



MUST THERE BE A FIRST CAUSE?

In one episode of *The Simpsons* we discover Homer trying to fix his toaster but in so doing inadvertently creating a time machine. Each time he pushes the toaster's lever, he is transported to the age of the dinosaurs until the toast pops up, whereupon he returns to the present. The first time this happens he realises that if he kills anything while in the past it could lead to unpredictable changes in the future. In a moment of absent-mindedness, however, he squashes a mosquito. And as you might imagine there are indeed significant changes when he returns to the present. The cartoonists, in telling this story, are picking up on the well-known 'butterfly effect', the idea that a butterfly flapping its wings on one side of the world can set off a whole string of consequences that ends up in a tornado causing havoc on the other side of the world. This idea of a butterfly wing causing such ultimate destruction might seem a bit fanciful but we usually have no problem at all with notions that one thing leads to another, that there are causes and effects. It is the notion of a string of causes that stands behind a family of arguments known collectively as the cosmological argument. Put at its most basic it runs as follows: a string of causes cannot go backwards for ever; there must have been a first cause and that first cause is God.

This argument has a long and distinguished pedigree. We first read of it in the writing of Plato and then again, in a more rigorous format, in the work of Aristotle. It finds various expressions in the Middle Ages, especially with Aquinas, and then again in the eighteenth century. Today, it still enjoys a fruitful existence as philosophers continue to debate the finer points. On one side are those who ask the fundamental question: why is there something rather than nothing? Surely it could have been the case that there was

just nothing, so how come there is a universe? On the other side are those who think this question a touch odd, those who think the universe is just a brute fact and not in need of any kind of explanation.

At the root of these discussions lie a couple of well-worn philosophical terms and it is hard to get very far in understanding the issues without first getting to grips with these two concepts. There are, it is said, only two kinds of truth, a necessary truth or a contingent truth. A necessary truth is a truth that is true by definition. One plus one equals two; a bachelor is an unmarried man; the angles of a triangle add up to 180° – these are all necessary truths. Contingent truths, by contrast, could well have been otherwise. That girl has blonde hair; this is a fact, but we just as easily imagine her having black hair. Her having blonde hair is a contingent truth. Similarly it is true that the capital city of India is New Delhi but it could have been otherwise, and indeed it had been so up until 1911 when Calcutta had been the capital. To sum up: necessary truths cannot be otherwise, contingent truths can.

With this distinction under our belt it is now time to take a look at three members of the cosmological argument family. Two of these argue that there cannot be an infinite series of causes, while the third travels down a rather different path. The first of our lines comes from the great medieval writer, Thomas Aquinas.

3.1 HOW FAR BACKWARDS CAN YOU GO?

Towards the beginning of his great *Summa Theologica* Thomas Aquinas (1224—1274) asks whether God exists. In a series of much quoted paragraphs he goes on to answer that question in what have become known as the ‘five ways’, essentially five short arguments for the existence of God. The last of these arguments is more or less an

account of the teleological argument, about which we shall have more to say in the next chapter, while the fourth deals with levels of perfection. The first three, however, are all closely related, being expressions of the cosmological argument. Aquinas understands the first of his ways as the most obvious but history shows us that it is, in fact, the third way that has most successfully lasted the test of time.¹ This third way, along with its two companion approaches, owes a great deal to Aristotle, referred to by Aquinas as 'the Philosopher'. Nonetheless, while it is certainly true that Aquinas leaned heavily on Aristotle in coming up with the arguments, it is still the case that this form of the cosmological argument has become most closely associated with the medieval theologian.

