Last time, we were discussing various versions of the design argument for the existence of God. Our main topic for today is a quite different argument for the existence of God: the argument from miracles.

But, before turning to that argument, I'd like to spend some time finishing up our discussion of the last version of the design argument we discussed. Recall that that argument began by noting describing six numbers upon which the possibility of life depends. As Rees put it,

These six numbers constitute a 'recipe' for a universe. Moreover, the outcome is sensitive to their values: of them were to be 'untuned', there would be no stars and no life. Is this tuning just a brute fact, a coincidence?

To see how this might be turned into an argument for the existence of God, we introduced the following principle, which tells us when some piece of evidence counts for one theory, as opposed to another.

The principle of confirmation

Evidence E favors T1 over T2 if E would be more likely to be true if T1 is true than if T2 is true.

The intuitive idea behind this principle was that if a theory's truth would make it quite likely that we would find E to be true, and we do find E to be true, then this is a point in favor of that theory. Conversely, if a theory's truth would make it quite *unlikely* that we would find E to be true, and we do, then this is a point *against* that theory.

This principle suggests the following further claim: if E is extremely likely to be true if T1 is true, and extremely likely to be false if T2 is true, then if E is true, this is very strong evidence that T1 rather than T2 is true.

These six numbers constitute a 'recipe' for a universe. Moreover, the outcome is sensitive to their values: if any one of them were to be 'untuned', there would be no stars and no life. Is this tuning just a brute fact, a coincidence?

#### The principle of confirmation

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This principle suggests the following further claim: if E is *extremely* likely to be true if T1 is true, and *extremely* likely to be false if T2 is true, then if E is true, this is very strong evidence that T1 rather than T2 is true.

Now consider the following piece of evidence which we seem to possess:

E: The universe permits life to exist.

And now consider the following two theories about the universe:

- T1: The universe was designed by a creator who wanted life to exist.
- T2: The basic physical constants of the universe are due to chance, rather than intelligent design.

The probability of E given T1 -- the chance of E being true if T1 is true -- is extremely high. This is not really debatable.

One of the apparent consequences of the work of Rees and others is that the probability of E given T2 -- the chance of E being true if T2 is true -- is extremely low.

If this is correct, then it follows from what we have said so far that E -- the fact that the universe is life-supporting -- is extremely strong evidence that T1, rather than T2, is true.

This argument -- which is sometimes called the *fine-tuning argument* -- might be thought of as including the following claims:

Evidence E favors T1 over T2 if E would be more likely to be true if T1 is true than if T2 is true.

E: The universe permits life to exist.

T1: The universe was designed by a creator who wanted life to exist.

T2: The basic physical constants of the universe are due to chance, rather than intelligent design.

The probability of E given T1 is extremely high.

The probability of E given T2 is extremely low.

Above I mentioned that Rees does himself find this use of his ideas convincing; let's see why by expanding the quotation discussed above.

These six numbers constitute a 'recipe' for a universe. Moreover, the outcome is sensitive to their values: if any one of them were to be 'untuned', there would be no stars and no life. Is this tuning just a brute fact, a coincidence? Or is it the providence of a benign Creator? I take the view that it is neither. An infinity of other universes may well exist where the numbers are different. Most would be stillborn or sterile. We could only have emerged (and therefore we naturally now find ourselves) in a universe with the 'right' combination.

How should we understand Rees' objection here? Is this a good objection?

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The probability of E given T1 is extremely high.

The probability of E given T2 is extremely low.

It is worth considering another objection to this argument from the biologist Richard Dawkins, whose latest book, *The God Delusion*, is concerned in part with the argument from illusion.

What is the "anthropic" explanation of the fine-tuning of the universe? Is this a good explanation? Does this explanation deny any of the premises in the version of the fine-tuning argument sketched above?

The theist says that God, when setting up the universe, tuned the fundamental constants of the universe so that each one lay in its Goldilocks zone for the production of life. It is as though God had six knobs that he could twiddle, and he carefully tuned each knob to its Goldilocks value.

Biologists, with their raised consciousness of the power of natural selection to explain the rise of improbable things, are unlikely to be satisfied with any theory that evades the problem of improbability altogether. And the theistic response to the riddle of improbability is an evasion of stupendous proportions. It is more than a restatement of the problem, it is a grotesque amplification of it. Let's turn, then, to the anthropic alternative. The anthropic answer, in its most general form, is that we could only be discussing the question in the kind of universe that was capable of producing us. Our existence therefore determines that the fundamental constants of physics had to be in their respective Goldilocks zones.

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The probability of E given T1 is extremely high.

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Dawkins says that the anthropic answer is that "we could only be discussing the question in the kind of universe that was capable of producing us."

