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*Atheistic Teleology**

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Wesley Salmon and Michael Martin argue that scientific considerations about the order in the universe justify atheism. After sketching Salmon's argument, I examine the nature of begging the question and argue that Martin takes a sufficient condition of that fallacy to be a necessary condition. After a pragmatic account to the fallacy is recommended, I point out how Salmon's and Martin's beg the question against all save those who already adhere to atheism and that the crucial considerations that they take to be distinctly scientific are really extra-scientific considerations, giving a specious impression that they are uncontroversial to all who accept mainstream science.

1. Introduction

That the universe exhibits order is lost on very few who take the slightest effort to think about the world. Much of contemporary scientific teaching consists in conveying to students the regular, consistent patterns of behavior of both inorganic and organic constituents of the world. That there is order in the world is uncontroversial. What remains controversial is what we should make of the observable order. The Argument from Design is famous for deriving theistic conclusions from the order of the universe. Contemporary versions of this argument like the Fine Tuning Argument appeal to quite specific fortuitous convergences of states of the world for some apparent purpose, like the genesis, development, and thriving of the human race.

Hume's *Dialogues Concerning Natural Religion* famously contain the canonical criticisms of theistic arguments from design. Anyone hoping to infer the existence of the theistic God from the regular patterns in the world must contend not only with Hume's attempts to undermine this inference, but they must also contend with Hume's twist on the problem of evil. Not only does the existence and character of observable apparent evil consist in a kind of disorder that undermines the theistic inference, but they also, says Hume's Philo, provide grist

* A version of this material was presented to an audience at the California State University at Fresno and I am grateful to members of the audience for discussion of these ideas. I am especially indebted to Otavio Bueno for his comments on these ideas.

for the mill of someone inferring that the world most definitely is not created by the theistic God. Lesser gods, at best, seem to be the best explanation for the apparent inconveniences and the horrific evils of which we are all too often all too aware.

Wesley Salmon picks up this thread in Hume's *Dialogues* and develops an atheistic teleological argument.¹ In brief, Salmon's argument is that since nearly all of the ordered things in the universe do not have disembodied, perfect, infinite, solitary creators, if there is any probable conclusion to be derived about the universe as a whole, it is that it was not created by God. Nancy Cartwright maintains that Salmon's argument begs the question² and Michael Martin has weighed in to defend Salmon's argument from this charge and to restate and to expand the argument.³ In this paper I will argue that the Salmon/Martin arguments do, indeed, beg the question and because of this they serve no useful apologetic function for the atheist.

2. The Dispute

Salmon's argument is Bayesian. Using Cartwright's and Martin's heuristics, let

- D = the class of objects created by an intelligent being
- O = the class of objects that exhibit order
- P(D,O) = the probability that an object created by an intelligent being exhibits order
- P(~D,O) = the probability that an object not created by an intelligent being exhibits order
- P(D) = the probability of an object created by an intelligent being
- P(O) = the probability of an object exhibiting order
- P(~D) = the probability of an object not created by an intelligent being
- P(O,D) = the probability that an object exhibiting order is created by an intelligent being
- P(O,~D) = the probability that an object exhibiting order is not created by an intelligent being.

Bayes' Theorem, then, becomes:

$$P(O, D) = \frac{P(D) \times P(D, O)}{P(D) \times P(D, O) + P(\sim D) \times P(\sim D, O)}$$

Accordingly,

$$\begin{aligned} P(O,D) &= [P(D,O) \times P(D)] / P(O) \\ P(O,\sim D) &= [P(\sim D,O) \times P(\sim D)] / P(O) \end{aligned}$$

¹ Wesley C. Salmon, "Religion and Science: A New Look at Hume's *Dialogues*," *Philosophical Studies*, 33 (1978), 143–76.

² Nancy Cartwright, "Comments on Wesley Salmon's 'Science and Religion ...'," *Philosophical Studies*, 33 (1978), 177–83.

³ Michael Martin, "Atheistic Teleological Arguments," in R. Douglas Geivett and Brendan Sweetman, *Contemporary Perspectives on Religious Epistemology* (New York: Oxford University Press, 1992), 43–77; reprinted from *Atheism: A Philosophical Justification* (Philadelphia: Temple University Press, 1990), Ch. 3.