In presenting his third way he makes use of the very distinction we discussed above. He writes about what is possible and what is necessary, but by possible he means what we mean by contingent. Given this, the argument itself is stated briefly but densely. If we were to write it out in steps, it might look something like this:

1. Things in nature are contingent.
2. It is impossible that contingent things always existed.
3. It is therefore possible that at some point there could have been nothing in existence.
4. But, if at one time there was nothing in existence it would have been impossible for anything to have begun to exist.
5. If it is impossible for anything to have begun to exist then nothing can now exist. That is absurd.
6. Therefore, not all things are contingent; there must be some necessary thing.
7. A necessary thing is either caused by another or itself.
8. A series of necessary things caused to exist by another cannot be infinite.
9. Therefore, there must be a necessary thing which is the cause of itself and all other necessary things.
10. This all men speak of as God.²

Clearly this is a rather long series of steps but if we look closely we will see that only some of them are particularly troublesome. Aquinas starts off by suggesting that when we look around us we are bound to conclude that everything we see is contingent. In this statement the term 'contingent' has been developed just a little. When we first spoke of contingent and necessary, we did so in respect of truths. We can however also apply these terms to things; we can have contingent things and necessary. So when Aquinas claims that every thing in the world is contingent he is making the claim that all things could have been otherwise and that all things have a beginning. But how do we know that that is the case? I suspect there is no answer to this question. We cannot prove that every being is indeed contingent; all we can say is that everything in nature thus far encountered has been or is contingent. With different tectonic plate movement the continents could have been otherwise; with different evolutionary paths the plants and animals could have been otherwise; with different population groupings cities could have been otherwise. Not only could these things have been otherwise but they also had a beginning. From geology we know that the continents had a beginning, from biology that animals had a beginning, and from history that cities have beginnings. The things we experience are contingent. The weight of evidence, therefore, seems to suggest that the world is indeed a series of contingent beings and it would seem reasonable to hold to this view until we are introduced to something in nature that is, in fact, a necessary being. So while we cannot dismiss objections to his first step, we can at least feel there are reasonable grounds for putting them aside.

The second step is a little trickier if only because it is less obvious. When Aquinas claims that it is impossible that contingent things always existed he is making use of his understanding that all contingent things have a beginning, for if that is the case then contingent things cannot have existed for ever. Things with beginnings did not exist

before their beginning. So it is that he suggests that it cannot be possible that contingent things have always existed. Now, if you grant that contingent things have beginnings then you can imagine a situation where nothing might exist, a time prior to the existence of any one thing. That is the imaginative step he asks you to make with step three. But if it is possible that there might have been a time when nothing existed how could anything come to be? In step four Aquinas is further developing our notion of a contingent being. Not only is a contingent being one that could have been otherwise and has a beginning, it is also brought into being by something that already exists. Continents are formed by previously existing tectonic plates, animals and plants evolve from previously existing animals and plants, cities are built and dwelt in by previously existing human beings. So if there was a time when there was nothing then it would indeed be impossible that any thing began to exist and if that is the case, as he tells us in step five, then nothing can now exist. Such a conclusion is clearly wrong – we know that there are plenty of things around and about us. But where has the argument gone wrong? Actually, it is not that the argument has gone wrong it is that we have forgotten about the other half of our old philosophical distinction. We have been moving along on the understanding that every thing in nature is contingent (as in step one) but overlooking the possibility that beyond nature there is a thing that is necessary. And that is where Aquinas arrives in step six: it cannot be the case that all things are contingent (only those things in nature); there simply must be some necessary thing. Now what does he mean by a necessary thing? A contingent thing can be otherwise, has a beginning and is brought into existence by something else. A necessary thing, he tells us in step seven, might well be brought into existence by something else but, unlike a contingent thing it might also be the cause of itself. At this point Aquinas heads out for the kill. In steps eight, nine and ten, he explains that a series of necessary things cannot be an infinite

series because at some point you will arrive at the necessary thing which is both the cause of itself and all the other necessary things. That necessary thing which is the cause of itself is, he confidently tells us, what we call God.

I think he has produced a rather clever argument and certainly far more subtle than the very basic one I gave in the opening section, but it is not without its difficulties. Let us take a brief look at just three problems. First, there are those who say that even if you grant the cosmological argument as framed by Aquinas all it shows is that there is a first cause; nothing further can be said about the nature of that first cause. They accept that there is a first cause; they are even willing to say that such a first cause is God, but they insist that you can say nothing else about God without further argument. You cannot reach the kind of description we thought about in Chapter 1; all you can say is that God is a first cause. I think this observation correct. It is also true, however, that Aquinas' five ways, and in particular his third way, are nearly always read out of context. When we look at the structure of the first part of his *Summa Theologica* we see that the five ways form part of a longer section. They are described in the first of ten sections which when taken together give a full description of character of God. Aquinas would have conceded that his cosmological argument argued only for the existence of God; further argument would be necessary for describing God's characteristics. And what are those characteristics? Aquinas would say that they are simplicity, perfection, infinity, immutability and unity. We may wish to argue about this list but the main point is this: Aquinas knew that his cosmological argument could not be required to do unreasonable work; it had the definite and restricted task of proving the existence of God.

