What can God Explain?

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1. Introduction

In this paper, I shall be arguing for what I hope is a modern version of a very traditional view, which is that God can explain two very basic phenomena: the first is the existence of the universe as we know it: the second is the particular way in which the universe is organised. I shall also, though briefly, try to counter the view that the totally unwelcome features of our universe make it impossible to reconcile the universe as it is with anything like traditional theistic belief. This project, however, is quite a daunting one. So I would wish to make it clear right at the start that, while I would claim that my views are reasonable, and indeed more reasonable than belief in the denial of these views would be, I still do not hold that it is unreasonable for someone to reject each of the conclusions for which I shall argue. For plainly anyone, whether myself or any opponent, can be both reasonable and mistaken.

The project is, as I have said, daunting. In particular, it has to overcome the arguments for three contrary positions. These positions are

a) That no explanation for the existence of the universe is necessary.
b) That in any case the notion of 'God' is too hopelessly vague to be genuinely explanatory.
c) There is no explanation of the moral character of this world which is compatible with anything like traditional theism.

I shall try to undermine each of these counter-claims. In order to do so, I shall begin by offering some very general considerations concerning the notion of explanation itself. Partly I do this for the sake of clarity: but also because I think it important, at any rate in passing, to try to determine which difficulties are inherent to the very notion of explanation itself, and which are specific to explanation used in a theist context.

2. What is Explanation?

If we leave aside for the moment the explanation of personal behaviour, the most obvious kind of explanation consists in exhibiting

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some particular event as falling under a general rule or law. We are satisfied with an explanation when we can say 'That's just what one would expect to happen in the circumstances'. Of course, in order to do this successfully we need to have carefully identified which are the relevant features of what happened. We are all capable of jumping to conclusions which are either just plain wrong, or else not perfectly accurate. To this extent, the notion of 'explanation' need not involve anything with which Hume would not have agreed. For nothing so far is inconsistent with saying that an explanatory 'law' is simply a summary of what previously has happened in our experience – what Hume calls, a pattern of 'customary', by which he means constant, succession. Of course Kant considered this account of causal explanation as fatal to the whole project of Enlightenment science; and argued that Hume's supposedly basic notion of 'experience' itself presupposed the kind of causal necessity which Hume would ascribe to a projection on our part.

It is often rapidly affirmed that Kant is right on this point and Hume wrong. But it is worth considering how far Hume's more sceptical picture could take him. Hume could certainly accommodate the fact that our laws of nature regularly undergo refinement (and, occasionally, outright rejection); for in his terms, we might find that constant conjunction was not quite constant; and that our notion of what was constantly conjoined with what can and should often change. Nothing in this to disturb a scientist – such refinements of the laws of nature are commonplace. Nevertheless, does it not appear that on Hume's view, absolutely anything might happen at any time; for all we know, we live in a world of cosmic coincidence? Strictly speaking, I believe Hume would accept that. Nonetheless, he might point out that, by coincidence or not, our world is like that – regular and therefore predictable. Hume could argue that the assumption that the coincidental patterns of constant conjunction will remain constant happens to serve us very well. If Humean scientists continue to make this assumption, they will be at no practical disadvantage relative to their colleagues who believe that there is necessity in things. The two assumptions are operationally equivalent. Kant is being needlessly alarmist to suggest that Humeans inevitably undermine the whole scientific project. Of course, it is conceivable that there be a one-off event, a happening which forms no part of any constant conjunction of experiences; and that such an event would be totally inexplicable in Humean terms. But he might retort that such an event would be equally inexplicable on anyone's terms, and he would be right.

