cosmos is so vast because there is one crucially important huge number N in nature, equal to 1, 000, 000, 000, 000, 000, 000, 000, 000, 000, 000, 000, 000, 000. This number measures the strength of the electrical forces that hold atoms together, divided by the force of gravity between them. **If N had a few less zeros, only a short-lived miniature universe could exist: no creatures could grow larger than insects, and there would be no time for biological evolution.**
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> Another number, ε, whose value is 0.007, defines how firmly atomic nuclei bind together and how all the atoms on Earth were made. Its value controls the power from the Sun and, more sensitively, how stars transmute hydrogen into all the atoms of the periodic table. Carbon and oxygen are common, whereas gold and uranium are rare, because of what happens in the stars. **If ε were 0.006 or 0.008, we could not exist.**

Leonard Susskind earned a PhD in physics from Cornell University, and served as a professor at Stanford University. He is regarded as one of the fathers of String Theory:

> The Cosmic Landscape - Chapter 6
> It would do no good for the nuclear physics to be “just right” if the universe had no stars. Remember that a perfectly homogeneous universe would never give birth to these objects. Stars, galaxies, and planets are all the result of the slight lumpiness at the beginning. **Early on, the density contrast was about 10^{-5} in magnitude, but what if it had been a little bigger or a little smaller? If the lumpiness had been much less, let's say, 10^{-6}, in the early universe, galaxies would be small and the stars, very sparse. They would not have had sufficient gravity to hang on to the complex atoms that were spewed out by supernovae; these atoms would have been unavailable for the next generation of stars. Make the density contrast a little less than that, and no galaxies or stars would form at all.**
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> **What would happen if the lumpiness were larger than 10^{-5}? A factor of one hundred larger, and the universe would be full of violent, ravenous monsters that would swallow and digest galaxies before they were even finished forming.**

Paul Davies earned a PhD in physics from University College London, and served as professor of physics at Arizona State University:

> The Goldilocks Enigma - Chapter 7
> The fact that the neutron's mass is coincidentally just a little bit more than the combined mass of the proton, electron, and neutrino is what enables free neutrons to decay. If the neutron were even very slightly lighter, it could not decay without an

energy input of some sort. **If the neutron were lighter still, yet only by a fraction of 1 percent, it would have less mass than the proton, and the tables would be turned: isolated protons, rather than neutrons, would be unstable. Then protons would decay into neutrons and positrons, with disastrous consequences for life, because without protons there could be no atoms and no chemistry.**

Geraint F. Lewis earned a PhD in astrophysics from the University of Cambridge, and served as professor of astrophysics at the University of Sydney. Luke A. Barnes also earned his PhD in astronomy from the University of Cambridge:

> A Fortunate Universe - Chapter 1
> Dark energy could be a number of things, including something called vacuum energy, that is, the energy present in empty space even when there are no particles. Our best theory of the structure of matter tells us that each fundamental type of matter will contribute to this vacuum energy, either positively or negatively. Alarmingly, the typical size of these contributions is larger than the amount of dark energy in our Universe by a factor of 1 followed by 120 zeros, or in scientific notation 10^{120}.
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> **What would happen if the amount of dark energy in our Universe were, say, a trillion (10^{12}) times larger? This sounds like a big increase, but it is a pittance compared to 10^{120}. In that universe, the expansion of space would be so rapid that no galaxies, stars or planets would form.** The universe would contain a thin soup of hydrogen and helium. At most, these particles might occasionally bounce off each other, and head back out into space for another trillion years of lonely isolation.
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> A Fortunate Universe - Chapter 5
> Thanks to the fine-tuning of the initial density of the universe, it doesn't take much to induce a suicidal expansion. **If we look at the density of the Universe just one nanosecond after the Big Bang, it was immense, around 10^{24} kg per cubic metre. This is a big number, but if the Universe was only a single kg per cubic metre higher, the Universe would have collapsed by now. And with a single kg per cubic metre less the Universe would have expanded too rapidly to form stars and galaxies.**

Hugh Ross earned a PhD in astronomy from the University of Toronto, and did postdoctoral research at Caltech for 5 years:

> The Creator and the Cosmos - Chapter 15
> How delicate is the balance for the strong nuclear force? **If the strong nuclear force were just 4% stronger, the diproton (an atom with two protons and no neutrons) would form. Diprotons would cause stars to so rapidly exhaust their nuclear fuel as to make any kind of physical life impossible. On the other hand, if the strong nuclear force were just 10% weaker, carbon, oxygen, and nitrogen would be unstable and again physical life would be impossible.**

Does this just apply to life as we know it? No, this holds true for any conceivable kind of life chemistry throughout the cosmos. This delicate condition must be met universally.