Second, like Bertrand Russell (1872—1970), there are those who deny that the universe needs an explanation; it is just a brute fact. Russell thinks that Aquinas is mistaken in his notion of cause. As far as Russell is concerned our understanding of causes is derived

from our everyday experience, it makes no sense to extrapolate that notion outwards and to discuss a cause of the universe because to use the word ‘cause’ in this sense is to go well beyond our experience. And if we cannot sensibly speak of a cause of the universe we just have to accept that it is and there is nothing more to it.

Third, there are others who follow Immanuel Kant (1724—1804) in objecting to the existence of a necessary being. As with all of Kant’s arguments this can be a bit complicated but what it boils down to is this: if the cosmological argument requires the existence of a necessary being then it can be successful if and only if the ontological argument holds good. As we shall see in Chapter 5 the ontological argument argues exactly for a necessary being and as such, Kant believes it is the necessary underpin for the kind of cosmological argument produced by Aquinas. In trying to overcome or sidestep some of these difficulties proponents of the cosmological argument have gone on to develop other strategies.

3.2 HAVE YOU A ROOM FOR THE NIGHT?

Our second form of the cosmological argument is also concerned with the notion of infinite regress but while Aquinas was concerned with a regress that is ordered this argument concentrates on a regress in time. This argument is principally advanced by Arabic philosophers such as al-Kindi (fl. 870) and al-Ghazali (1058—1111) and more recently defended by William Lane Craig (b. 1945), and is generally known as the *kalam* argument. If we take Craig’s version of the argument it runs something like this:

1. Everything that begins to exist has a cause of its existence.
2. The universe began to exist.
3. Therefore, the universe has a cause of its existence.³

The first step grounds the argument in the notion that everything begins to exist. On this point Craig would have no argument from Aquinas and our own everyday experience would seem to suggest that it is indeed the case that everything begins to exist. So let us grant the first step.

We will need to spend a little longer on the second step. There are those who believe that the universe stretches back into infinity and so we never really say that it has a beginning. Craig and others who support the *kalam* argument want to show that there is a difference between a potential infinite and an actual infinite. Basically they want to argue that while in theory an infinite exists it could never do so in reality. To make this argument they borrow some work by the German mathematician David Hilbert (1862–1943) who in turn had given popular expression to the theories of his compatriot Georg Cantor (1845–1918). Hilbert had asked us to imagine a hotel with an infinite number of rooms. On one particular evening a new guest arrives and requests a room. ‘I’m sorry’, said the owner, ‘but all the rooms are full’. The guest tries again, ‘How can that be possible if you have an infinite number of rooms?’ The owner recognises that the guest is right and starts to think through the problem. ‘Ah, yes’, he exclaims and heads off to sort the matter out. He has realised that by asking the person in room 1 to move into room 2, and the person in room 2 to move into room 3, and the person in room 3 to move into room 4, and so on, he will be left with room 1 vacant and will, after all, be able to offer his new guest a room. The hotel that was full could, it appears, fit in one more guest; and now it is full. But then, just as the hotel owner is feeling very pleased with himself, a very large number of new guests arrive, so large that the number is infinite. The owner may have been able to house an additional guest but, given that the hotel is full, how can he possibly have rooms for an infinite number of new guests? He can, if he asks the occupant of room 1 to move to room 2, of room 2 to room 4, of room 3 to room 6 and

so on. By making these moves he will now have all the even rooms occupied leaving all the odd rooms free. And as there is an infinite number of odd numbers he will have enough room to accommodate his new guests. The mathematicians will tell us that even though his register might say otherwise there are just as many people in the hotel now as there were before. In telling this story Craig is making a simple point: Hilbert's hotel is all very well in the imagination but clearly no such hotel could possibly exist in reality. Such a hotel would be ridiculous.