As with all Bayesian analyses, the prior probabilities are the problematic items in the analysis, save for well-defined situations like draws from a standard deck of playing cards or rolls of fair dice. Salmon attempts to discharge the obligation of providing a fair assessment of these probabilities, P(D) and P(~D), as follows. To be sure there are a great many designed objects: watches, skyscrapers, and computers, but there are so many more things that are not the result of the activities of intelligent beings—atoms and molecules, planets and galaxies—that P(~D) is much greater than P(D).⁴ P(D,O) is high, but it is not 1 because intelligent beings sometimes produce disorder, even intentionally. Science tells us that P(~D,O) is not insignificant; laws of nature tell us that order can result in the absence of intelligent intervention. So, says Salmon, "we are in a position to say, quite confidently," that P(O,D) is very low.

Cartwright objects that Salmon begs the question, specifically in his assessment of P(~D,O) and P(~D). As Salmon himself points out, one problem is that items that might plausibly be assigned to the classes D and ~D are quite different from the item with which we are primarily concerned: the universe as whole.⁵ Just as important, though, is the fact that the assignments of an object to D or ~D is not given in any sufficiently objective and theory-neutral manner. Proponents and critics of the theistic and atheistic arguments make the assignments to these categories, producing the risk that our samples are biased, not by common causes that confuse us regarding causation and mere correlation but by the theoretician's bias of seeing what is helpful for the theory and ignoring what is not. Salmon is not entitled, in the context of developing an atheistic argument from design, to assign to ~D the multitude of items that fail to have human creators,

for it is the atoms whose origins are at issue. Even if we are willing to take red shifts and cosmic background radiation as sufficient evidence for a "big bang" theory, we may still ask whether the original material from which the laws of mechanics shape the universe was, in all probability, randomly distributed or whether it is more likely that God put it just so, with an eye to getting out, eons later, just this universe with just this intricate arrangement of parts. The fact is, it is very difficult to assess the probabilities inductively, for there are so few cases on whose origins the theist and the anti-theist can agree.⁶

Martin's quick defence of Salmon against the charge of begging the question is that

to beg the question is to assume what one is supposed to prove. Salmon was out to show that it is probable that the universe was not designed by an intelligent being, and he assumed in his premises that atoms, molecules, and galaxies were not the result of intelligent design. This is not what he was out to prove unless one supposes that the universe is nothing more than atoms, molecules, and galaxies. But it is not clear that Salmon assumes this.⁷

⁴ Being a frequentist about probability, it is natural that Salmon assesses these probabilities in a straightforward fashion by counting instances. Cf. Salmon, "Religion and Science," 150–2. There is no need to contest this philosophy of probability here.

⁵ Cartwright, "Comments," 183 H; Salmon, "Religion and Sciences," pp. 152–8.

⁶ Cartwright, "Comments," 181.

⁷ Martin, "Atheistic Teleological Arguments," 45.

So Salmon's argument is supposed not to be defective because he doesn't use his conclusion as a premise; he argues for it. Given that Cartwright implicitly agrees with Martin on this point, as evidenced by the fact that she never accuses Salmon of asserting that the universe is not designed in his attempt to prove that it is not, she must have had something besides this kind of assumption in mind when she levelled the charge of begging the question. To the nature of that fallacy I now briefly turn.

3. *Begging the Question*

In recent memory it has been disputed whether there even is a fallacy of begging the question.⁸ I will assume that there is some fallacy that is roughly characterised by the assumption of what is to be proven. Before we can make any fine-grained determination of whether Salmon's and Martin's arguments beg the question, we must have before us a somewhat more precise account of the fallacy. Approaches to begging the question take two general forms: syntactic/formal and epistemic/pragmatic. In a currently-popular textbook, Trudy Govier provides a formal account of the fallacy. She says: "Begging the question is a fallacy that occurs when the premise or premises ... state the conclusion (usually in slightly different words) ..."⁹ A similar syntactic proposal is made by Kent Wilson.¹⁰ Taken as a necessary and sufficient condition, such a formal account permits us to determine whether the fallacy is committed by simply examining the form of the argument independent of the argumentative context in which it is used. If an argument is put in a standard form, we can determine whether it begs the question by noting whether the conclusion appears as a premise in that argument. If it does, the argument commits the fallacy; if not, not.

Strictly speaking, Govier's condition is only a sufficient condition for the occurrence of the fallacy. Evidently, however, Martin takes something like this portion of Govier's characterisation of the fallacy to be at least a necessary condition for the occurrence of the fallacy since he claims that Salmon's argument does not beg the question because it, indeed, fails to have its conclusion as a premise. Circularity is not, I think, a necessary condition for begging the question precisely because it leaves no space for other, more subtle, ways of begging the question. That begging the question is a more subtle fallacy is evidenced by the fact that the charge of begging the question is not typically established or refuted by a simple, mechanical examination of a philosophical argument. Whether an argument begs the question at hand is sometimes hard to discern and at times the relevant parties are unable, after considerable effort, to reach consensus about whether the fallacy is committed. Were this formal condition a necessary condition, there would be little room for outstanding issues of ques-

⁸ Richard Robinson, "Begging the Question," *Analysis*, 31: (1971), 113–17. For a reply, see Roy A. Sorensen, "Unbegging Questions," *Analysis*, 56: (1996) 51–55.