Nonetheless, the necessitarian scientist, if I may so describe someone who believes that there is a causal necessity in the way in

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which things in the world interact, will not rest content with this Humean account of explanation. It has several shortcomings. Firstly, it gives little or no guidance for distinguishing between what could be random conjunctions and genuinely causal connections. Thus, a Humean might be disposed to infer that day causes night, and night day; the conjunction is perfect, and there is no Humean reason to look further for anything more explanatory. Again, every bicycle produced in Britain is smaller than the dome of St Paul's cathedral; but the necessitarian scientist would not be willing to suppose that the Dome somehow limited the size of British bicycles; or indeed of all bicycles worldwide. But for the Humean, no conjunction, provided it is constant, is any more or any less significant than any other. None is more worth taking as the basis for further research than any other. Nor, as it seems to me, is it simply a matter of causal beliefs 'supporting counterfactuals', as the phrase goes: as if to say, 'If St Paul's were to be demolished, bicycles might well turn up which are truly enormous by contemporary standards' Neo-Humeans might try to offer that absurdity as the reason why they too would take my example as ridiculous. But, in default of any experience of post-Dome bicycles they would have no psychological Humean inclination to suggest any such thing. The absurdity assumption is groundless in their own terms.

One way in which the necessitarian scientist might claim to differ from the neo-Humean is that he is constantly in search of mechanisms to account for the relationships between the properties of things. Often enough, the models have a primitive simplicity about them, and might almost be seen as sophisticated variants on Humean billiard balls. Subatomic particles typically have mass, and hence can possess kinetic energy and can be launched at one another to produce splitting, and so on. To be sure, scientists often produce complex equations in their attempts to formulate accurate scientific laws, and they would perhaps speak of such equations as 'models' for reality. But it seems to me that they are not in general content with such abstract models, and would much prefer if they could interpret these equations in terms of things which are within our everyday experience. We are well acquainted with billiard balls, and with things being split apart into smaller bits; we can understand strings vibrating at different frequencies; at a pinch we can understand such vibrations as occurring in ten dimensions. We can visualise water going down a dark hole and never coming out again. We use such models not only as visual or imaginative aids; but, at least sometimes, as pointers to entities which lie totally beyond our direct experience. Perhaps the line between helpful metaphors and ontological commitment is not

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always clear, either to non-specialists like myself, or to scientists themselves. I suppose that talk of colliding sub-atomic particles is to be taken literally, but that curved space, black holes, and ten-dimensional strings are metaphors – but I am far from sure. But in either case, scientists can be stimulated to look for further particles – the Higgs boson, which, though itself of zero mass, might explain why other things have mass, would be one instance. What sense of 'explain' is being invoked here, one might wonder?

At any event, my point is that all this kind of research is quite difficult to reconcile with Hume's general position, and that of his contemporary empiricist followers. It is not so much that they cannot re-interpret each step once it is taken (if indeed they can do that much) but rather that the entire inspiration for this kind of research and for that kind of imaginative construction of hypotheses is difficult to justify on purely Humean grounds. Surely the best explanation for the success of contemporary science is that it correctly assumes a realist account of the meaning of physical laws, and of at least some realities which we can only metaphorically describe. It is for this reason that Kant was in the end right, and Hume wrong. But notice that to say '…but surely', as I have just done, is not really an argument: it is an appeal to some kind of unargued for intuition of what is and is not reasonable.

But by far the most difficult aspect of contemporary science, as it seems to me, is to determine what requires explanation, and when explanations have reached the point at which they can justifiably be said to be complete. Consider the following examples:

a) We can correlate the half life of radioactive substances with their chemical composition, and so give a statistical probability for the proportion of atoms which will decay in that time: but we can at present give no explanation of why any given individual atom decays rather than any other. Einstein and Bohr disagreed about whether some further explanation was necessary.

b) We can correlate the power of gravitational attraction of an object with its mass; but to many scientists this still leaves gravity itself as quite mysterious. Yet the attempt to explain it by postulating graviton-particles seems rather a desperate expedient. Is the mass/gravity connection, then, simply a brute fact, not further to be explained?

c) Neuroscientists and philosophers are both divided about whether consciousness and the content of our concepts and beliefs can be explained simply in terms of the activity of the neurons in our brains. On the one hand, if we were to

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> postulate a perfectly developed neurology, so that we could produce a 'constant conjunction' between neural states and conscious states, it still seems to many neuroscientists and many philosophers that the conjunction would not constitute an adequate explanation at all: and to others it would seem clear that once the neurology was perfectly established, there would be nothing further to be looked for, so the explanation must be satisfactory.