Along with this argument he produces a similar but separate attack on infinity. This time around he is not suggesting that an actual infinity cannot exist – as he had in the previous argument – but that infinity cannot be traversed. His own argument is somewhat complicated but it finds its root in ancient Greek paradox first recorded by Zeno. He explains that Achilles, the fastest runner in Greece, is set to run from one end of a track to another. For the sake of simplicity let us call the start of the track A and the end B; Achilles, then, is expected to run from A to B. However, in running from A to B he will have to pass a mid-point, let us call it 'C'. And to get from A to C he will have to pass another mid-point, let us call it 'D'. And to get from A to D he will have to pass another mid-point ... and so on. As you can easily see no matter how small the distance is between A and the last mid-point, there will always be yet another mid-point. In fact there will be an infinite number of mid-points, and exactly because the number of mid-points is infinite there is no possibility of poor old Achilles covering an infinite space; he is, therefore, unable to travel from A to B, from the start of the track to the end. Clearly we all know that Achilles can, of course, run the length of a track but it is not easy to see why Zeno's argument is wrong. Craig know just how complex these arguments can become and uses them to suggest that the universe could not have an infinite past but must have had a point of beginning. Without a point of beginning infinity would have

had to have been crossed in order to get us where we are today. And as Zeno has shown you can't cross infinity – at least not without a good counter argument under your belt.

If Craig has provided a persuasive argument for the universe having a beginning then his next step, number three, is merely to suggest that since it had a beginning something must have been the cause of the beginning. And that cause, according to Craig, is God. He also produces a couple of *a posteriori* arguments, lines of thought based on observation, but it seems to me that these arguments heavily on the state of current scientific discovery. It may be that he will be shown to be right but I think he makes a more interesting case when he is dealing with his two *a priori* arguments. These arguments are not dependent on either scientific knowledge or fashion but they are not, of course, immune from criticism. Clearly the chief bone of contention here revolves around the idea of infinity. Has Craig done enough to persuade us that infinity cannot exist in reality? If not, then I think his argument is susceptible to further attack. But if you wish to avoid the thorny problem of infinite regress, there is one more route open to you.

3.4 IS THERE A SUFFICIENT REASON?

The third of our cosmological arguments depends on the notion of sufficient reason. First among the supporters of this argument is a certain Gottfried Wilhelm Leibniz (1646–1716) who, although hardly a household name, is a heavyweight in the history of philosophy. He is perhaps most famous for the row that took place between himself and Newton for the bragging rights in relation to the invention of calculus. Although he was also made famous through Voltaire's biting satire *Candide* where the character Dr Pangloss makes Leibniz's views sound thoroughly ridiculous. But ridiculous they are not. Leibniz was an interesting man – a mathematician, lawyer, diplomat, and philosopher –

and often described as the last man in Europe who knew everything! Indeed his own considerable writings cover a wide range of subjects and propose a considerable number of intriguing theories. Fortunately from our point of view we need only look at a very small fraction of his work. We shall start off by looking at his two great principles: the principle of contradiction and the principle of sufficient reason.⁴

The first of these is straightforward enough. Put plainly: you should not contradict yourself. So, for example, it makes no sense to say 'an equilateral triangle is not a triangle' or to say that 'a man is not an animal'. I think this principle belongs to the realm of common sense and I suspect there will be few if any who would wish to argue with it. The second principle, however, is more controversial.

