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Cosmology and creation Transcript

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COSMOLOGY AND CREATION

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'In the beginning, God created the heaven and the earth' (Genesis 1, 1). The basic affirmation of most monotheistic religions is that there is one creator of everything other than itself. That is, there is one uncreated being that brings into existence all other beings by something we can least inadequately describe as a conscious act of will. The whole physical universe, and everything in it, is brought into being by a conscious and intelligent act of will – or at least by a being more like conscious intelligent will than it is like anything else in the created universe.

Without this belief, monotheistic religion as we know it would cease to exist. Is it a plausible or even coherent belief? Since Immanuel Kant devastatingly criticised all proofs of God in the eighteenth century theologians and philosophers have been almost embarrassed about it, and tend to speak of a 'leap of faith' in a creator God, instead of seeing it as the obvious and natural thing to think. However, modern physicists have pushed the pendulum the other way, and almost every popular book on science now has a final chapter about God and the creation of the universe.

There are, of course, some notable exceptions, and there are those who argue that physics can show that we do not need a God after all – as Stephen Hawking said, once physics has explained everything, what is there left for God to do? What I want to do in this talk is assess the impact of modern physics on the question of the origin of the universe, and the plausibility of the belief that the universe was created by God. I shall argue that modern physics makes belief in God much more plausible than it has been ever since Immanuel Kant. Whether I am right or not is for you to decide.

THE PRIORITY OF MIND

One of the basic decisions about world-views is whether you decide to start with consciousness and experience as the fundamental clue to your interpretation of reality, or whether you look for a physicalist account of reality, thinking of consciousness as a probably accidental by-product of physical processes. Most religious believers are committed to making consciousness primary, for the simple reason that they think of the ultimate reality as a form of conscious reality that is in most cases considered to be the source of all physical reality. Certainly for a theist all material reality depends upon a spiritual or conscious reality, which is therefore the more fundamental of the two.

Science as such is not committed to denying this. But since science deals only with the physical, since it seems to have established the general dependence of human consciousness on matter, and since matter existed long before any finite consciousness existed, science has sometimes been used in support of a materialist world-view, for which mind is at best totally dependent upon matter, or at worst an illusion.

There is an alternative hypothesis. Perhaps mind or consciousness is the fundamental reality, and the material is dependent upon mind. This alternative was taken for granted by Galileo and Newton. It was accepted by Charles Darwin, even though he came to doubt particular acts of divine providence and the benevolence of the creator. And it was accepted by Einstein, Bohr and Heisenberg, though they did not associate the underlying mentality of the cosmos with any religious idea of an interested and interacting God. The God of the scientists is real, but tends to be a rather impersonal, Platonic God, a beautiful but austere mind unconcerned with the problems of human life, expressing its being in the elegance and intelligibility of the universe yet indifferent to its cruelty.

Why should the idea of such a God appeal to so many scientists? It is because the existence of brute matter, that just happens to be the way it is for no reason, and yet that gives rise to such a fine tuned, utterly improbable and beautiful universe, terminates the quest for understanding in a way that is repugnant to any scientist; for scientists are committed to press the question of understanding as far as they can. They can accept that there are limits to the methodology of natural science, but find it hard to accept that there is no further way of pressing towards a deeper and final understanding of existence. Could the postulate of a cosmic mind help to further that quest?

If you think such a mind would simply be a concatenation of thoughts, feelings and intentions, its existence would be just as puzzling as that of the material universe, and just as unsatisfactory as an ultimate explanation of existence. But that is not the sort of mind scientists are interested in. They look for an ultimate intelligibility, something like a final self-explanatory mathematical theory that cannot be other than it is, and whose necessity in some way generates this material universe. The search for a 'theory of everything', for a deep necessity underlying all observed realities, is one expression of that urge to understand that drives science. But the strictly scientific search for a theory of everything seems doomed. Mathematical theories do not seem to exist on their own, as systems that exclude all alternatives, and there seems to be no way of 'breathing fire into the equations', of accounting for the existence of a contingent cosmos from purely mathematical facts.

What is needed is something that transcends scientific method, that is not just a set of abstract mathematical axioms, and that can generate physical reality. That would be an actuality richer and more stable and enduring than that of physical reality, intelligible in itself and necessary in its nature, yet capable of creativity and understanding.

