PAST, PROBABILITY, AND TELEOLOGY

J.W. Wartick[228]

Once thought to be buried by the objections of detractors like Kant and Hume, the teleological argument[229] has recently seen a popular resurgence due to cosmological research.[230] Cosmology has revealed the improbability of our universe's life-permitting qualities. Most often, the teleological argument has been molded around this cosmological data, emphasizing the infinitesimally small probability of our universe's existence in light of the scientific data.[231] The popularity of the teleological argument has, unfortunately, also lead to popular—but illogical—methods by which opponents try to deny the implications of teleology by arguing that the universe is not improbable on atheistic naturalism. The failure of these

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[228] J.W. Wartick is a graduate student at Biola University studying for a Master's degree in Christian Apologetics. He maintains a website dedicated to philosophy of religion and apologetics at http://jwwartick.com/

[229] Also known as the "design argument."

[230] See Robin Collins, "The Teleological Argument," in William Lane Craig and J.P. Moreland (eds.), *The Blackwell Companion to Natural Theology*, (Blackwell, 2009), pp. 226-239; Robert Spitzer, *New Proofs for the Existence of God*, (Grand Rapids: Eerdmans, 2010); Richard Swinburne, *The Existence of God* (Oxford: Oxford University Press, 2004); Neil Mason (ed.), *God and Design: The Teleological Argument and Modern Science* (New York: Routledge, 2003); and Troy Nunley, "Fishnets, Firing Squads, and Fine-Tuning (Again)" in *Philosophia Christi* Vol. 12, No. 1, 2010) for some recent works on the argument.

[231] Other versions of the teleological argument are formulated around biological design. These biological arguments are part of the Intelligent Design movement. Cf. William Dembski, *Intelligent Design* (Downers Grove: InterVarsity Press, 1999); William Dembski, *The Design Inference* (Cambridge: Cambridge, 1998); Michael Behe, *Darwin's Black Box* (New York: Free Press, 2006); and Stephen Meyer, *Signature in the Cell* (New York: HarperOne, 2010) for just a few examples.

objections leads philosophers to a stunning conclusion: the high probability of a cosmic designer.

The Argument Stated

The teleological argument comes in many forms, some of which are stronger than others. The version defended here is from Robin Collins:

> "(1) Given the fine-tuning evidence, [a life-permitting universe] is very, very epistemically[232] unlikely under [atheistic naturalism[233]]...
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> "(2) Given the fine-tuning evidence, [a life-permitting universe] is not unlikely under theism
>
> "(3) Theism was advocated prior to the fine-tuning evidence (and has independent motivation)
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> "(4) Therefore… a life-permitting universe strongly supports theism over [atheistic] naturalism"[234]

Premise 1 is the key premise because the other premises are generally unchallenged. There are few—if any—who would

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[232] "Epistemology" is the "study of the nature of knowledge and justification." Robert Audi (ed.), *The Cambridge Dictionary of Philosophy* (Cambridge: Cambridge University Press, 1999), p. 273.

[233] The naturalism being expressed here is of the atheistic, materialist, physicalist variety. There are forms of naturalism which could be more compatible with a life-permitting universe, though these forms of naturalism would also be theistic in nature. One example could be process philosophy as expressed in David Ray Griffin, *Reenchantment Without Supernaturalism: A Process Philosophy of Religion*, (Ithica: Cornell University Press, 2001).

[234] Robin Collins, *The Teleological Argument*, p. 207. I've simplified Collins' version due to space constraints. A strength of this version of the argument is that the conclusion isn't "God exists" but that God's existence is more probable than not. Because this conclusion is weaker than the definitive "God exists," the argument is more easily defended, yet yields (largely) the same results apologetically.

argue that a life-permitting universe is unlikely given theism,[235] which leaves premise 2 unchallenged. Premise 3 seems obvious because many advocated theism before any version of the teleological argument even existed. Others were theists before discovering the argument.[236] The conclusion (4) simply follows from the premises. Therefore, the argument hinges upon Premise 1. Rather than focusing on the evidence for fine-tuning,[237] the defense presented here will focus on refuting objections to attributing the fine-tuning to design (theism) rather than chance.[238]

Modes of Necessity

One way to deny Premise 1 is to argue that the probabilities of past events are certain. The thinking goes that, because an event (the existence of the universe, for example), has happened, the probability that that event *would* happen is certain.[239] Richard

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[235] I know of no one in any literature who does argue in this way. Collins does provide a defense for this premise in *The Teleological Argument*, pp. 254ff.