So far as I can see, these three examples show no signs of being resolved to everyone's satisfaction. There is perhaps an assumption on the one side that everything that can be known must be accessible to the methods of physics, even if at present we have not developed our physics sufficiently; and on the other, there is an equally deep-seated conviction that none of the proposed correlations is what is needed to provide a satisfactory explanation. We might have to be content, at least for the moment, either to resign ourselves to the fact that even the best explanations might seem seriously inadequate: or to suppose that there may be properties of the things in our material world which are not accessible to the methods of physics; or that there may exist entities which are not material objects at all. But how to decide between these possible conclusions?

It is time to try to sum up this long – yet no more than preliminary! – section. What we mean by 'explanation' should at least reflect the methods of scientific research, whose assumptions can perhaps be justified by the success which adopting these assumptions has produced. I think these assumptions can be listed as follows:

1. That the 'laws of nature' represent our best efforts to give precise accounts of the causally necessary ways in which the properties of things interact with one another.
2. That we would hope that the entities referred to in these laws actually exist independently of our theories, even though we cannot always directly experience such entities.
3. Ideally we could perhaps give literal descriptions of the entities referred to in our mature theories, but at least in the interim we often can do no more than offer mutually correcting metaphorical descriptions; and not always can we even do so much.
4. That we do not have a clear notion of the point at which the desire for further explanation is irrational.

The difficulties involved in each of these claims are serious: I suggest that they are well known, and I claim that they arise quite separately from any problems about theism.

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3. What can God explain?

A. The existence of the universe

Before trying to decide whether or not God can explain the universe, there are therefore two prior issues which must be tackled. The first is whether there is any need to explain the universe at all; and the second is whether any kind of explanation is even possible.

Various attempts have been made to show that the universe simply needs no explanation at all. Here is a modernised version of something which Kant said. Kant insisted against Hume that there was every justification for speaking of causal necessity in the world of our experience. But he maintained that, although it was not indeed senseless to speak of causal explanations outside the realm of possible experience, there was no way in which such a use could be validated. He also maintained that there was no legitimate way of showing that the necessary being – whose existence he accepted – had any of the properties one might look for in God. Well, then: the law of the conservation of energy is one of the most fundamental laws of physics. It states that, though the distribution of matter/energy in the universe is varying all the time, the total energy in the universe cannot change. But if it cannot change, then the energy in the universe is just 'there', and is therefore a plausible candidate for the status of necessary being. No further explanation is required.

This argument, I suggest does not work. There are perhaps two reasons for supposing that the world did in fact have a beginning. The first derives from a philosophical puzzle about infinity which troubled both Aristotle and Aquinas along with other medieval Aristotelians. It might be argued, they said, i) if the universe had no beginning, then it must already have existed for an infinite number of days; but ii) there cannot actually exist an infinite number of anything. Hence iii), the world cannot have existed for an infinite time, and so must have had a beginning. It is a matter of scholarly discussion in what sense Aristotle did say that in a sense an infinity can exist; but it seems that he meant no more than that one can be in the middle of a process which need have no end.[1] William Lane Craig has argued, I believe convincingly, that the theoretical mathematics of infinity cannot without intolerable paradox simply be applied to the actual world; and that the two premisses of the above argument are sound if taken to be true of the

[1] See Jaakko Hintikka, 'Aristotle's Infinity', *Philosophical Review* **75** (1966/2), 107–118.

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actual world. If time had no beginning we would already have had an infinite number of days, and that is impossible.[2]

But if the universe did have a beginning, then it does require an explanation. Appeal to the laws of physics will not satisfy this requirement. For the laws of physics describe the way in which things in the universe actually behave. They do not cause things to behave in that way. If no universe exists, there is nothing for the laws of physics to describe, and nothing of which they can be true. So the law of the conservation of energy, while it states that where energy exists, it exists in an unchangeable amount, is vacuous in the case where no energy exists at all. Accounts of the Big Bang extrapolate backwards to a point at which the universe would be infinitely small, infinitely hot, and infinitely dense. It seems to me reasonable to suggest that the implications of this are that at that 'point' there can be no physical object which has those properties. At the limit, the universe does not exist. Fred Hoyle accepted this argument, and was not happy with what he took to be its theistic implications. It was this that motivated him to consider an alternative model of the universe, the steady state theory. But this has been convincingly refuted by the experiments of Hubble, Penzias and Wilson which show that the universe is expanding, and that its expansion began some 15 billion years ago.