THE NECESSITY OF MIND

The way to conceive of such an actuality becomes clearer if we consider that mathematical necessities are fully existent only when they are conceived by some consciousness. So we can frame the idea of a consciousness in which exist all mathematical structures, all possible states that could ever come to be, and all moral and aesthetic values (possible states that are worthy of rational choice). We can say that there necessarily exists a complete array of every possibility of any kind, something like the Platonic world of Forms. Its nature is necessary, for every possibility is exhaustively expressed within it. No other possibilities exist, and the possibilities that do exist are necessarily what they are. Being necessary, no question arises of why this consciousness is as it is, since it includes all possible worlds and states exhaustively. No choice between them has to be made, and so no reason needs to be given why one state exists rather than other. All possible states exist, but possibles can only exist if there is some actuality that sustains them in being. That actuality is mind, which conceives them, and is necessarily what it is, the actual being that is necessary to give these possible worlds real existence as unactualised possibilities.

This form of argument, while very abstract, will be familiar to modern cosmologists, who formulate possible worlds theories and try to conceive necessary mathematical structures in their quest for an ultimate explanation of why things are as they are. We can hardly claim completely to understand such ultimate factors, but we can say that such things seem to be possible, and if they are, we can see how they might provide an ultimate explanation of being, even though we have no access to anything like an immediate intuition of such an explanation. God, the supreme self-existent mind, in short, remains a mystery to human understanding.

ULTIMATE EXPLANATION

The explanation would go something like this: ultimate mind can be spoken of as omniscient, since it conceives all possible states, and knows that there are no more than it conceives. It can be spoken of as omnipotent, since only what is actual can give actuality to possible states, and it can ensure that there are no other beings than the ones it makes actual. Surveying all possible states, it evaluates them in terms of criteria of goodness that are themselves necessarily inherent in its own being.

There can be little doubt that some states are of more value than others. A state of great happiness is of greater value than a state of great pain. Appreciation of beauty is of greater value than indifference to it. Knowing and delighting in many things is of greater value than knowing few. States of pleasant consciousness are of greater value than unconscious states. So in general value lies in the realisation of conscious states of finding happiness in contemplation of many kinds of beauty. These criteria of objective goodness are necessarily part of the divine mind.

So it can actualise in its own being the highest compossible set of good states - which will include indefinitely many forms of beauty, intelligibility, and bliss. This form of actualisation distinguishes between possible states that are ugly, irrational or distressing, and states that are beautiful, intelligible and pleasing. It selects the latter set in its maximal form. The process may be likened to the activity of a sort of divine imagination, creatively selecting possibles and finding pleasure in contemplating them. The self-existent divine mind may then be rightly called the Supreme Good, since it is happy in the changeless contemplation of its own supreme perfection.

THE MULTIVERSE

Some of the possible states it contemplates will be universes that can provide additional objects for its contemplation that have an independent reality that is not just in the divine imagination. If they are actualised, they will become what Newton called

'sensoria of God', logical spaces in which beautiful and intelligible objects of direct divine knowledge are given actuality, moving from the realm of the possible into the objective existence of the actual, and then being received back into the eternal through divine knowledge of them as actual.

How many such possible worlds are there, and how many of them may become actual? We have seen that in modern cosmology the idea of a 'multiverse' is often thought to be the most plausible explanation of the fine-tuning of this universe. When Martin Rees, the British Astronomer Royal, in his book *'Our Cosmic Habitat'* (Princeton University Press, 2001), considers the amazing fine-tuning of our universe, he says, 'We seem to have three choices: we can dismiss it as happenstance, we can acclaim it as the workings of providence, or (my preference) we can conjecture that our universe is a specially favored domain in a still vaster multiverse' (p. 162).

A multiverse is a vast – but how vast? – ensemble of universes, of spacetimes, that all exist. Perhaps black holes can spawn other spacetimes, with differing initial conditions and laws of physics. We could never communicate with such other universes. But if we had a vast range of them, perhaps every possible set of laws and initial conditions, then the existence of this fine-tuned universe would no longer be a surprise. It would be bound to happen sooner or later.

Appeal to a multiverse, within which our universe is just one case, still leaves massive problems unsolved. What is supposed to specify the array of possible laws and conditions from which particular existent universes arise? How many arrays are there, and in what sense do they exist as possibilities? What can ensure that every possible universe actually comes to exist, that the whole gamut of possibilities is systematically run through? And is it really the case that there is a finite set of universes, all of which will come to exist sooner or later (for if the set of universes is infinite, they will never all exist)?

THE PRINCIPLE OF PLENITUDE

Although it is beset with difficulties, the idea of a multiverse prompts a further suggestion about the nature of the Primordial creative Mind. If we posit a divine mind, then there can be an infinite and exhaustive array of possible universes that exist in the actuality of that mind. Perhaps an essential characteristic of primordial mind is the principle of plenitude. According to this principle, every possible sort of good should exist, as long as its existence does not come at the price of excessive and unredeemable harm.