The Creator and the Cosmos - Chapter 15
In the first moments after creation, the universe contained about 10 billion and 1 nucleons for every 10 billion antinucleons. The 10 billion antinucleons annihilated the 10 billion nucleons, generating an enormous amount of energy. All the galaxies and stars that make up the universe today were formed from the leftover nucleons. If the initial excess of nucleons over antinucleons were any less, there would not be enough matter for galaxies, stars, and heavy elements to form. If the excess were any greater, galaxies would form, but they would so efficiently condense and trap radiation that none of them would fragment to form stars and planets.

The Creator and the Cosmos - Chapter 15
A fourth measured parameter, another very sensitive one, is the ratio of the electromagnetic force constant to the gravitational force constant. **If the electromagnetic force relative to gravity were increased by just one part in 10^{40}, the full range of small star sizes and types needed to make life possible would not form. And, if it were decreased by just one part in 10^{40}, the full range of large star sizes and types needed to make life possible would not form. For life to be possible in the universe, the full range of both large and small star sizes and types must exist.** Large stars must exist because only their thermonuclear furnaces produce most of the life-essential elements. Small stars like the Sun must exist because only small stars burn long enough and stably enough to sustain a planet with life.

Many more examples of the above could be cited, but these are sufficient to demonstrate that fine-tuning is real, and qualified experts acknowledge that there really is an extreme degree of precision with which the universe operates, the slightest alteration of which would knock everything out of balance, and often render complex life of any form impossible.

Examining Responses to Fine-Tuning Arguments

Having presented evidence for fine-tuning, it is important to consider several common objections raised by Atheists in response to fine-tuning arguments, and to evaluate whether these responses meaningfully diminish the force of the evidence:

- Argument: If the universe did not allow for life, we would not be here to observe it. Therefore, the universe appearing to be finely-tuned is just survivorship bias
- Response: This is a form of the Weak Anthropic Principle, which is an observation, not an explanation. When discussing the fine-tuning of the physical universe, one is considering why it seems as if this universe was created finely-tuned for life to arise, given how precariously balanced everything is. This is essentially saying, "Who cares, we are here, after all", which misses the whole point of the investigation, and why fine-tuning is compelling - thoughtful people recognize that it demands an explanation, given that it so easily could have been another way, where the existence of any life would have been an impossibility

- Argument: We do not know whether, if one of the constants were tweaked, another would alter itself to compensate, thereby preserving a life-sustaining universe
- Response: If a force augmented or diminished itself so that the universe continued to sustain life, in response to the alteration of another force, that would be even more remarkable evidence that intelligent life is not here by accident. This sort of mechanism would not only itself need to be finely-tuned, but would also require explanation - there would need to be a reason why the force alters itself, and why it does so in a way that preserves the phenomena allowing for complex life in the universe

- Argument: We do not know the total set of constant values which would sustain life. Maybe it is a large set
- Response: Experiments performed on this universe demonstrate that the set of life-sustaining universes is a vanishingly small subset of all potential universes. This is because all necessary forces - forces which need to have a non-zero value in order for complex life to exist - have an infinite set of values which render life impossible, as they go toward zero, or infinity, or both. If these values must be within a certain range, and cannot be any possible value, then fine-tuning is being invoked again, because that requires an explanation
- Also, consider that there are an infinite number of possible universes in which, nearly everything else being the same, electrons do not exist. Or, an infinite number of possible universes in which, nearly everything else being the same, there is no gravitational force. Etc. There is no logical basis for claiming that any fundamental particle or force "must" exist, at all, with any value, in all possible universes

- Argument: These alterations only disallow life *as we know it*. We have no idea if other forms of life would arise, if these allegedly fine-tuned parameters were tweaked outside of what life as we know it could sustain
- Response: No, they do not disallow only life as we know it. Many of the fine-tuning instances disallow any form of life being possible, or even the formation of chemistry, or atoms - for example, the value of the Cosmological Constant, or the ratio of matter to antimatter. Similarly, if fundamental particles such as quarks, electrons, and photons did not exist, or had slightly different properties, there would be no atoms at all

- Argument: Most of the universe has no life, and therefore, this universe is definitely not “finely-tuned” for something which exists in far less than a fraction of 1% of it
- Response: The universe being “finely-tuned” for life means that it allows for life to potentially exist. No one who advocates for fine-tuning is arguing that life is possible everywhere in the universe. Rather, fine-tuning advocates are pointing out that life merely being possible *anywhere* in the universe requires an amazing series of factors to align, and their alignment by chance, without any intelligent guidance, is essentially impossible