[236] Collins, *The Teleological Argument*, p. 207.

[237] Interested readers can check out Robin Collins, "Evidence for Fine Tuning" in Neil Mason (ed.), *God and Design: The Teleological Argument and Modern Science* (New York: Routledge, 2003), pp. 178-199; Robert Spitzer, *New Proofs for the Existence of God*, pp. 47-74; and Robin Collins, *The Teleological Argument* for just a few examples.

[238] It is also possible to deny the conclusion by holding that the universe exists necessarily, but this is a rare objection. For some problems with holding to a necessary universe, see Stephen Parrish, *God and Necessity* (Lanham: University Press of America, 2001), pp. 217-250.

[239] One example of this can be seen in J.D. Barrow and F.J Tipler, *The Anthropic Cosmological* Principle, (Oxford: Oxford, 1986), wherein the authors argue that "The basic features of the Universe… must be *observed* to be of a type that allows the evolution of the observers, for if intelligent life did not evolve in an otherwise possible universe, it is obvious that no one would be asking the reason for the observed

Dawkins puts it this way, "The fact of our own existence is perhaps too surprising to bear… How is it that we find ourselves not merely existing, but surrounded by such complexity, such excellence, such endless forms so beautiful? …The answer is this: it could not have been otherwise, given that we are capable of noticing our existence at all and of asking questions about it."[240]

How are we to take such a statement? Perhaps Dawkins is implying that if an event *e* happened, the probability of *e* having happened is 1/1. That is true, but only trivially so.

The line of thinking is problematic when used against some forms of the teleological argument. Statistically, some people assert,[241] the odds that the universe would be life-permitting (like the one we observe) must be 1/1, because, we are here, after all, to observe it!
Imagine the following:

[properties]" (pp. 1-2). For an excellent response to this argument, see William Lane Craig, "Design and the Anthropic Fine-Tuning of the Universe" in *God and Design: The Teleological Argument and Modern Science*, edited Neil Mason (New York: Routledge, 2003), pp. 155-177. Alternatively, some accuse theists of not understanding exactly what "chance" means. Cf. Austin Cline, "Rebuttal to the Argument from Design: Design or Chance?" at http://atheism.about.com/od/argumentsforgod/a/design_4.htm (accessed December 1, 2010).

240 "Richard Dawkins on *The Greatest Show on Earth*"http://www.guardian.co.uk/books/video/2009/sep/21/richard-dawkins-greatest-show-earth (accessed November, 2009).

241 Barrow and Tipler, *The Anthropic Cosmological Principle*. See also Mike, "Classic Arguments for God" http://mwillett.org/atheism/classic.htm (Accessed December 2, 2010) who writes: "This argument ignores the size of the universe. There are hundreds of billions of galaxies, each with hundreds of billions of stars, any of which might have planets capable of supporting life. Even an impossibly improbable event is almost a certainty - and we already know of one planet that supports life."

> d: The chances of any one side coming up are (granted a fair die and surface) 1/6. I toss a die and roll a 1.

To argue that the universe had to be life-permitting because we are here to observe it is equivalent to saying that d had to happen, given that it did occur. The fact that something is observed, some insist, means that the probability that it would happen was 1/1.[242]

The analogy exemplifies an elementary philosophical error: the improper distinction between *de re versus de dicto* fallacy. *De dicto* necessity is "a matter of a proposition's being necessarily true" while de re necessity is "an object's having a property essentially or necessarily".[243] *De dicto* necessity ascribes necessity to a proposition, while de re necessity argues only that "…each *res* of a certain kind has a certain property essentially or necessarily."[244]

Consider the statement, "What is seen to be sitting is necessarily sitting." The statement is true in the *de dicto* sense, but false in the *de re* sense. In the *de dicto* sense, it is written as "It is necessarily true that whatever is seen to be sitting is sitting." In the *de re* sense, it states "Whatever is seen to be

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[242] Barrow and Tipler, *The Anthropic Cosmological Principle,* pp. 1-2, 566; other examples come from my personal conversations with atheists. For example, in response to my comment that "One can't just take some state of affairs and then assert that because it's true, the probability that it *would* be true is [I should have said 'was'] 1/1," one atheist friend wrote that "That's precisely what can be done. If it is true, it was always true. We are simply ignorant of the eventual outcome at any given point prior to the event." Furthermore, the friend wrote, "[Statistical probabilities] have no meaning in retrospect." I quote the friend as an example of someone making this assertion in the general population, because this specific error is much more difficult to find in philosophical literature due to its fundamental flaw, discussed in the following pages.

