

Was the Universe Created, or does it exist purely by chance?

Notes from a lecture delivered in London, December 2007

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The basic questions: **Why is there anything at all?**

Science gives explanations of things **within** the universe, but can the universe **as a whole** have an explanation? And does the existence of the world suggest the existence of a creator God? – the Cosmological Argument.

Given that the world is here, there are reasons to believe that it can develop itself naturally. But **why** is it here? Is everything dependent on everything else? Is there nothing beyond this circle of interdependence?

This is absolutely fundamental. If you believe that there is some sort of reason, cause, first principle – then you count yourself a theist. If not, then the world is self-contained, and needs no external explanation – it may indeed be here by chance, or as one of many millions of similar worlds.

In looking at the argument, keep in mind that the relevant question to ask may not be 'Does this prove that God exists?' but '**What sort of "God" does this argument present?** Does this argument point to what religious experience or organised religion mean by the word "God"?'

Ockham's razor: 'Entities are not to be multiplied beyond necessity.'
Keep this principle in mind: **Do we need 'God' as an explanation, or is there a simpler one?** If God is an explanation (if one is needed) for why the world is, we may not be justified in giving God qualities other than those required for the purpose of creation.

The original ideas that lie behind this argument come from **Aristotle**. But the first to set it out in the form we recognise now were two Muslim philosophers al-Kindi (9th century) and al-Ghazali (1058-1111), in what is known as the **Kalam argument**.

It may be set out like this:

- Everything that begins to exist has a cause for its existence.
- The universe began to exist.
- Therefore the universe must have a cause.

Basic question: If you have a sequence of events, stretching back in time - **can that sequence be infinite?**

Although a theoretical infinity (as used in maths) may seem straightforward, actual infinities cause all sorts of problems. (e.g. Infinity plus one, equals infinity; infinities cannot grow.) Since the time of Aristotle, philosophers have argued that an **actual** infinity cannot exist, and if it did, how could we know? It is not the same as being without discernable limit.

You can therefore present the argument like this:

- an actual infinite number cannot exist
- therefore there must be a finite sequence of causes for the world
- therefore the world began to exist at some point in the past

BUT A circle provides an infinite journey. The surface of a sphere provides for infinite movement in all directions. (Hamster in a Perspex ball!)

Thomas Aquinas (1225 - 74) - probably the most important philosopher of the medieval period - sought to reconcile the Christian faith with the philosophy of Aristotle, which had been 'rediscovered' and was taught in the secular universities of Europe.

Aquinas presented **Five Ways** in which he believed the existence of God could be shown. They are:

1. The argument from an unmoved mover.
2. The argument from an uncaused cause.
3. The argument from possibility and necessity.
4. The argument from degrees of quality.
5. The argument from design.

The first three of these are Cosmological.

The first may be presented like this:

- Everything that moves is moved by something.
- That mover is in turn moved by something else again.
- **But** this chain of movers cannot be infinite, or movement would not have started in the first place.
- **Therefore** there must be an unmoved mover, causing movement in everything, without itself actually being moved.
- This unmoved mover is what people understand by 'God'.

Aquinas was not thinking of physical movement, but change – everything changes because of something else (fire causing something potentially hot to become actually hot). But whatever does the changing must itself be changed by something else. Now, this must stop somewhere, otherwise there will be no first change, and, as a result, no subsequent changes. **This first cause of change, itself not changed by anything, is what he understands by God.**

The second argument has the same structure:

- Everything has a cause.
- Every cause itself has a cause.

- **But**, you cannot have an infinite number of causes.
- **Therefore** there must be an uncaused cause, which causes everything to happen without itself being caused by anything else.
- Such an uncaused cause is what people understand by 'God'.

Don't think of a sequence of causes going back into the past (as the Kalam argument) but a sequence moving outwards in the present – like ripples on water.

The third argument follows from the first two:

- Individual things come into existence and later cease to exist.
- Therefore at one time none of them was in existence.
- But something comes into existence only as a result of something else that already exists.
- Therefore there must be a being whose existence is necessary, and that all would understand to be 'God'.