- Argument: This universe may be one of an infinite number of universes in a multiverse. Therefore, the universe appears to be finely-tuned only because it is one of the universes in the multiverse which had everything align just right

- Response: This is, in essence, conceding the argument. It is an admission that the universe is indeed finely-tuned, but rather than admitting that God made it, an appeal is made to an unobservable machine which somehow creates infinite universes
- There is no evidence that there is a multiverse, which is generating universes with different and apparently random values for all the fundamental constants, such that some of them may get "lucky" and be suitable for complex life
- The multiverse, if it existed, would be even more fantastically complex than this universe, would itself require fine-tuning, and would also need an ultimate explanation

- Argument: Many of these forces which seem independent may turn out to be derived, meaning that they actually could not be any other value, as their values are ultimately determined by more fundamental forces
- Response: Suppose every force is derived. Not just one or two, but all of them. Suppose the reason why force X or Y or Z cannot be tweaked is because there is one force, G, causing everything to be what it is, allowing life to exist. Many questions still need answering:
    i. What is the nature of G, such that it is the source of all this phenomena that is observed in nature (Gravitation, Electromagnetism, etc.)? What exactly is it?
    ii. Why does G exist, and persist in existing?
    iii. Why is G such that the forces that it was responsible for causing had the values which allowed for life?

  In summary, if all the forces are derived, it is of no consequence to the force of this argument. It merely moves the explanation back one step, and over time, builds a fantastically complicated ultimate force, G, which also needs an explanation, and is arguably more inexplicable, because it is responsible for so many phenomena, all of which are so finely-tuned for life

Fine-tuning is a robust argument. The responses from the Atheist side usually miss the point, and none of them diminish the real force of the argument. And, evidence from the universe's fine-tuning strongly favors the hypothesis that the first cause was an extremely intelligent being, who created the universe with intentionality, rather than something with no intellect. The creation is precariously balanced on many razors' edges, with the slightest gust of wind sending it off of a precipice into chaos, and rendering it useless for any hopes of ever fostering intelligent life.

Cascading Improbabilities

The existence of a universe which has the potential for fostering life, however, is only one of several hurdles which must be overcome in order for intelligent life to exist. The size, composition, atmosphere, and other traits of the planet housing the life also needed to satisfy an incredible array of conditions in order for it to be a viable candidate for sustaining life, and the same is true of the planet's star, solar system, galaxy, galaxy group, supercluster, and so on.

Then, there is the hurdle of actually getting life to arise on a planet by naturalistic processes. What follows are a few citations detailing the odds involved with life arising from nonlife (abiogenesis):

John Lennox earned a PhD in mathematics from the University of Cambridge, and has taught various subjects at the University of Wales, and the University of Oxford:

Cosmic Chemistry - Chapter 8

In any case, getting the amino acid building blocks would only be the beginning of the difficulties in the way of would-be cell-constructors. Suppose, for instance, that we want to make a protein that involves 100 amino acids (this would be a short protein - most are at least three times as long). Amino acids exist in two chiral forms that are mirror images of each other, called L and D forms. These two forms appear in equal numbers in prebiotic simulation experiments, so that the probability of getting one or other of the forms is roughly 1/2. However, the great majority of the proteins found in nature contain only the L-form. The probability of getting 100 amino acids of L-form is, therefore, $(1/2)^{100}$, which is about 1 chance in 10^{30}.

Next, the amino acids have to be joined together. Functional protein requires all the bonds to be of a certain type - peptide bonds - in order for it to fold into the correct three-dimensional structure. Yet in prebiotic simulations no more than half of the bonds are peptide bonds. So the probability of a peptide bond is about 1/2, and again the probability of getting 100 such bonds is 1 in 10^{30}. Thus the probability of getting 100 L-acids at random with peptide bonds is about 1 in 10^{60}. In the absence of such complex information processing molecules in the prebiotic state, variable chirality, bonding, and amino acid sequence would not lead to reproducible folded states which are essential to molecular function. Of course, a short protein is much less complicated than the simplest cell for which the probabilities would consequently be very much smaller.