In order to discuss the principle of sufficient reason we must first take a look at Leibniz's use of terms. He suggests that there are two kinds of truth: truths of reason and truths of fact. By a truth of reason he means what we mean by a necessary truth. In elaborating he makes use of his principle of contradiction. To deny a necessary truth is, he tells us, to be involved in a contradiction. Truths of fact, by contrast, are our contingent truths and denying such truths would not involve us in a contradiction. As he put it himself 'truths of reason are necessary, and their opposite is impossible; those of fact are contingent, and their opposite is possible'⁵. Moreover, he goes on to explain, truths of fact are supported by the principle of contradiction; truths of reason are supported by the principle of sufficient reason. Every truth of reason, every contingent fact, has to have a reason why it is so. The cat is called 'Felix' because it is male, it is named after a cartoon character, it seems to be lucky, and it was the children's choice and so on. We can think of a number of reasons why the cat is called 'Felix' but if we are to provide a sufficient reason then we must provide a full explanation. But according to Leibniz a full explanation is simply not possible:

A sufficient reason must also be found for *contingent truths*, or *truths of fact* – for the series of things which fills the universe of created things, that is. Here the resolution into particular reasons could be continued endlessly, because of the immense variety of things in nature, and because of the infinite divisibility of bodies. ... But since all this detail only involves other prior and more detailed contingencies, each one of which also stands in need of a similar analysis in order to give an explanation of it, we are no further forward: the sufficient or final reason must lie outside the succession or *series* in this detailed specification of contingencies, however infinite it may be. And that is why the final reason for things must be in a necessary substance, in which the detailed specification of changes is contained only eminently, as in their source; and that is what we call *God*.⁶

We will not be able to provide a full explanation, a sufficient reason, because the universe is too complicated. Whenever we arrive at one set of reasons for something we find that we then need to find reasons for those reasons themselves. If we try to explain an event 'A' in terms of 'B', 'C', and 'D', we are then required to find reasons for 'B', 'C', and 'D'. Here, we need to realise that this is not a matter of infinite regress as it was with the two earlier arguments; it is more a case of the immense complexity of the universe. And it is this complexity which drives us to look outside the series of reasons for our sufficient reason. That is the argument. In order to look at the strengths and weaknesses it might help if we transform the prose into a series of steps.

1. If anything exists, there must be a sufficient reason why it exists.
2. But the world exists and it is a series of contingent beings.
3. Therefore, there must be a sufficient reason why this series of contingent beings exists.
4. But nothing contingent can contain a sufficient reason why this series exists.
5. A sufficient reason for any existing thing can only be in a necessary thing.
6. As the world is a series of contingent beings, this necessary being must lie outside the world.

7. Therefore, there is a necessary being that lies outside the world, and that being we call God.⁷

I realise that this formulation, like the one from Aquinas, is a little complex but I think each step is important for the argument. Step 1 simply states Leibniz's principle of sufficient reason; it is with step 2 that we run into our first difficulty. It is, however, the very same difficulty that we ran into when discussing Aquinas and all the comments made there are also relevant here. We cannot prove that this step is true but experience of the world around us would suggest that until we have good reason to think otherwise, the step should be granted.

Let us for the moment grant steps 3 and 4. If it is the case that nothing contingent can contain a sufficient reason why the world exists, and we still need a sufficient reason for its existence (as step 1 insists we do) then the only other possibility is that the explanation is found in some necessary being. And that is what step 5 postulates. We also know that the world is a series of contingent beings so this necessary being cannot exist as part of the world but must lie outside it, which is the basis of step 6. Finally step 7 gives a name to this necessary being that lies outside the world: God. In a sense step 7 is more of a definition than a conclusion. If there is a God, then God is the necessary being that is the sufficient reason for the world. It would seem that if steps 3 and 4 hold then the argument moves on quite smoothly, but do they?

Much depends on what is meant by a series and what we can expect of a series.

The three objections below turn on the following questions:

1. Is a series the same kind of thing as the members of that series?
2. Can we assume that because members of a series have a cause that the series also has a cause?
3. If we explain the members of a series why do we need to explain the series itself?

Let us take each in turn. The first objection states that the supporter of this form of the cosmological argument makes the mistake of treating the series of contingent beings as though it were itself a contingent being. But the collection of contingent beings is not a contingent being any more than a collection of stamps is itself a stamp. It is unquestionably true that a collection of stamps is not itself a stamp. I am not quite sure, however, that a collection of contingent beings is not itself contingent. If there were no such thing as stamps – and that is not an impossible conjecture – then there would be no such thing as a stamp collection. The stamp collection is contingent just the same as each stamp is.