⁹ Trudy Govier, *A Practical Study of Argument*, 3rd edition (Belmont: Wadsworth, 1992), 85. It is important that the condition requires that the conclusion be stated, rather than merely appear in the premises, so that disjunctive syllogisms, simplifications, *modus ponens* and a host of other valid arguments are not rejected as question-begging and fallacious.

tion begging, save, perhaps, for some unresolved issues about the proper logical form of an assertion made in ordinary language. With all translational issues resolved, that the fallacy is not committed would be easily decided, though if there were other necessary conditions it would be more difficult to establish that the fallacy is committed in a particular instance. It is unlikely, though, that all outstanding issues about whether an argument begs the question involve unclarity about exactly which propositions are asserted by the premises and conclusions involved. The history of philosophy is unlikely to exonerate this analysis as faithful to the ways in which the charge has been levelled and resisted. So, this partial analysis is deficient even though it makes sense of Martin's handling of Cartwright's charge.¹¹

A reason to think that this crude collapse of question begging into circularity is not even a sufficient condition is that it rules out as fallacious all valid arguments in which the premise is logically equivalent to the conclusion. There are examples of substantial theses that are provably equivalent, the equivalence of which required proof. Consider the Axiom of Choice and Zorn's Lemma. Zermelo-Frénkel set theory proves that they are equivalent. To prove one and then to prove the other on its basis would be a substantial intellectual endeavor and hardly involve begging the question.

Perhaps, it might be held, that the key issue is not in the use of the conclusion as (part of) a premise, but in the "containment" of the conclusion in the premises, taken as a group. To be an advance on the formal approach broached above, the containment relation must be something less formal to accommodate the sometime subtlety of the fallacy. Govier continues her characterisation of begging the question by saying that the fallacy occurs when the premises "logically presuppose that the conclusion is true."¹² Robert Fogelin and Walter Sinnott-Armstrong suggest something similar: "In begging the question, a premise is used that *presupposes* or *depends* upon the point at issue."¹³ Though neither defines logical presupposition or dependence, we might take a clue from counterfactual dependence and say that the premises presuppose the conclusion just in case were the conclusion not true, the premises would not be either.¹⁴ Alterna-

¹⁰ Kent Wilson, "Circular Arguments," *Metaphilosophy*, 19 (1988), 38–51.

¹¹ For a defence of the claim that this syntactic criterion is not even a sufficient condition on fallacious circularity, cf. Roy A. Sorensen, "'P, Therefore, P' Without Circularity," *Journal of Philosophy*, 88 (1991), 245–66.

¹² Govier, *A Practical Study of Argument*, 85.

¹³ Robert J. Fogelin & Walter Sinnott-Armstrong, *Understanding Arguments: An Introduction to Informal Logic*, 4th ed. (New York: Harcourt Brace Jovanovich, 1991), 122

¹⁴ It is understandable if the subjunctive mood seems out of place when thinking about logical dependence. The indicative mood, however, is clearly inadequate, yielding in this case the conditional that if the conclusion is not true, then the premises are not all true, which is equivalent in classical systems to the disjunction that either the conclusion is true or one or more premises are false. This expresses neither dependence nor begging the question. The disjunction is satisfied by many arguments in which the conclusion is logically independent of the premises and were it to capture the fallacy of begging the question then all arguments for false conclusions as well as all arguments with factual errors in the premises beg the question.

tively, we might think that *logical* presupposition is a matter of logical relations, so that the premises presuppose the conclusion just in case the falsity of the conclusion entails the falsity of at least one premise. Or, perhaps, the idea of logical presupposition is to be understood in terms of the truth conditions for the premises and the conclusion. The premises presuppose the conclusion just in case their truth conditions contain the conditions of truth for the conclusion.