Cosmic Chemistry - Chapter 8

The analogy of letters and words is exactly right since the crucial feature that characterizes proteins is that the amino acids which comprise them *must be in exactly the right places in the chain*. For proteins are not made simply by mixing the right amino acids together in the correct proportions, as we might mix an inorganic acid with an alkali to produce a salt and water. Proteins are immensely specialized and intricate constructions of long chains of amino acid molecules in a specific linear order. The amino acids may be thought of as the twenty 'letters' of a chemical 'alphabet'. Then the protein is an incredibly long 'word' in that alphabet. In this word every amino acid 'letter' must be in the right place. That is, the order in which the amino acids are arranged in the chain is the vital thing, not simply the fact that they are there - just as the letters in a word, or the keystrokes in a computer program, must be in the correct order for the word to mean what it should mean, or for the program to work. A single letter in the wrong place, and the word could become another word or complete nonsense; a single incorrect keystroke in a computer program, and it will probably cease to function.

The point of this argument is made very clear from elementary probability calculations. The probability of getting the correct amino acid at a specific site in the protein is 1/20. Thus the probability of getting 100 amino acids in the correct order would be $(1/20)^{100}$, which is about 1 in 10^{130}, and therefore unimaginably small.

Stephen Meyer earned a PhD in the philosophy of science from the University of Cambridge:

> Signature in the Cell - Chapter 9
> Axe's improved estimate of how rare functional proteins are within "sequence space" has now made it possible to calculate the probability that a 150-amino-acid compound assembled by random interactions in a prebiotic soup would be a functional protein. This calculation can be made by multiplying the three independent probabilities by one another: the probability of incorporating only peptide bonds (1 in 10^{45}), the probability of incorporating only left-handed amino acids (1 in 10^{45}), and the probability of achieving correct amino-acid sequencing (using Axe's 1 in 10^{74} estimate). Making that calculation (multiplying the separate probabilities by adding their exponents: $10^{45 + 45 + 74}$) gives a dramatic answer. The odds of getting even one functional protein of modest length (150 amino acids) by chance from a prebiotic soup is no better than 1 chance in 10^{164}....
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> And the problem is even worse than this for at least two reasons. First, Axe's experiments calculated the odds of finding a relatively short protein by chance alone. More typical proteins have hundreds of amino acids, and in many cases, their function requires close association with other protein chains. For example, the typical RNA polymerase - the large molecular machine the cell uses to copy genetic information during transcription (discussed in Chapter 5) - has over 3,000 functionally specified amino acids. The probability of producing such a protein and many other necessary proteins by chance would be far smaller than the odds of producing a 150-amino-acid protein.

As detailed above, abiogenesis is just one more (comparatively small) hurdle near the end of a sequence of hurdles that combine to diminish the plausibility of the Atheistic hypothesis. And, in order for abiogenesis to matter, the first organism would need to survive long enough to reproduce, and eventually accumulate mutations until intelligent life is produced, each of which carry with them their own unlikelihoods. These considerations help to demonstrate that the fine-tuning involved for the existence of intelligent life has many layers, each arguably adding to the likelihood that an intelligent agent is responsible for life.

The Desirability of God's Existence

Lastly, while not a technical argument itself, a point that should be considered is that, given what kind of being God theoretically would be, every rational person should desire that He exist, and be very open to God existing. This is because God, in order to have created this reality, must be extremely intelligent. And, an extremely intelligent being, who would choose to make the universe in all of its creative glory, would be interesting to get to know, if such a thing is possible. And given that God would have chosen to create a universe in such a precise way which allows the existence of intelligent life, and knowing that intelligent life would eventually arise somewhere in the creation, it is reasonable to assume that God would communicate with that life at some point, rather than, puzzlingly, absolutely refuse to communicate with any of them at any point in time, even when He knows that they would desire it, and that it would greatly facilitate them doing His will. So, the ability to

communicate with God should be desired, and there is good logical reason for believing that God would communicate with the creation.

Conclusion

In conclusion, there are compelling reasons to believe that the universe is created by an intelligent being. A cosmological beginning requires a first cause. The fine-tuning observed in the universe is evidence of intentionality, and implies that this first cause is intelligent, rather than unintelligent.

The position that Atheism takes with respect to the existence of something rather than nothing, by rejecting belief in God, is one of arbitrariness - things simply exist “because”, and there is no meaning or reason or purpose which is even possible, because words like “meaning” suggest an intelligent agent is behind reality. Therefore, there can never be any progress in Atheism towards finding answers to the fundamental questions of existence, because at base, there are no answers - only factoids and curiosities which still terminate in things existing for no reason (for some reason).

The question of which precise concept of God to believe in belongs to the realm of comparative religion, and so is beyond the scope of this essay. However, the basic assumption that a supremely powerful, intelligent, eternal being exists is a solid foundation from which to construct a worldview, because there are good reasons for believing it.

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