The second objection runs as follows: there is no need to assume that because each member of a series of contingent beings has a cause, that the collection itself has a cause. There is no reason to assume, for example, that just because every human being has a mother that the human race must have a mother. Again, this is true. But is it not legitimate to ask why there are humans at all? Why should we not ask if there is a sufficient reason for the existence of the human race? We can concede that the cause may not be the same as for the individual members of the series of humanity but we are surely entitled to ask, nonetheless, why it is that humans exist at all.

The third objection is whether a series is something over and above the members of a series. To illustrate what I mean let me borrow the story of five Eskimos who are found in New York. After asking some basic questions the following stories emerge:

Eskimo No. 1 did not enjoy the extreme cold in the polar region and decided to move to a warmer climate.

No. 2 is the husband of Eskimo No. 1. He loves her dearly and did not wish to live without her.

No. 3 is the son of Eskimos 1 and 2. He is too small and too weak to oppose his parents.

No. 4 saw an advertisement in the *New York Times* for an Eskimo to appear on television.

No. 5 is a private detective engaged by the Pinkerton Agency to keep an eye on Eskimo No. 4.⁸

With these five stories we have an explanation why each Eskimo is in New York. To ask why the group as a whole is in New York would be an absurd question. There is no group or series over and above the individual members, and since we have explained why each of the five members is in New York we have explained why the group is there. This objection is made by those who assume that in order to explain the existence of a collection or series of things it is *sufficient* to explain the existence of each member in the series. Eighteenth century supporters of this argument, Leibniz included, would counter by stating that the principle of sufficient reason demands that two conditions be met:

1. There is an explanation of the existence of each of the members of the series of contingent beings.
2. There is an explanation of why there are any dependent beings.

The explanation of the Eskimos in New York is based on the assumption that in meeting condition one the adherent of the principle of sufficient reason will be satisfied, but this is not true. Certainly there is an explanation for why each of these Eskimos is in the city but those individual explanations do not explain why there are Eskimos. In other words, the Eskimos' stories provide reasons but not a sufficient reason, at least not as Leibniz and his friends would have it.

3.5 CONCLUSION

So where does that leave us? The strengths and weaknesses of the cosmological argument – as with all other arguments – depend on a number of key questions. Most of

these key questions have no clear answers. While some will argue one way, and do so with conviction, others can equally argue the other way. That, unfortunately, is the problem with this kind of thinking: we shall never arrive at an answer that is beyond dispute. So what are the key questions left open after our discussion of the cosmological argument?

Key Questions:

- Is the universe a brute fact?
- Are necessary beings possible?
- Can infinity exist in reality?
- Are sufficient reasons viable?
- Does a series stand over and above its members?
- Is the world made up of contingent beings?

¹ See Frederick Copleston, *A History of Philosophy. Volume 2. Medieval Philosophy* (London: Continuum, 2003), p. 345 and Anthony Kenny, *The Five Ways* (London: Routledge & Keegan Paul, 1969), p. 46 ff.

² Thomas Aquinas, *Summa Theologica* (New York: Benziger Bros., 1948), 1. q.2 a.3.

³ William Lane Craig, 'The Kalam Cosmological Argument', in *Philosophy of Religion*, ed. by Michael Peterson, William Hasker, Bruce Reichenbach and David Basinger (Oxford: Oxford University Press, 2007), pp. 210-211.

⁴ G. W. F. Leibniz, 'Monadology', in *G. W. Leibniz: Philosophical Texts*, trans. and ed. by R. S. Woolhouse and Richard Francks (Oxford: Oxford University Press, 1998), p. 272.

⁵ 'Monadology', p. 272.

⁶ 'Monadology', p. 273.

⁷ David Blumenfeld, 'Leibniz's ontological and cosmological arguments', in *The Cambridge Companion to Leibniz*, ed. by Nicholas Jolley (Cambridge: Cambridge University Press, 1995), p. 367. The quotation used here has been simplified in some parts and includes a few additions.

⁸ Paul Edwards, 'Objections to Cosmological Arguments', in *Philosophy of Religion*, ed. by Brian Davies (Oxford: Oxford University Press, 2000), p. 208.