St. Augustine comes near to framing the principle when, discussing the existence of evil, he writes that the world's course is 'more gracious by antithetic figures' (*City of God*, Bk. 11, ch. 18). That is, 'As a picture shows well though it have black colours in divers places, so the universe is most fair, for all those stains of sins' (ch. 23). Augustine's idea is that the universe is better if there are many grades of goodness, even if the lower grades involve the existence of evil. From this we might generalise that the more kinds and degrees of goodness there are the better. And perhaps there is something in the divine nature that causes it to generate every possible sort of good, even though some kinds will inevitably incur suffering. We would be wise to add a proviso that the good must overwhelmingly outweigh the evil, and that evil must in some way be redeemable, or be capable of being turned to or giving rise to an otherwise unobtainable good for the sufferers themselves.

Thomas Aquinas similarly asserts something like the principle of plenitude in a rather different way: 'A mark of active will is that a person so far as he can shares with others the good he possesses'. So 'it befits the divine nature that others also should partake of it' (*Summa Theologiae*, 1a, 19, 2, responsio). Aquinas does not draw from this the conclusion that seems naturally to follow, that it necessarily belongs to divine perfection that there should be many created goods, and many subjects to experience them, and perhaps that the more different kinds of goods there are the better. But it seems logical to do so.

NECESSITY AND CREATIVITY

Augustine also thought of the possibility that there might be 'worlds without end', that is an infinite number of different universes (book 12, ch. 19), though he was reluctant to decide on the issue. Where saints hesitate, cosmologists rush in to assert the existence of many universes. But when they posit a multiverse they are not, as Martin Rees implies in the quotation above, positing an alternative to God. They are suggesting that the divine mind produces not just one universe, but many, and perhaps an indefinite number, of universes. If God is indeed perfect beauty and bliss, it seems most plausible that God will allow those possible universes to exist that meet the conditions of the principle of plenitude. There will be many possible universes that God would not permit to exist, since they contain too much unredeemed evil. But it may be in the nature of God, as self-realising pure actuality, to allow into actuality, to 'let be' (Genesis 1, 3) all possible worlds that are overwhelmingly good, and in which evil and suffering are necessary conditions of greater good for sentient beings in those worlds.

God is thus not only perfect Beauty and Bliss, but also the infinite creator of unlimited kinds and degrees of goodness, through the overflowing divine plenitude of perfect being. And God is also the redeemer of evil in any world that comes to be.

In this scheme both necessity and contingency, changeless perfection and creative freedom, spirit and matter, exist and are coherently related. The array of all possible states and the actuality of that in which they exist is necessary. But the actualisation of specific sets of possibles is contingent. It does not follow from the description of possible states alone, but while concurring with the principle of plenitude, allows free creativity in the specific worlds that are brought to be. The divine perfection is changeless, since it can never cease to be the most perfect possible being. Yet the specific content of the actualised objects of divine contemplation is generated by creative freedom. Spirit is the fundamental reality, without which there could be no possible states and no material states. But the material world provides at least part of the content of divine consciousness, and without objects of some sort consciousness could not exist.

THE THEORY OF EVERYTHING

Seen from this perspective the cosmos is one small part of the contents of the divine consciousness. It is not just a self-existent or accidental reality. It is part of the divine mind, chosen for the sake of its goodness by a fundamental reality that is in itself the Supreme Good. Such a conclusion could never be part of natural science, for it speaks of that which is beyond the natural, the personal origin of the cosmos. But it is a conclusion that shares the most profound scientific motivation to understand why the cosmos is as it is, and that completes human understanding of the cosmos in a way that, though hesitant and imperfect, makes comprehensible the beauty and intelligibility of the physical world.

This cosmos is actualised by mind from the exhaustive array of possibilities in the divine consciousness, and the cosmos exhibits both the rational necessity of intelligible law and the free creativity that arises from its own spontaneous projections into an open future.

If there is a theory of everything, it must lie in the mind of God. And the mind of God is hidden from human understanding. Nevertheless, the human mind is capable of seeing that the natural and reasonable completion of its quest for understanding lies in the existence of a divine self-existent mind. It is in this sense that modern cosmology points beyond itself towards religion, or at least to belief in an ultimate mind that is in itself the perfectly good and beautiful. Cosmology can correct the myopia that often afflicts religion when it is only concerned with gaining supernatural help to fulfil my desires. Yet religion can point to a completion of the insistent search for understanding that drives the natural science. It can point to that completion in something that lies beyond and yet perfects science, the mysterious yet wholly intelligible reality of ultimate mind.

Keith Ward, 17 November 2004