In other words: we can only wonder about the explanation of the universe being life-supporting if the universe is life-supporting.

This principle, at least, seems true. What we have to figure out is how it is relevant to the fine-tuning argument. After all, this claim is not denied by proponents of the fine-tuning argument.

Dawkins' final claim is that our existence *therefore determines* that the universe is life-supporting. What could this mean? Does he mean that our existence explains the fact that the universe is life-supporting? Or is he simply repeating the claim that if we exist, the universe is life-supporting?

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It is worth emphasizing that this is not a *proof* of the existence of God. It is an argument that the fine-tuning of the universe supports the theory that God exists as against the theory that God does not exist.

Second, the argument does not, strictly speaking, show that the existence of God is very probable. What it shows, if successful, is that whatever probability you assigned to the existence of God before encountering these facts about the fine-tuning of the universe, you should raise your probability assignment significantly.

An analogy here might help. Suppose you observe that I begin class every day at 2:01. Now consider the theory that an alien controls my brain and that this alien desires very strongly that this particular class should begin every day at 2:01. How likely is it that class would begin every day at 2:01 if this theory is true? Does this mean that you should think that this theory is likely to be true?

What this kind of case shows is that an observation might count in favor of a certain theory, but that, because the theory was antecedently so improbable, the theory remains quite improbable, even given the observation. Some atheists might take this attitude to the fine-tuning argument: that it significantly raises the probability that God exists, but that theism is still quite improbable, all things considered. They might think this because they think that there are good arguments against the existence of God; we'll begin discussion of the most important of these next time.

But despite these limitations, if the objections we discussed to this argument can be overcome, it seems plausible that the fine-tuning argument might accomplish one aim that one might have for arguments for the existence of God: it might make it rational for an agnostic to believe that God exists.

But despite these limitations, if the objections we discussed to this argument can be overcome, it seems plausible that the fine-tuning argument might accomplish one aim that one might have for arguments for the existence of God: it might make it rational for an agnostic to believe that God exists.

That being said, I think that it is fair to say that most religious believers throughout history have not come to believe in God on the basis of the arguments we have discussed so far. The argument we'll be discussing today has probably been discussed less by philosophers than the ones we have already covered, but has probably been more influential in actually convincing people that God exists.

This is the argument from miracles. There is a long tradition in Christianity of thinking that various miracles can provide the basis for belief in the existence of God.

For example, in Chapter 20 of the Gospel of John, after the story of Thomas, John writes:

"Now Jesus did many other signs in the presence of (his) disciples that are not written in this book. But these are written that you may come to believe that Jesus is the Messiah, the Son of God, and that through this belief you may have life in his name."

The idea seems clearly to be that we can come to believe on the basis of John's telling us about the miracles performed by Christ. This idea has been widely accepted; St. Augustine, for example, is quoted as saying that he would not be a Christian but for the miracles.

This raises the question: can the sorts of testimony that we get from St. John give us good reason for believing in God? In our reading for today, Hume argues that this is not possible; we cannot be justified in believing in God on the basis of testimony of the sort given above.

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But before doing this, we should try to get a handle on why someone might think that miracles *do* provide evidence for the existence of God. How might one argue for the existence of God on the basis of miracles? The following argument suggests itself:

- 1. There have been miracles.
- 2. If there have been miracles, God exists.
- C. God exists.

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Obviously, the argument is valid, so the only question is whether the premises are true. Hume's argument focuses on the question of whether we have any good reason to believe premise (1). But let's focus first on premise (2). What, exactly, is a miracle?

According to Hume, a "miracle is a violation of the laws of nature."

This might seem puzzling. After all, aren't laws of nature supposed to be universal exceptionless claims? (If we find an exception to a supposed law of nature, it seems that the right response is to say that what we thought was a law of nature in fact is not.) And if this is what laws of nature are, isn't the idea of a miracle just a contradiction? This seems to be a very quick and easy argument against the possibility of miracles.

But it is not a very impressive argument. Believers in miracles take there to be moments in history at which God suspends the usual natural order. But because this suspension of the natural order has a supernatural cause, it is natural to think that it is not simply a counterexample to the relevant laws of nature, but rather an exception which, because of the kind of exception it is, does not falsify the law in question.

According to Aquinas, "those things are properly called miracles which are done by divine agency beyond the order commonly observed in nature." This is a good a definition of "miracle" as any, and we will take this to define the term for our purposes.

If this is the definition of "miracle", then premise (2) seems trivial. The remaining question is: is premise (1) true?

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If this is the definition of "miracle", then premise (2) seems trivial. The remaining questions are: Is premise (1) true? and, Do we have any good reason for believing that premise (1) is true?