Both the relation of logical presupposition/dependence and the containment of truth conditions between premises and conclusion hold between any set of premises and each of the logical consequences of that set, rendering all valid arguments question begging according to this somewhat less formal account of begging the question, which is surely much too strong, so long as begging the question is a defect in an argument. It must be acknowledged that there have been those who held that all valid arguments beg the question precisely because in one of these senses, the premises contained the conclusion. According to this line of thought, such premises could never lead us to new knowledge because to understand the premises is to know their truth conditions and to know the truth conditions is to know that the truth conditions of the conclusion is contained in the truth conditions of the premises and, so, the conclusion is already asserted in the premises by anyone understanding the premises. The error is to confuse knowledge of a proposition with knowledge of all of its logical consequences or to confuse knowledge of that proposition's truth conditions with knowledge of all of the constituent conditions of those truth conditions. To know what conditions are conditions of truth for a given proposition is no more to know all of their constituent conditions than knowledge that a table is made of wood is to know the chemical composition of wood. Otherwise, only the chemically competent would really know that a table is made of wood. Furthermore, to make all valid arguments fallacious is to make all arguments fallacious. Valid arguments are fallacious by virtue of their validity since the impossibility of true premises and false conclusion is secured by the dependence or containment decried. Invalid arguments are fallacious because they permit a false conclusion even if the premises are true. Only quite thorough-going sceptics can afford such standards. An exhaustive discussion of other formal or logical approaches is unlikely to turn up a satisfactory account of begging the question because the analysis will either be formal and make the fallacy appear to be more easily discerned than it is, or else it will accommodate its sometimes elusive nature, but at the cost of making all valid arguments fallacious. I suggest that an informal, even pragmatic, approach to the fallacy is to be sought.

Sometimes the fallacy is said to be committed not by an argument *in vacuo*, but by someone propounding an argument. A *person* is said to commit the fallacy "when one assumes in the premise of an argument the very thing he or she is trying to prove."¹⁵ If assuming what one is trying to prove in a premise is just stating it in a premise, then this is just the first characterisation examined above.

¹⁵ Gerald Runkle, *Good Thinking: An Introduction to Logic*, 2nd ed. (New York: Holt, Rinehart and Winston), 55.

This account, though, at least begins to locate the issue in terms of what *one* does or does not do in an effort to prove something rather than what an argument does or does not do. It is not so much that an argument begs the question as it is that someone or other begs the question when using an argument. To revise this proposal slightly, one might take begging the question to be a fallacy committed whenever one assumes one's conclusion when providing an argument for that conclusion. Though this gets us somewhat closer to the nature of the fallacy and further away from the formal circularity account, it is still wide of the mark, for at least two reasons. First, taken strictly, this account classifies many attempts at confirmation as question begging. One might assume a proposition, infer its observable consequences, note that the consequences were observed and then conclude that the assumed proposition is true, probable, or more highly confirmed than it once was. Surely not all attempts at confirmation or corroboration beg the question. Second, while at times one may be guilty of some intellectual defect if one starts with a position and goes in search of a justification for it, it is folly to think that there is anything like the Russellian virtue of "following an argument where it leads", having no idea where things will end up.¹⁶ This is just not how to conduct a good intellectual life. When examining the consequences of a set of premises and deciding whether someone else's *modus ponens* should be our own *modus tollens*, we must have some idea about when the consequences of a set of premises take us beyond the pale, when they transgress what we are reasonably sure we know. We begin any project of inquiry with some apparent knowledge and we use inference sometimes to extend and sometimes to defend that knowledge. When trying to defend a position of which we are reasonably sure, we quite properly begin the argumentative process by assuming our conclusion and search for premises to support it or premises to undermine contrary considerations. This informal characterisation correctly locates the fallacy in the particulars of an arguer using a specific argument in a specific context, but it locates it in the history of the argumentative endeavour of the arguer alone. The scope of concern must be wider.

We get closer yet to the nature of the fallacy if we keep firmly in mind that an argument typically takes place in a context and that an argument has the task of convincing someone of the conclusion. An arguer will fail to persuade someone of the truth of the conclusion if the argument appeals to something not accepted by those one is trying to convince. One is always hostage to the opinions of those one is trying to convince in that any appeal to what is not already believed by one's interlocutors requires that one provide them good reasons to believe that proposition. Though it is inconveniently likely sometimes to appeal to what our interlocutors do not already have good reason to believe, given the limited range of the justified beliefs of each person, it hardly constitutes begging the question. Persuasion demands common ground between arguer and audience and when some necessary common ground is lacking it must be secured. Think-

¹⁶ For a discussion of this point, see Mark T. Nelson, "On the Lack of 'True Philosophic Spirit' in Aquinas: Commitment v. Tracking in Philosophic Method," *Philosophy*, 76 (2001), 283–96.

ing of begging the question as an appeal to what is not accepted by one's audience has the virtue of treating begging the question as context-dependent and not as something that an argument typically possesses on its own. *Someone* rather than some argument begs the question in some specific context when certain particulars are at issue. The problem with the current proposal is simply that it appeals too generally to the failure of both parties in a discussion to accept a premise used by someone in their argument. I may fail in my argumentative objective if I rely upon a premise not accepted by my audience. I do not, thereby, commit a fallacy. The failure may be rectified by making that premise acceptable to my audience, perhaps, by using a subsidiary argument in which the offending premise is a conclusion for which good reasons have been given, those reasons accepted and accepted as good reasons by my audience.