[243] Alvin Plantinga, *The Nature of Necessity*, (Oxford: Oxford University Press, 1974), p. v.

[244] Plantinga, *The Nature of Necessity*, p. 10.

sitting has the property of sitting necessarily or essentially."[245] The *de re* reading is mistaken, for that which is sitting *could* instead be standing, dancing, or doing any manner of things other than sitting.

The distinction is important regarding past events, such as the universe coming into existence or rolling a die and having it come up as a 1. Those who, with Dawkins, argue that the fact of the universe's existence simply "could not have been otherwise, given that we are capable of noticing…"[246] are committing this basic error. The proposition in question is:

> (1) Any event which has obtained has necessarily obtained.
>
> But this is only true in the *de dicto* sense. That is, it is only true that:
>
> (2) It is necessarily the case that whatever events have obtained have obtained.
>
> But it is not true in the *de re* sense:
>
> (3) Whatever event has obtained has obtained necessarily or essentially.

Those who use this argument against teleology have assigned to the proposition that the universe exists de re necessity, when in reality it is only a de dicto necessity. The problem is the same as it was when referring to the sitting man; just because something *is* doesn't mean it *must be*.

In other words, it is necessarily true that if p is the case then p is the case. Those who are arguing (3), however, need a much stronger conclusion, namely, necessarily *p*. But this simply doesn't follow from reality, as was demonstrated with the sitting man. Whether the statement is "A man is sitting" or "A universe is existing," there needs to be some kind of argument

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[245] Plantinga, *The Nature of Necessity*, pp. 10-11.

[246] "Richard Dawkins on *The Greatest Show on Earth*" http://www.guardian.co.uk/books/video/2009/sep/21/richard-dawkins-greatest-show-earth (accessed November, 2009).

to demonstrate necessity of the *de re* sense. The statement itself is only true in the *de dicto* sense, and trivially so.[247]

Epistemic Probability

Premise 1 is also attacked by arguing that the probability of our universe's existence is inscrutable. Keith Parsons argues that "[I]f the universe is the ultimate brute fact, it is neither likely nor unlikely, probable nor improbable; it simply is."[248] The proponent of the teleological argument can respond by noting the distinction between mathematical and epistemic probability.[249]

Robin Collins demonstrates the distinction between the two types of probability through the following analogy:

> [W]hen people say that the Thesis of Common Ancestry is probably true given the fossil and genetic evidence we currently have, they are clearly not talking about statistical probability, since this thesis is about a unique event in Earth's history. The same holds for any claim about the probable truth (or 'empirical adequacy') of a scientific theory.[250]

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[247] Thanks to Stephen Parrish for enlightening discourse on this subject

[248] Quoted by Collins, *The Teleological Argument*, p. 226. See also Graham Oppy, *Arguing About Gods* (Cambridge: Cambridge University Press, 2009), p. 233, where Oppy writes (favorably referencing Humean thought) "…at any time, the order in the world is explained as the product of order that existed at an even earlier time," leading not only to a kind of deterministic origin of past events, but also to a kind of infinite regress of explanations (which therefore leads to the inscrutability of ultimate explanation).

[249] Robin Collins, *The Teleological Argument*, pp. 226-239. See Alvin Plantinga, *Warrant and Proper Function* (Oxford: Oxford University Press, 1993) and *Warrant: The Current Debate* (Oxford: Oxford University Press, 1993) for an illuminating explanation of epistemic probability.

[250] Collins, *The Teleological Argument*, 226.

In other words, the one who asserts that the Thesis of Common Ancestry is probable is not claiming that it has an arbitrarily assigned 1/100 chance of being true as opposed to some hypothetical rival thesis, which has an arbitrary 1/1000 chance. There may not even be a way to discover such probabilities. Instead, he is claiming that the Thesis of Common Ancestry makes more sense than its rivals. He has analyzed whatever evidence has been laid before him and assigned a greater *epistemic* probability to the Thesis of Common Ancestry than he has to that of its rivals.