It is more difficult to argue that the universe needs no further explanation if it did in fact begin at a point in time in the past. For quite generally, science would simply not accept something coming into being without trying to find some explanation of why it did. Nevertheless, there is here a very deep conflict of philosophical intuitions and it is always hard to get behind an appeal to intuitions, or to adjudicate between conflicting ones. So, consider these examples:

If astronomers observe the sudden appearance of a bright light in some portion of the sky, they will, let us suppose, explain it in terms of a previously unsuspected supernova; they will not be content until they have fitted it into the pattern of regular behaviour which characterises such exploding stars, and to trace that behaviour in turn to most basic patterns of physical interactions. But why does such an occurrence need an explanation at all? If the neo-Humeans are right, there seems to me to be no particular justification for saying that it has to be an instance of some pattern or other; there is no clear reason why it might not be a one-off event. Why, then, can it not simply happen without cause, without explanation? If the

[2] William Lane Craig, 'The *Kalam* cosmological argument', in William Lane Craig (ed.) *Philosophy of Religion: A Reader and Guide* (Edinburgh, Edinburgh University Press, 2002), 92–113.

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reply to this question is that most things happen as part of a repeatable pattern, does that assertion itself not require support in two respects: even if most things are part of a pattern, why should this be one of the ones that is?; and in any case do we need to ask why most things exhibit regular succession? The necessitarian will, of course, argue that the best explanation of the success of scientific research is that the basic assumptions which researchers make are in fact correct, and that a key assumption is that things necessarily react with one another in ways which are determined by their natures. But as I have mentioned above, this is not quite a clinching argument, since the neo-Humean could still try to maintain that all he needs for scientific success is to assume that events in the world just happen to be patterned without any necessitation being involved at all. Provided it works, he does not need to explain why it should. The key claim the neo-Humean needs to make is that such an assumption of cosmic coincidence needs no form of realist justification; what he cannot consistently do, as it seems to me, is to claim that it is justified because it has worked well so far, unless 'justified' simply means 'convenient'. To the necessitarian realist, the Humean picture seems impoverished and profoundly unscientific: to the neo-Humean, the realist view seems to make basic assumptions which are at once unnecessary and unverifiable. In my own view, there is at this level no knock-down proof; but it seems to me on balance more reasonable to adopt a view which underlies most scientific research, and which can give a rationale for distinguishing between pseudo-correlations and causal connections.

Suppose, then, that at this point the eager theist leaps in to claim that it is more reasonable to hold that the universe needs an explanation, and that the explanation is God. Surely the obvious rejoinder is to question whether that is an explanation at all; for does it not lack two of the features which we would normally consider absolutely fundamental to any genuine explanation?: it does not offer any lawlike correlation; and it provides absolutely nothing in the way of a model whereby we can gain any understanding. If the theist appeals to the notion of causation, the problem is that at least on most theistic views divine causation is, to say the least, not very similar to intra-worldly causation. The net result is that to appeal to God as an explanation is to do no more than give a name to the problem, but not really to offer any kind of explanation at all.

The force of this criticism can, I believe, be blunted, but not conclusively overcome. Firstly, the theist can say that we would indeed not expect that a transcendent explanation should have the same explanatory characteristics as a scientific explanation of worldly phenomena in terms of other worldly powers. In the nature of the

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case, the explanans is not going to be an item in our world; and indeed, given how hospitable contemporary science is to worldly explanations in terms of things which are in principle unobservable, and to which we attribute some very strange properties indeed, we can perhaps not afford to be too inhospitable to an explanatory Something which would be timeless and not a material object at all. Indeed, it is precisely down this avenue that Aquinas urges us to go. He advocates that in using the word 'God' we adopt a definition of convenience, a nominal definition, 'whatever it takes to explain the world' because we have no knowledge of anything better to use. We do well to remember that the brisk conclusion of each of his Five Ways, 'And this we call God', uses the term 'God' precisely in this non-committal stipulative sense; he claims to have established no more than that the universe does need an explanation. To say more will require a great deal of further philosophical effort.