Everything is only fully understood in terms of the whole. But how is the whole to be understood? THAT is the cosmological question.

Some challenges to the argument:

David Hume (1711-1776). All knowledge is based on observation; we generally see cause and effect following one another

But, in the case of the world as a whole, we have a unique 'effect', and cannot observe its cause. **We cannot get 'outside' the world to see both the world and its cause, and thus establish the relationship between them.**

Perhaps attempting to think about an uncaused cause beyond the world is something that our minds are not designed to do. The philosopher Kant (1724-1804) argued that the whole notion of cause and effect was one of the ways (along with the concepts of space and time) in which our minds interpret the world - we cannot help but impose causality upon our experience. **If Kant is right, then an uncaused cause is a mental impossibility.**

Bertrand Russell – the world is just there, a brute fact.

Wittgenstein – the world is all that is the case. Whereof we cannot speak, thereof we must remain silent.

In other words, if we can only know what we can experience, how can we talk about what causes that experience?

The Cosmological argument may not be sound, but it points to the sort of reality that a religious person is thinking about when he or she uses the word 'God' - not a particular thing within (or, imaginatively, outside) the universe, but a reality that underlies and sustains everything. It guards against the idea of a limited 'God'.

But could all this happen by chance?

The Anthropic Principle

The modern scientific view of the universe throws up many fascinating facts that point to the origin of things – and it is not surprising if some of these are taken up by believers and used as arguments for the existence of God.

The Anthropic principle is one of these – so outline it briefly.

The structure of the universe is determined by some fundamental constants – of which the most significant for our purposes is the Gravitational Constant. IF gravity were a fraction less powerful than it is, the universe would have expanded outwards in a way that would have prevented the formation of galaxies. If a little more, it would have collapsed back in upon itself without having got to this point.

Leads to the ‘weak’ form of the argument (or the ‘sensible’ form!)

‘The universe you observe = the one that permits you to exist.’

(from Barrow and Tipler ‘The Anthropic Cosmological Principle’ 1986)

In other words, the properties of the universe are self-selected by the fact that we are here to observe it. **If the universe were different, we wouldn’t be here**; but we are here, so it wasn’t different. Properties are ‘self-selecting’ based on that fact. It must have been like that, or we wouldn’t have been here to observe it.

‘Strong’ version – the universe must have been such as to make it inevitable that observers would have been created within it at some stage. (Brandon Carter, 1974) – in other words, the universe could not have failed to be life creating.

(Bit like the ‘design’ argument.)

But **‘must’** the universe have been like that?

Example – ‘If you were here on time you must have caught the 8 o’clock train.’

(If you didn’t catch it, you wouldn’t be here. But you didn’t HAVE to catch it.)

Another one – ‘In order for you to exist, your parents must have had sex at least once. But that does not mean that they were forced to have sex.

Past events can be necessary in order to explain the present – that’s what the Anthropic Principle is about – looking at the whole range of options in the past, some are self-selected by the fact that the world is as it is today, with us in it.

BUT, if the universe were different, it wouldn’t be our universe. How do we know that this is not just one of billions of universes. We happen to be in it, because we happen to be a product of just exactly this kind of universe. Just as you happen to be you because of a unique genetic code from your parents. But you didn’t HAVE to have that unique code.

The Anthropic Principle does not prove that there is any external or prior cause to the universe. **The most it can show is that the universe is as it is. And because it is as it is, we are as we are.**

So did the universe come about purely by chance? That’s a crazy question – everything happens by chance, and nothing happens by chance. Given the billions of people in this world, each with his or her own genetic code, and given the infinite number of circumstances that led to your parents, grandparents etc meeting, it is utterly unlikely that you are born. You are completely the product of chance. On the other hand, if I knew all about everyone in your past, you are absolutely inevitable.

It’s much the same with the universe, except that we can’t get outside it to take a look at the other possibilities.

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