Basically, the distinction is between an exact, mathematical probability and an estimation of how probable some hypothesis is given pertinent background information. The proponent of the teleological argument can grant that the universe cannot be analyzed via mathematical probability, but still hold the argument is sound by analyzing the probability of our universe epistemically.[251] Rather than arguing that the probability of our universe's existence is 1/10^123[252] and should lead one to infer a designer, one can argue that the existence of our life-permitting universe favors the thesis of theism over the thesis of naturalism. The distinction allows one to weigh the mathematical probability as evidence for a hypothesis (theism, in this case) rather than inferring a conclusion from the probability (as would be done if one inferred a designer from the mathematical probability).[253]

Parsons' statement, therefore, could refer to the statistical probability—and it would be a mistake to use it in

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[251] Which would include mathematical probabilities as part of the background information.

[252] A vast underestimation of the mathematical improbability of our universe. See Spitzer, *New Proofs for the Existence of God*, pp. 47ff; Collins "Evidence for Fine-Tuning."

[253] Note that one doesn't even need mathematical probability in order to analyze things with epistemic probability. This can be seen in Collins' example of the Thesis of Common Ancestry.

that case as well[254]—but it definitely doesn't work when applied to epistemic probability. If Parsons is to argue that his view holds even for epistemic probability, he would have to assert that one cannot analyze the possibility of the universe. That this view is extreme is an understatement. Take two rival hypotheses about the origins of the universe: Naturalism (N) and Theism (T). Parsons would have to argue that there can be no evidence to support either N or T. Suppose one read a version of another argument for the existence of God which she found most convincing. On Parsons' view, she could not then believe that T is more probable than N as an explanation of the universe; she should instead remain ignorant and say "Well, the universe *just is*, after all. Whether or not God exists is irrelevant to the existence of the ultimate brute fact of the universe." Furthermore, there doesn't seem to be any reason to assign the misnomer of "ultimate brute fact" to the universe. It is a version of the "taxicab fallacy" in which one asserts that everything needs an explanation up to a point (here, that point would be the existence of the universe) and then jumps off the cab, arguing that "Here we have found something for which an explanation is unneeded."[255]

Therefore, the epistemic probability of the existence of the universe is what should be analyzed as opposed to the mathematical probability. Mathematical probabilities can serve as epistemic evidence, but they do not ground the teleological argument. The probability of our universe *can* be analyzed in an epistemic sense. It is a matter of what hypothesis one finds more likely as an explanation for our existence.

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[254] If Parson's statement is taken in this way, then it entails the kind of modal certainty discussed in the previous section.

[255] Note that some try to level this argument against theism by arguing that theism holds that God needs no explanation for His existence. That is false. Theists have held throughout most philosophical thought that God is a necessary being, which means the explanation for God's existence is found within the core of His being. God is uncaused, but not unexplainable.

The "Particularity" Objection

Another objection to Premise 1 involves asserting that the teleological argument is too effective. Opponents assert that any universe is equally improbable. The teleological argument is taken as an argument about *this particular* universe. The particularity objection occurs most often through disingenuous analogies for the teleological argument.

In order to examine this objection, the claims of the teleological argument must be clarified.[256] Returning to the first premise of Robin Collins' teleological argument, the subject of the argument is the *life-permitting universe*.[257] The emphasized portion is extremely important to note. The teleological argument is not arguing that, given the monumental epistemic improbability of *this particular* universe, we can see that theism is more likely than naturalism. Instead, the argument states that it is the improbability of *a* (read: *any*) life-permitting universe is so phenomenal that we ought to wonder how it is that the universe which is actual managed to come out as life-permitting at all. In other words, the teleological argument is not about the probability or improbability of *our own* universe *alone*, but is instead about the probability or improbability of *a life-permitting universe*, which our universe exemplifies.

The distinction can be drawn out by examining a couple frequent caricatures of the argument:

> (5) The teleological argument is often compared to a lottery with nearly infinite tickets. If one were to win this lottery, they would be astounded that they won![258]

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[256] Other versions of the teleological argument may fall victim to the "particularity" objection, but the teleological argument I endeavor to defend—outlined above—does not.

[257] Collins, *The Teleological Argument*, p. 207.