I submit that the fallacy of begging the question is committed by someone when they appeal to at least one premise that is not rationally accepted by the target audience *by virtue of not yet accepting the conclusion of the proposed argument*. This view is the considered view of Govier and Douglas Walton. As Govier puts it: "The conclusion cannot get any real support from the premise or premises because it needs to be accepted in order for those premises to be accepted."¹⁷ Walton also proposes something like this.

In a persuasion dialogue, the goal of each participant is to prove his conclusion from premises that are accepted as commitments by the other participant. However, if a premise has not already been explicitly accepted by a respondent, it must at least be a proposition that he could possibly accept, consistent with his own obligation to prove *his* conclusion. Otherwise, the argument using this premise as a basis could not be useful for the purpose of persuading the respondent to accept its conclusion. This type of inadequate or useless attempt at proof is a violation, error, or shortcoming in a persuasion dialogue, because such an argument stands no chance of fulfilling its proponent's obligation to prove his conclusion in the discussion.¹⁸

It is this pragmatic account of begging the question with which I will work. The account has the advantage of accommodating the fact that discerning the fallacy is not simply a matter of inspecting a standard form of an argument or of satisfactory paraphrases of premises and conclusion. It also does not entail that all valid arguments beg the question. This account will enable us to see quite clearly how Salmon's and Martin's atheistic teleological arguments beg the question.

4. *The Details Considered*

To appreciate the full force of Philo's discussion of Cleanthes' argument from design, it is useful to keep in mind that Cleanthes, as well as some contemporary proponents of similar arguments, invokes facts of orderliness to make probable

¹⁷ Govier, *A Practical Study of Argument*, 85; for other pragmatic accounts, cf. David Sanford, "Begging the Question," *Analysis*, 32 (1972), 197–9; Frank Jackson, *Conditionals* (New York: Blackwell, 1987), Ch. 7.

¹⁸ Douglas Walton, *Informal Logic: A Handbook for Critical Argumentation* (Cambridge: Cambridge University Press, 1989), 52. Italics added.

the existence of a disembodied, omniscient, omnipotent, wholly good being who intentionally caused the existence of the orderly universe *ex nihilo*. For our purposes, consider the doctrine that such a disembodied, omniscient, omnipotent, wholly good being exists to be theism. Take the doctrine that such a being does not exist to be atheism.¹⁹ In a nutshell, Salmon's and Martin's atheistic teleological arguments are given as follows:

If we pay close heed to experience, it is impossible to assign a high probability to the hypothesis that the world, if created as a divine artifact, was the product of a God bearing any resemblance to the theist's conception. ... Indeed, since disembodied intelligence has never operated in any fashion, to the best of our knowledge, we must conclude from experience that for such an intelligence $[P(D)] = 0$, and in that case $[P(D,O)]$ is simply undefined.²⁰

To determine whether Salmon's and Martin's arguments beg crucial questions it is important to understand the likely dialectical situations for these arguments. Salmon and Martin are trying to make probable the conclusion that the world did not have an intelligent creator. As recent religious epistemology has shown, there are quite distinct projects that one might have in mind for an argument. One might, for instance, attempt only to show that a particular person or sect of people are rational in their beliefs. An argument, and a discussion of the merits of that argument, might show that given other things that someone believes, that person is justified in holding some further belief. At most, these considerations show that the person is rational in only a very weak sense. It might be, for all the force of the argument proposed, that the person in question is quite unjustified in holding some of their relevant beliefs. Given these unjustified beliefs, it is rational for them to believe or do what they do, but also, given that the person is unjustified in holding these beliefs, there is a stronger sense in which they are not, ultimately, justified in their conclusion or action. If, on the other hand, the person is justified in holding the premises of the argument, then the verdict is, assuming the cogency of the argument in question, that the person is rational in holding to the argument's conclusion, at least after they are aware that the premises adequately support the conclusion.

It is doubtful that either Salmon or Martin had either of these projects in mind for their teleological arguments. Each makes claims for the straightforward, empirical nature of the crucial premises, with the implication that these things are so generally known, or at least knowable by those who exert the least effort, that the premises are part of the domain to which all readers are responsible. I suspect, then, that they take the force of their arguments to be to show that the conclusion of their arguments is the rational conclusion for all readers of their arguments. They spell out the premises, of which we might not have thought clearly, and they spell out the structure of the arguments, detailing their

¹⁹ Importantly, there is a wide gulf between atheism, so understood, and naturalism—the doctrine that there are "no spooks". For a somewhat fuller discussion of this, cf. my "Theoretical Virtues and Theological Construction", *International Journal of Philosophy of Religion*, 41 (1997), 71–89.