Let's assume that none of us have ever actually witnessed a miracle. Then it seems that our only evidence for (1) is the testimony of people that *do* claim to have actually witnessed a miracle. So, it seems that to see whether we have good reason for believing (1), we have to figure out when we are justified in believing something on the basis of testimony.

Here is what Hume has to say about this:

"we may observe, that there is no species of reasoning more common, more useful, and even necessary to human life, than that which is derived from the testimony of men, and the reports of eye-witnesses and spectators. ... I shall not dispute about a word. It will be sufficient to observe, that our assurance in any argument of this kind is derived from no other principle than our observation of the veracity of human testimony, and of the usual conformity of facts to the reports of witnesses." (74)

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Hume's basic idea seems to be this: we believe things on the basis of testimony because, in the past, we have found that testimony is normally correct: normally the facts conform to the testimony we receive.

Is Hume right about this?

Does this mean that we should always believe whatever we are told? This can't be right, since we are sometimes told contradictory things. And, in any case, Hume does not think that we should always accept testimony.

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Testimony is just one piece of evidence among others. And in cases in which testimony contradicts some of our evidence, we have to determine which piece of evidence is stronger:

"A wise man, therefore, proportions his belief to the evidence. ... He weighs the opposite experiments: He considers which side is supported by the greater number of experiments: To that side he inclines, with doubt and hesitation; and when at last he fixes his judgement, the evidence exceeds not what we properly call *probability*." (73-4)

This suggests the following rule:

We should only believe testimony about the occurrence of some event E if the probability of the testimony being true is higher than the probability of E's not occurring.

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We should only believe testimony about the occurrence of some event E if the probability of the testimony being true is higher than the probability of E's not occurring.

This suggests the following principle about miracles:

"That no testimony is sufficient to establish a miracle, unless the testimony be of such a kind, that its falsehood would be more miraculous, than the fact, which it endeavors to establish ..." (77)

Suppose we have testimony that some miraculous event M happened. Hume is say that we should not believe that M happened on the basis of the testimony unless the following is the case:

The probability of the testimony being false < the probability of M occurring.

This is one plausible reading of what it would mean for the falsehood of the testimony to be "more miraculous" than the occurrence of the relevant event.

We now want to know why Hume thinks that a principle of this sort shows that we are never justified in believing testimony about miracles.

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## Hume's principle about testimony.

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To do this, we need to figure out how to determine the relevant probabilities: of the testimony being false, and of M not occurring. Recall the quote about evidence discussed earlier:

"A wise man, therefore, proportions his belief to the evidence. ... He weighs the opposite experiments: He considers which side is supported by the greater number of experiments: To that side he inclines, with doubt and hesitation; and when at last he fixes his judgement, the evidence exceeds not what we properly call *probability*." (73-4)

Hume's idea seems to be this. When we are trying to figure out the probability of some event happening in certain circumstances, we ask: in the past, how frequently as that event been observed to occur in those circumstances? Our answer to this question will give us the probability of the relevant event.

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This, Hume thinks, is enough to show us that we ought never to believe testimony regarding miraculous events:

"A miracle is a violation of the laws of nature; and as a firm and unalterable experience has established these laws, the proof against a miracle, from the very nature of the fact, is as entire as any argument from experience can possibly be imagined ... There must be a uniform experience against every miraculous event, otherwise the event would not merit that appellation." (76-7)

Hume's point is that miracles are always departures from the ordinary laws of nature. But the ordinary laws of nature are regularities which have been observed to hold 100% of the time. Of course, we have not observed testimony to be correct 100% of the time. Hence, the probability of testimony regarding a miracle being false will *always* be greater than the probability of the miraculous event; and then it follows from Hume's principle about testimony that we should *never* accept the testimony.

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#### Hence Hume's conclusion:

"... therefore we may establish it as a maxim, that no human testimony can have such force as to prove a miracle, and make it a just foundation for any system of religion."

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On this reading, Hume's argument rests on some principle of the following sort:

If some event has never been observed to occur before, then the probability of it occurring is 0%.

Let's call this the **zero probability principle**.

This, plus Hume's principle about testimony, is clearly enough to show that one ought never to believe in miracles on the basis of testimony.

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The zero probability principle:

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This, plus Hume's principle about testimony, is clearly enough to show that one ought never to believe in miracles on the basis of testimony.

Interestingly, it also seems to be enough to establish a stronger claim: one is never justified in believing in the existence of miracles, even if one is (or takes oneself to be) an **eyewitness**.