B. Order or Design?

To fill out the nature of this minimalist explanation the theist, in my view, is going to have to use at least some of the considerations more traditionally considered in connection with the so called 'argument from design'. Once again, though, they will have to be used with considerable caution. There are several reasons for this.

It is difficult to suppose that there could exist anything at all which did not in some way and at some level exhibit some kind of order or structure. I think it safer to assume that a totally non-orderly universe is simply not possible. On that assumption, there is nothing remarkable in the fact that our universe is orderly. Rather, the question needs to be whether the orderliness is of such a kind as to need some kind of further explanation. The well-known argument based on what is called the 'anthropic principle' at least recognises this requirement. It seeks to meet it by arguing that the very accuracy of the orderliness required for the evolution of intelligent beings such as ourselves is so demanding that it has to be purposeful. In short, the degree of orderliness is such that it can be explained only as deliberately aimed at producing beings such as ourselves. I think this argument is at best problematic. Here are my reasons:

i) While it is indeed true that, so far as we can tell, very small variations in any of the basic constants in physics will have extraordinary large effects, the conclusion to be drawn from this need not, and I think should not, be limited to

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observations about what would have been the fate of human kind if the set-up were even marginally different. If the argument is going to work at all, it is going to have to deal with the universe as a whole, not just with 'us in our small corner'. And in any case it might be argued that the anthropic principle is especially vulnerable to arguments connected with the Problem of Evil. On this point, more below.

ii) It is of course true that the universe is very delicately balanced in such a way as to produce the kinds of being that it contains. To say that, however, is little more than a tautology: any universe will of necessity be fine-tuned in such a way as to produce exactly what it produces. That in itself says nothing about purposefulness or design.

The point is whether the particular arrangement of this universe requires explanation at all, and, if it does, whether that explanation has to contain any element of intelligent design. Once again, it seems to me not to be unreasonable to deny that any such explanation is necessary. Indeed, such a position is all the more plausible because the relationship between a transcendent cause and its effects is even less transparent than ordinary intra-cosmic causal relationships. Moreover, we are extremely ignorant about vast areas of the universe, and not really in a position to assess its functionality as a whole with respect to any purported purpose or design that it may exemplify.

On the other hand, it is perhaps striking that a universe should produce even one planet in which beings appear who do entertain such notions as purpose and point and intention; and who without undue anthropocentrism can appreciate beauty and elegance and value in many of the things that this planet contains. It is common to give short shrift to poor old Paley and his watch; but I wonder is this fair? The fact that such astonishing complexity as is to be found in our earth itself, let alone in the universe as a whole, can be truly describable in terms of comparatively few fundamental laws is in itself remarkable; and is something which we would in ordinary human activities take to be a sign of intelligent planning and elegant economy of design. Given that there are good reasons to suppose that there does exist a first cause of the universe, it is not unreasonable to conjecture that that cause must itself entertain some such notions as point and purpose, given that the universe which it brings about contains beings such as ourselves who naturally operate on the basis of such attributions to one another.

Two caveats are in order. Firstly, I am not for one moment denying that our universe, our planet, and everything within it has in different

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ways evolved from things which were much simpler – from the baryons and quarks and other primitive particles which first emerged from the big bang. The most complex life-forms, such as ourselves, have evolved over billions of years. Secondly, neither am I at all trying to say that each stage of the process is somehow purposive in itself. Thus, I believe it is the case that the mutations which led to the evolution of the feather long antedated the development of organisms that could fly. The process which produced a feather was not itself somehow 'aiming at' helping birds, even though eventually the environment would be such that for some organisms the possession of feathers turned out to be an advantage. If there is purposiveness in the universe, it is that the design of it taken as a whole exhibits purpose, rather than simply that at various times those entities which were better adapted to their environments tended on the whole to be better survivors. Just so with Paley's watch: the watchmaker intends the gears to turn the hands on the dial; but the clockwork itself is not purposeful; it is a blind mechanical process. The exception to this would be those higher animals, including ourselves, to which it is appropriate to ascribe intention and purpose. The significant fact about it all is that there are beings such as ourselves who can see, or at least claim to see, purposiveness in the cosmos as a whole, and that such a process from start to finish can reasonably be seen to be more than an immense chain of adaptation to the environment, whether on the part of inanimate entities or of living organisms.