²⁰ Salmon, "Religion and Science," 153.

merits, to make clear to their readers that the reasonably uncontroversial premises and the arguments with the manifest virtues warrant the denial of design for the universe. Salmon and Martin don't take themselves to be preaching to the atheist choir, but to those who need to be converted to atheism. Their audience comprises theists and waverers—believers in intelligent design for the universe and those who do not yet know what to think about whether the world was created by an intelligent agent. To avoid begging the question Salmon and Martin must appeal only to premises that are already believed by their target audience or to those that can be made plausible to their audience without first deciding the issue that separates them from their audience: whether the world was designed. If they appeal to premises denied by the theist precisely because the theist already thinks that the world has a creator or if they appeal to premises that are not accepted by waverers precisely because they do not yet concede the conclusion of either the theist or the atheist, then their arguments thereby beg the question. A careful examination of their premises reveal that the question is begged in precisely this way.

After setting out Bayes' Theorem, Salmon notes Philo's list of "springs and principles" that give rise to various entities: biological generation, instinct, mechanical causation, and intelligent design. From what we know about cosmology and astrophysics, it seems as though the processes that give rise to galaxies, stars, and atoms are mechanical. Given that there are billions of galaxies each containing billions of stars, each of which contains billions of atoms, "[t]here is, consequently, a great deal of evidence pointing to the conclusion that the number of instances in which mechanical causation operates is almost incomprehensibly greater than all of the rest combined."²¹

Theists and waverers should not concede this point. Salmon lays out Philo's list of springs and principles and assumes that whenever biological generation, instinct, or mechanical causation operate, intelligent design is not operative. A convinced theist does not concede, this point precisely because when Salmon confronts the theist with his atheistic teleological argument, the theist already believes that the world had an intelligent designer and that all instances of biological, instinctual and mechanical generation are themselves the result of the way the world was designed. A theist might or might not think that God is actively involved at each stage of the various generative processes. No matter. The theist begins the dialogue with Salmon by believing that intelligent design "lies behind" everything in the world, including the causal processes that give rise to organisms, honeycombs and crystals. Salmon, as a premise of his argument, simply denies what the theist holds by virtue of being a theist. Hence, his argument begs the question against a theist.

A parallel point holds for the waverer. The waverer doesn't know what to think about the existence and activities of a designer for the entire world. So, they do not already concede that our knowledge of cosmology and astrophysics shows that no agency was involved in the various generative processes we ob-

serve. That is the point that the waverer, perhaps, hopes the theist and atheist will decide. If one doesn't know whether the world has a designer, one doesn't know whether generative processes are, ultimately, the result of divine design or not. Hence, the waverer doesn't know that no intelligence operated to "begin" the processes that, in the end, result in the formation of galaxies and stars, atoms and molecules. So, Salmon's premise begs the question against all but those who are already convinced of Salmon's atheistic conclusion.

The same fallacy recurs when Salmon discusses the particulars of the theist's designer hypothesis. God is supposed to be a single, omnipotent, omniscient, perfectly moral and wise being without a physical body. He claims that whenever we encounter enormous, complex entities they are more likely to be the result of the corporate effort of finite, fallible, imperfect, embodied creatures. "Indeed, since disembodied intelligence has never operated in any fashion, to the best of our knowledge, we must conclude from experience that for such an intelligence $[P(D)] = 0$, and in that case $[P(D,O)]$ is simply undefined."²² Salmon's basis for claiming that disembodied intelligence has never operated? Cosmology and its supporting disciplines: thermodynamics and quantum mechanics.

On what basis could one be justified in asserting that disembodied intelligence has never operated? The best way would be to observe fully all of the causal mechanisms involved in all of the processes we observe. If a disembodied agency were involved in none of the observed events, then one would be justified in making Salmon's claim. However, Salmon, quite correctly, notes that his basis is rather different. The basis is that we can give explanations for events, particularly the genesis of many objects like stars and atoms, without appealing to the activities of a disembodied intelligence. "The universe appears to be full of objects displaying high degrees of order whose existence can be adequately explained without recourse to intelligent design on the part of a creator."²³ The theist and waverer can easily concede this point, with some care regarding the nature of explanation. We do not observe the disembodied "hand" of God involved in the production of water molecules or the formation of new stars. A mere passing acquaintance with science reveals that the bodies of knowledge that pass as the various sciences involve laws that make no reference to God's activities. It is, however, a mistake to move from "we have never observed that a disembodied agent is involved in cases of process P " to "we have observed that no disembodied agency is ever involved in cases of process P ".