[258] This is sometimes called the "lottery fallacy." Cf. Victory Gijsbers, "Theistic Anthropic Principle Refuted: A Survey of Arguments Against the Theistic Anthropic Princple" at Positive Atheism

> (6) Another analogy which misrepresents the teleological argument expresses the argument like a poker hand. One looks at his or her own hand after it is dealt (and it happens to be the five of diamonds, the three of spades, the queen of clubs, and the seven and jack of hearts) and exclaims, "Oh my goodness, I can't believe I got this hand! The probability of getting this exact hand is so improbable! You stacked the deck!"[259]

The objection leveled against the teleological argument by such analogies is that in both cases the probability of *every* single entry is the same. In the case of (5), each lotto ticket is equally improbable. In the case of (6), each poker hand is equally improbable. Thus, the objection goes, we should not really care too much about the vast improbability of our own universe, because, after all, *any* universe would be equally improbable. Any *particular* universe is equally improbable.[260]

Such analogies, however, have stacked the deck against the teleological argument. The teleological argument, as stated above, has to do with the vast improbability of their being a life-permitting universe, not with the vast improbability of our

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http://www.positiveatheism.org/faq/anthropic.htm (accessed December 2, 2010) for an example of atheistic use of this analogy; see also Scott Oser, and Niall Shanks, "Review of *The Hidden Face of God* (2007)," at Infidels.org http://www.infidels.org/library/modern/scott_oser/hidden.html#fine-tuning (accessed December 2, 2010); there is another example of this in Stephen Law, *The Philosophy Gym: 25 Short Adventures in Thinking* (London: Review, 2003); see Glenn Peoples, "The Lottery Fallacy Fallacy" at http://www.beretta-online.com/wordpress/index.php/the-lottery-fallacy- for a succinct discussion of all three of the previous examples.

[259] Luke Muehlhauser, "Was Our Universe Fine-Tuned for iPads?" Common Sense Atheism, http://commonsenseatheism.com/?p=11784 (accessed December 2, 2010).

[260] See Law, *The Philosophy Gym: 25 Short Adventures in Thinking*, p. 72; Oser and Shanks, "Review of *The Hidden Face of God*."

particular universe. The key difference is in the specification of the parameters for the universe. Instead of arguing that our own particular universe is improbable, we are arguing that the probability of a life-permitting universe is infinitesimally small. The criterion for selection is specified. Thus, the analogies can be rewritten to properly exemplify the teleological argument:

> (5`) In the lottery analogy, suppose all the lottery tickets are colored white except for one, which is colored black. Furthermore, before the lottery drawing, it is revealed only if the black ticket is drawn will there be a "winner." The drawing takes place, and it is this black ticket that is drawn from among the billions and trillions of white tickets. Note that the key difference here is the specification. In this drawing, we specified *in advance* which ticket is the "winner": the black one. The fact that this ticket was selected despite the nearly insurmountable improbability of it cries out for explanation.
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> (6`) In the poker analogy, suppose the dealer said before the hands were dealt, "I feel as though I will deal you a royal flush five times in a row." When the cards are dealt, the player receives a royal flush. Then, the player is dealt a royal flush again, and again, until he has received five straight. Again, the phenomenal improbability of this specified event (being dealt five royal flushes after having that very event specified) is of note, as opposed to the equal improbability of being dealt any random selection of cards.[261]

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[261] Note that in either analogy, it is still *possible* in the broadly logical sense that the specified event could happen due to random chance. However, it is the specification itself that makes the event stand out. For more on the types of criterion for discovering design, see Dembski, *The Design Inference*; Dembski, *Intelligent Design*, John Leslie, "The Meaning of Design" in Neil Mason (ed.)*God and Design: The Teleological Argument and Modern Science* (New York: Routledge, 2003), pp. 55-65; Craig, "Design and the Anthropic Fine-Tuning of the Universe," pp. 161ff.

Note that in each analogy, the particular selection made is incredibly improbable, though that would still be true of *any* particular selection. It is the specification: the black ticket or the royal flushes, which explains the key thrust of the teleological argument. In either scenario, the specified range of positive selections (black ticket; royal flushes) is exceedingly improbable in relation to the negative choices (white ticket; any other combination of cards).[262]

The teleological argument relies heavily on the fact that it is arguing for a *specified* universe, not a *particular* universe. It picks a feature from a range of possibilities (in this case, life-permitting universes) and argues that the improbability of our universe exhibiting this feature is such that it favors theism over alternative hypotheses. The fact that the teleological argument specifies a type of universe, as opposed to arguing from our particular universe, means that those who argue from particularity are simply mistaken.