Once more, I am not arguing that such a conclusion is the only one which can be drawn beyond any reasonable doubt; I am arguing only that such an overall interpretation is not at all an unreasonable one; indeed I believe that on the balance of probabilities it is likely to be correct. In which case, that the transcendent cause of the universe is not in space/time, is not a material object, and is intelligent and purposeful goes at least some way towards establishing that it is in fact God. The dispute is not dissimilar to the well-known dispute in neuroscience, about what will count as a satisfactory explanation of consciousness and of human choice. The reductionist and physicalist reply to this question is not absurd, for it is indeed hard to pin down whether more explanation of our human consciousness and choices is required than one couched in terms of the complexities of our cerebral electronics. Yet that electronic explanation still hardly seems to add up. What 'more' consciousness, or agent causation adds to pure neurology, or, as I would urge here, to cosmology, is a matter of rational assessment, which is much more than geometry or logic or physics.

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C. 'The Problem of Evil'

Many of the approaches to what is in general called 'the problem of evil' assume that the task of anyone who wishes to deal with the problem is to show how appeal to the existence of a God with the traditional attributes of omniscience, omnipotence and omnibenevolence can explain all the undesirable features of this world. I think that this approach is doomed to failure, and that the most that the theist might hope to do is to explain why it is reasonable to believe in such a God despite the state of the world. The general line of argument is to show that there is no justification for blaming God unless it can be shown that this world could not be the best possible world. If we cannot establish that God can reasonably be blamed, then there is no reasonable ground for saying that the world as it is cannot in the end be explained by the existence of a good God.

The first step in this argument is to suggest that we have no clear criteria for evaluating the worth of worlds overall. It is no secret that even were we to agree, as in general terms we might well, on which actions or features of our world are valuable, admirable or in some other way to be evaluated positively, we are much less likely to find clear grounds for evaluating complex states of affairs overall. Two brief illustrations might serve to illustrate the point.

The first concerns predatory animals. If a leopard kills a deer, is this a good or a bad state of affairs? Plainly at least the initial answer is going to be different, depending on whether one considers the action from the point of view of the leopard and her cubs, or the dead deer, or the herd of deer, or the ecological balance of the wildlife on the Serengeti Plain as a whole. Similar considerations might apply to the relationships between mosquitoes and humans, or the AIDS virus and humans, and the overall balance between humans and the rest of the organisms in the world. We are naturally inclined to consider at least the second set of questions from the human point of view; and certainly a God's eye view, even if there is a God, is not readily available to us.

Or consider some comparative values, such as the achievements of the human mind, the beauties of music and the arts, the deep value of love at its best. One might reasonably think that on balance these things together outweigh even the terrible sufferings which disfigure the history of our world. That thought might explain why we think that Earth is a better place than the moon, despite the fact that there is no suffering on the moon. In the same way, we might think that the earth now, when humans and other animals have evolved, is a richer and better place overall than it was millions of years ago when

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there were no life-forms on earth capable of suffering. Of course, there are no scales on which such a balance can be tested; nor is there any mathematical procedure for measuring which of these values outweighs the other. Still, it is at least reasonable to think that Earth as it is now is a good place overall, and to say that if this is true for Earth, there is no reason for denying that the same is true about the Universe as a whole.

I claim that this is a 'reasonable' point of view. By that I mean that it is a view which a thoughtful and well-informed person could believe there to be good grounds for accepting. I do not claim that it is the only reasonable point of view. Indeed it seems fairly obvious to me that there are very many questions about this world and this universe about which many different and indeed incompatible views can reasonably be defended, and no one of them conclusively established. It is just like the way in which it is built into our system of justice that there are often several mutually incompatible views which can reasonably thought to be true on the balance of probabilities. Indeed I think that statement itself is true beyond any reasonable doubt.

I would argue, then, that it is not unreasonable to suppose that this world is good overall.

On the other hand, to establish that much, if indeed I have established that much, is not sufficient. It seems to me that if one is going to claim that the existence of this world can be explained in terms of a good God, one has to show that one can reasonably believe that this is the best possible world. We humans can perhaps operate with a distinction between strict duty, on the one hand, and on the other, heroic deeds over and above the call of duty. We can perhaps blame people for failing in their duty, but not blame them for failing to be heroic. I think, however that higher standards have to be applied to a God if such a being is to be thought worthy of worship. Leibniz was right: God surely would be obliged to do the best that is possible.