After all, perceptual experiences of the world, like testimony, don't conform to the facts 100% of the time. So, the probability of a miraculous event M occurring will always, given the above principle about probabilities, be less than the probability of one's perceptual experience being illusory. Hence, it seems, one would never be justified in believing in the existence of a miracle, even on the basis of direct perceptual experience.

This might at first seem like a good thing for Hume's argument: it shows not just that one an never believe in miracles on the basis of testimony, but also that one can never believe in them for any reason at all! But in fact this points to a problem for the zero probability principle.

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The zero probability principle:

If some event has never been observed to occur before, then the probability of it occurring is 0%.

#### Consider the following sort of example:

You are a citizen of Pompeii in AD 79, and there is no written record of the tops of mountains erupting and spewing forth lava. Accordingly, following the zero probability principle, you regard the chances of such a thing happening as 0%. On the other hand, you know that your visual experiences have been mistaken in the past, so you regard the chances of an arbitrary visual experience being illusory as about 1%. Then you have a very surprising visual experience: black clouds and ash shooting out of nearby Mt. Vesuvius. What is it rational for you to believe?

This sort of case seems to show that the zero probability principle is false. Other such examples involve falsification of well-confirmed scientific theories.

So, if Hume's argument depends on the zero probability principle, it is a failure. Can we come up with another principle, which would avoid these sort of counterexamples while still delivering the result that Hume wants?

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So, if Hume's argument depends on the zero probability principle, it is a failure. Can we come up with another principle, which would avoid these sort of counterexamples while still delivering the result that Hume wants?

It seems that we can. All Hume's argument needs, it would seem is the following trio of assumptions:

- (a) If some event has never been observed to occur before, then the probability of it occurring is at most X%.
- (b) The probability of a piece of testimony being false is always at least Y%.
- (c) Y>X

Suppose, for example, that the probability of an event of some type which has never before been observed is at most 1%, and that there is always at least a 10% chance of some testimony being false. If we assume Hume's principle about testimony, would this be enough to deliver the conclusion that we are never justified in believing in miracles on the basis of testimony?

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Suppose, for example, that the probability of an event of some type which has never before been observed is at most 1%, and that there is always at least a 10% chance of some testimony being false. If we assume Hume's principle about testimony, would this be enough to deliver the conclusion that we are never justified in believing in miracles on the basis of testimony?

Only if we assume that we only ever have testimony from a single witness. Suppose that we have three witnesses, each of whom are 90% reliable, and each independently reports that M has occurred. Then the probability of each witness being wrong is 10%, but the probability of all three being wrong is only 0.1%. This, by the above measure, would be enough to make it rational to believe that M happened.

So it seems that the possibility of multiple witnesses shows that (a)-(c) are not enough to make Hume's argument against justified belief in miracles on the basis of testimony work. (This is true no matter what values we give to "X" and "Y".)

(One cautionary note: it is important to distinguish between having testimony from multiple witnesses and having testimony from a single witness who claims there to have been multiple witnesses.)

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## Hume's principle about testimony.

We should not believe that M happened on the basis of the testimony unless the following is the case:

The probability of the testimony being false < the probability of M occurring.

So far, we have been assuming that Hume's principle about testimony is true, and asking what assumption could be added to this principle to make Hume's argument work. But there is reason to doubt whether the principle about testimony is itself true.

This principle sound sort of obvious; but it isn't, as some examples show. First, what do you think that the probability of the truth of testimony from the writers of the South Bend Tribune would be?

Let's suppose that you think that it is quite a reliable paper, and that its testimony is true 99.9% of the time, so that the probability of its testimony being false is 0.1%.

Now suppose that you read the following in the South Bend Tribune:

"The winning numbers for Powerball this weekend were 1-14-26-33-41-37-4."

What are the odds of those being the winning numbers for Powerball? Well, the same as the odds of any given combination being correct, which is 1 in 195,249,054. So the probability of the reported event occurring is 0.000005121663739%.

So, if Hume's principle about testimony is correct, one is never justified in believing the lottery results reported in the paper, or on the local news, etc. But this seems wrong: one can gain justified beliefs about the lottery from your local paper, even if it is the South Bend Tribune.

One might wonder how, if at all, Hume's principle could be modified to avoid these counterexamples.

- 1. There have been miracles.
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This is a long way from showing that the argument from miracles is a success: for that purpose, we would have to consider specific examples of miracles, and the sorts of evidence given for their occurrence.

We would also, as the example of Powerball shows, have to get a bit clearer about when testimony is and is not sufficient for justified belief.

We would also have to answer the question of when we are justified in believing that some event which is contrary to the usual natural order has supernatural causes.

What our discussion today shows is something much more limited: that one prominent attempt to show that the argument from miracles *can't* succeed is, as it stands, unconvincing.