Returning to Modes

The different analogies and misrepresentations of the teleological argument illustrate a different way to view the modal logic behind the ideas involved. Perhaps the opponent of teleology is not making such a basic error as a *de dicto* versus *de re* fallacy. Perhaps she is instead arguing the rather extreme view that:

> (7) Anything that obtains is not improbable, given that *something* had to obtain (we are here, after all).

There are a number of things to say about (7). First, this adjustment does not rescue those who argue, like Dawkins, that that which has obtained, necessarily obtained. Those wishing to maintain that kind of reasoning still fall victim to the fallacy of

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[262] These examples are drawn from those found in William Lane Craig, *Reasonable Faith* (Wheaton: Crossway Books, 2008), pp. 164-66. They are also drawn from William Lane Craig, *On Guard* (Colorado Springs: David C. Cook, 2010), pp. 113-115.

distinguishing modes of necessity. Simply stating that *something* had to happen doesn't allow someone to argue that *this exact thing* had to happen.

One immediate problem with (7) is that it is question-begging. Here the opponent of the teleological argument grants that the argument is capable of revealing some kind of truth, but then they refuse the argument its weight. The fact that we exist, they argue, is enough to discount the vast improbability of even such a specified event as the life-permitting universe. In other words, "It happened, so the probability doesn't matter."[263] The teleological argument expresses the premise that a life-permitting universe is extraordinarily improbable, granting naturalism. Arguing against this premise (arguing that the life-permitting universe is not improbable on naturalism) by simply saying that the probabilities don't matter is to unjustifiably assume the premise is false.

There is a similar, secondary problem: (7) doesn't do justice to the evidence. The fact of the matter is that our universe is extraordinarily improbable! One example of the statistical improbability of our universe was expressed by the stating that "…the Creator would have to aim for an absurdly tiny volume of the phase space of possible universes—about 1/10^10^123 of the entire volume…"[264] Simply dismissing the kind of improbabilities the teleological argument rests upon by saying "Oh well, it happened!" is disingenuous.

The argument in (7) also misses the point of specification. It is exceedingly more probable that our universe would be life-prohibiting than life-permitting, yet here we are. The teleological argument specifies life-permitting universes as the subject. The argument is that such a universe is extremely

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263 Again, one can see this kind of argument in what I call the "observer fallacy": the argument is that the only reason we think there is design present in our universe is because we are capable of observing it. See again "Richard Dawkins on *The Greatest Show on Earth*"; Barrow and Tipler, *The Anthropic Cosmological Principle*, pp. 1-2.

264 Roger Penrose quoted in Robert Spitzer, *New Proofs for the Existence of God*, p. 58.

improbable, so much so that it favors theism over naturalism if such a universe exists. Again, dismissing the argument simply because we are here is to miss the entire point of the argument.

(7) also seems to fall victim to the same modal fallacy as (3) above. It can be demonstrated by analyzing the statement with *de dicto* and *de re* senses. Take the following:

> (8) Necessarily, something has obtained.

This is a true statement, but only on the *de dicto* (and tautological) reading of:

> (9) It is necessarily the case that something has obtained, because something has obtained.

But (7) requires us to read (8) as:

> (7`) Something obtained necessarily.

(7`) is the *de re* reading of (8). And again, this simply doesn't follow from (8). It is not the case that *something had to obtain*. Rather, it is the case that something has obtained. Thus, (7) and (7`) are question begging and modally fallacious.

Conclusion

A survey of the common objections to the teleological argument has revealed that they can be defeated. Most are either modally fallacious or question begging. Each of these counter-arguments to the teleological argument addresses Premise 1, "Given the fine-tuning evidence, [a life-permitting universe] is very, very epistemically unlikely under [atheistic naturalism]."[265] That these objections fail means that the only premise which suffers any kind of dispute stands firm. The premises lead to the conclusion that the existence of our life-

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[265] Collins, *The Teleological Argument*, p. 207.

supporting universe strongly favors theism over atheistic naturalism. *Ergo Deus est.*[266]

[266] My most sincere gratitude must go to my peer editors, whose helpful comments vastly improved this essay. Any remaining errors are wholly my own fault. *SDG*.