But might this be the best possible world? Once more, it seems to me that there is no way of establishing beyond reasonable doubt that the world could overall be better than it is. Not that this has been a widely shared view, it has to be said. Hume, in a famous passage in the *Dialogues Concerning Natural Religion* suggests that if anyone were told in advance that they might experience a world made by an all powerful and omnibenevolent God, they would be mightily disappointed to be told that this was it. Instead, they might conclude that it was the work of an infant deity, as yet unpractised in the arts of creation. With more experience, he might have grasped how the 'great springs of nature' could be tweaked to produce a more moderate climate, creatures that did not need pain to stimulate them, world

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without illnesses and misfortunes. It takes little imagination to suggest many obvious improvements.

I certainly do not trust/believe in the various efforts to demonstrate that every unfortunate event still contributes to the goodness of the whole. Efforts along these lines have been made: that suffering strengthens character, that disasters can punish humans for their wrongdoing, and that even if the good do suffer and the evil prosper, the balance will surely be restored. But surely suffering can embitter or crush people as well as strengthen character; and however much we might need to believe that righteousness is ultimately vindicated, this is, as Kant said, a postulate rather than a demonstrable truth. Efforts to explain that even the most horrendous or tragic events are all really providential seem to be at best incredible, and at worst morally outrageous.

Equally, however, the naïve Humean assumption that an omnipotent God must be able to fine-tune the great springs of nature in such a way as to satisfy our more idyllic imaginations seems to me equally untenable. If even an omnipotent God creates a limited world, it follows that in such a world some things are possible and others not. From what contemporary physics tells us about our own universe, it is clear that the patterns of causal interactions are extremely restricted; even the most minute changes in any fundamental law would have incalculably wide-ranging effects. Selective tuning – to provide an atmosphere which is breathable, recirculates water, and shields us from the worst aspects of solar radiation, yet without any risk of flash floods, droughts, or skin-cancer – is just not causally possible, so far as we can see. Descartes is right to admonish us not to allow our powers of imagination to limit our beliefs about the omnipotence of God. Universes quite unlike ours may indeed be possible: but if they are quite unlike ours, then comparisons to determine whether they are better or worse than ours will not be possible. And if they are like ours, we know as a matter of scientific fact that they will inevitably have causal limitations against which the Humean imagination is quite literally powerless.

4. Conclusion

If I am right, the conclusions of this paper are modest, reasonable, and important.

They are modest, in that I do not claim, nor do I believe, that I have shown that postulating the existence of God makes the origins of the universe clear, nor that the sense in which God explains a material

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world is one which we can clearly grasp. They are modest, also, in that I do not claim that atheism, or agnosticism on any of these matters is an unreasonable position to adopt. To be sure, just as there are indefensible versions of theism, which owe more to prejudice and passion than they do to reason, so there are such versions of atheism or religious agnosticism. All I wish to claim is that believing that there is a God does answer questions which cannot be dismissed without that dismissal being itself arbitrary.

That these are reasonable conclusions is certainly not to say that this is the only reasonable view which can be taken on such matters. But it is to say something about its place among the rest of our reasonable beliefs. For I claim that to conclude that there is a God is certainly not to deny or to try to sideline the achievements of science; nor is it to try to slip such a belief into the places where we do not yet have scientific explanations for things in our world. I am not, in that sense, offering anything like a 'god of the gaps.' Rather I am saying that the very features of our intelligence which best account for the successes of our scientific endeavours are just those which can reasonably prompt us to claim that, where science must come to an end, there are reasonable questions which can still be asked, and reasonable answers which can be given in theistic terms.

And finally, that this conclusion is important is simply a corollary of the fact that it might indeed be true. For if it is true, it does provide a context in which our scientific endeavours can be seen as giving us some understanding of God: and while that conclusion does not give a meaning to life, as if without it our lives were meaningless as they stand, it does provide an additional level of meaning which can be welcomed with all reasonable delight.

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