Suppose that certain brands of theism are correct in claiming that God not only created the universe, but also continues to sustain it in existence. Were God to cease this sustaining activity, the universe would cease to exist. According to this view, disembodied agency is involved in everything we observe. No exceptions. What would we observe were this kind of theism true? Exactly what we do observe. We would observe clouds of cosmic dust swirling, condensing into stars that burn until they reach the end of their lives. This process may be as regular as one might like, describable in terms of familiar regularities to which

²² Ibid., 153.

²³ Salmon, "Experimental Atheism," *Philosophical Studies*, 35 (1979), 103.

²¹ Ibid., 151.

we give the honorific title of “law”. That theism is consistent with all of our observations shows that observations and our scientific theories are unable, on their own, to provide any evidential wedge between theism and atheism. Any wedge must come from extra-scientific considerations, contrary to Salmon’s implication that it is scientific knowledge itself that does the most important work in justifying atheism.

One proposing an atheistic teleological argument need not adopt a Humean view of laws, but it is worth noting that Humeans are particularly poorly placed to defend Salmon’s version of that argument. According to a Humean, laws are nothing but the condensed statement of regularities in nature. Laws contain no tacit reference to causal powers or mechanisms, save those that themselves involve entities whose activities are describable in terms of Humean laws. There can be no room for the law to tacitly state how entities behave *on their own* or *according to their own devices*. That is content to which the Humean, *qua* Humean about laws, is not entitled, since it is the Humean who tells us that the proper way to understand laws is as mere descriptions, whether universal or stochastic, of how things behave. It is illicit to sneak more content into “how things behave” so that it means how they behave only on their own. The laws make no mention of the (in)activity of a designer, but that is not the same as the laws asserting that no designer is involved in the processes described by the laws.

The Humean about laws is, at all levels of explanation, like medical scientists who insist that the most we can expect from medicine is laws connecting what we, given our somewhat different understanding of medicine, would think of as relations between symptoms with no hope for uncovering the “deeper”, real causes of diseases. According to our imagined medical scientist, medical laws simply relate the regularities between fevers and aches and runny noses, with no references to viral or bacterial infections. Such a medical science is perfectly consistent with viral and bacterial infections being the underlying causes of the symptoms and no amount of weight should be placed on the success of “symptomatic” medical science to show that we should deny the existence of viral and bacterial infections. Likewise, no Humean about laws can put any argumentative weight on the success of the established sciences to show that no disembodied agency is involved in typical biological, instinctual, and mechanical generative mechanisms. The laws involved relate only the regular relations between observable properties. What is uncontroversial and not question-begging is the claim that the relevant sciences, taken as bodies of empirical knowledge, make no mention of God as a causal agent in the genesis of stars and galaxies, atoms and molecules. What they do not contain, however, is the claim that God is not involved in their genesis, at least as an ultimate cause, and it is upon this claim that Salmon relies in his teleological argument and he relies upon it as an empirical premise. He is wrong that it is empirical and Martin is wrong that it fails to beg the question.²⁴

²⁴ My claim here is only that the premise is not an empirical premise and that as it stands it begs the question against the theist and waverer. It is certainly open to Salmon to defend the

The very same points apply to Martin’s series of arguments for the conclusion that the theistic God does not exist. The initial premises of his arguments are:

In terms of our experience, all created entities of the kinds that we have so far examined are created by one or more beings with bodies.

In terms of our experience, all large and complex created entities of the kinds that we have so far examined are created by a group of beings working together.

In terms of our experience, most seeming errors or mistakes in the kinds of created entities we have so far examined are the result of the fallibility of one or more creators of entities.

In terms of our experience, all created entities of the kinds that we have so far examined were created by a being or beings with finite power.

In terms of our experience, all created entities of the kinds that we have so far examined are created from preexisting material.²⁵

In each case, Martin claims that each is established by empirical observation. In each case, *the most* that can be extracted from our observations is that we do not observe the disembodied, single, infallible, infinite being creating objects *ex nihilo*, i.e., we fail to observe that God creates things.²⁶ What we do not *observe* is that there is no such being operating in the world. If the theist is correct, everything we observe is created, ultimately, by a single, disembodied, infallible, infinite being and derives from what was created *ex nihilo*. In any case, the premises are not acceptable to the theist because theists begin the process of confronting Martin’s argument already disbelieving the key premises. This makes them poor choices for one trying to persuade one on their basis. Since theists begin the process disbelieving these premises precisely because they are theists, the premises beg the question, just as Salmon’s did.

In the context of the atheist, theist and waverer trying to resolve the most fundamental issues of natural theology by examining what we know about the production of order, it seems that the atheist is not placed quite so well as the theist. The theist can point out that of all the cases in which we know for sure whether the ordered thing was produced by an intelligent agent it was, indeed,

premise on different grounds, perhaps on the Humean grounds related to Hume’s discussion of miracles. It might be argued that it is the greater miracle to think that God is at work in or behind the order of the world and it is the lesser miracle that the order is the result of the “springs and principles” that are internal to the constituents of physical reality. This, however, shows that the premise in question begs the question. To show that the ordered entities produced by biological, instinctual, and mechanical means are not the product of intelligent design, it is argued that theism is the greater miracle than atheism. Salmon proposed the teleological argument to make atheism more probable than theism for his audience. The defence of the key premise of the teleological argument make the circle of the combined arguments obvious.

²⁵ Martin, “Atheistic Teleological Arguments,” 47–54.

²⁶ A theist who believes in God’s continuing creation of observable entities may hold that we see God creating all the time. That it is God creating, and not some other intelligent being or no intelligent being at all, is justified not by observation of the coming into being of these objects, but by wider theoretical considerations regarding the structure of reality. These wider considerations are parallel to those Salmon and Martin must rely upon to justify their major premises.

produced by an intelligent agent. At the very least, this is a non-question-begging premise from which to launch a teleological argument for the conclusion that all order derives from an orderer. Admittedly, supplementary arguments are required to get from this to theism proper, but rough arguments are not that difficult to come by. The commonly-held contention that the argument from design is powerless to yield classical theism is usually made too quickly and without substantial argument. For instance, if the basic teleological argument justifies the conclusion that all order ultimately involves an intelligent agent, it follows that, according to contemporary science which treats all physical reality as subject to laws (whether or not we have uncovered those laws accurately), then all physical reality must be the result of an intelligent designer that is not physical. This takes us to a disembodied creator. Infinite power is less straightforward, but may be approximated as follows. In all the cases in which we understand why something is limited in power, it is because of limitations on physical attributes—limits on the number of muscle cells, their ability to fire simultaneously, limited supply of fuel to produce work, and the like. Since the intelligent designer is not embodied, these causes for limitation are not available. From our experience, we know of no other causes of finitude, so the designer has no limitations on power. Something similar might be argued for lack of limits on intelligence, thus undercutting the thought that the complex world in which we live was designed by a team. A similar argument might be mounted regarding moral imperfections, seeing them as arising out of cognitive limitations, undercutting the thought that the apparent mistakes in the world are genuine mistakes. No part of my project here demands that any of these considerations, even the basic argument from design to the existence of an intelligent designer, are very powerful. Nevertheless, the theistic teleological argument can be formulated without begging the question and even though theism as understood here is a much richer doctrine than atheism, considerations deriving from order in the world can provide the basis for arguments that take one from the designer hypothesis to theism proper, a basis that deserves more exploration than it has yet received.

Even if I am wrong that more of classical theism can be recovered *via* considerations of order and design than is typically appreciated, in the multitude of cases to which Salmon and Martin appeal—the organisms, honeycombs, and crystals—the most that they are entitled to claim is that on the basis of observation alone we don't know whether an intelligent agent is involved, either proximately or ultimately.²⁷ Failing to observe the presence and activity of God, which may be granted by the theist, is not the same as observing the absence of the

presence and activity of God. It is only the former that is established by empirical observation. The latter, if it may be established at all, is established only by wider theoretical considerations about what there is in the world. A critic of theism might maintain that theism is unwarranted, given our persistent failure to observe God's hand to be present in the order we see around us, but that is far too weak for the needs of one putting forth an atheistic teleological argument. That argument is supposed to show that theism is improbable. Given the nature of the case and the nature of the disputants involved, simply asserting that we never observe order that is brought about by God begs the question. Ultimately, the only service Salmon's and Martin's arguments can serve is to show that those who already deny theism are warranted in concluding that the world itself does not depend for its existence on the activities of an intelligent agent. That is not nothing, but it is not for what the proponents of the atheistic teleological argument had hoped.

²⁷ I gloss over thorny issues regarding the theory-neutrality of observation and what might constitute the notion of "on the basis of observation alone." I am entitled to be somewhat cavalier here. Salmon and Martin claim that their reasons for main premises in their atheistic teleological arguments is empirical, is based on science, must depend on there being a useful distinction between what we learn on the basis of observation in a relatively theory-neutral fashion and what we do not. If no such distinction can be made workable for their purposes, so much the better for those resisting their arguments.