Our Place in the Cosmos

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The cosmos can seem mysterious. Why are its laws of a kind which permit intelligent life to evolve? Why do its events even fall into patterns which persuade us to talk of 'laws' or of 'causal orderliness'? And why does it exist at all? Why is there something rather than nothing?

I. Fine tuning, multiple universes and divine design

Intelligent life is a product of slow Darwinian evolution, but what permits this to occur? The cosmic period known to us began with a Big Bang. Had the early expansion speed been a trifle slower, perhaps by less than one part in a billion, then gravity would have pulled everything into a Big Crunch very quickly, our universe remaining immensely hot throughout its brief career. An equally minor increase in the expansion speed would soon have resulted in very cold, very dilute gases unable to form any life-giving stars. This is just one way in which the existence of living things can appear to depend on extremely precise fine tuning.

Perhaps this particular way is an illusion. Maybe some fortunate phenomenon, for instance a brief burst of ultra-rapid inflation very early in the Big Bang, made the life-permitting expansion speed more or less inevitable, and perhaps the fortunate phenomenon was itself more or less inevitable instead of standing in need of its own fine tuning. Still, there are many further ways in which our cosmic situation can seem fine tuned for life. For example, it is thought that the two main forces controlling the centre of the atom—the weak nuclear force, that is to say, and the strong nuclear force—had to fall inside very narrow limits if there were to be any long-living, steadily burning stars. The same is true of the strength ratio between gravity and electromagnetism: a divergence from the actual ratio by less than one part in a billion would apparently have made sun-like stars impossible. Next, the existence of chemistry, which is essential to life as we know it, seemingly demanded very precise adjustment of the masses of the neutron, the proton and the electron. And so on, down rather a long list. Well, why?

A possible answer is that these things—expansion speeds at early times, strengths of physical forces, masses of elementary particles

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and various other affairs which seem crucial to whether life stands any chance of evolving—are all factors which differ randomly from one to another of a vast number of huge cosmic regions, otherwise known as 'universes'. [If by the word 'universe' you mean Absolutely Everything then of course there can only be a single universe, yet cosmologists often do not use the word in that sense.] In most of the universes conditions happen not to be tuned in a life-permitting fashion but, self-evidently, living beings can find themselves only where conditions are life-permitting.

That would be a case of the anthropic principle in action. At least as defined by its originator, the Cambridge cosmologist Brandon Carter, the anthropic principle simply reminds us that all observers exist in circumstances which are not utterly hostile to intelligent life. Note that the word 'anthropic' is not intended to mark an interest in human observers in particular. It is intelligent observers in general that Carter has in mind. Spatiotemporal districts, when observers actually live in them, obviously must be ones capable of supporting intelligent life. This Carter called 'the weak anthropic principle'. The entirely similar fact about universes, that any actually including observers must be universes which intelligent life can inhabit, he called 'the strong anthropic principle'. Despite being so clearly correct these principles can be important. They point towards possible *observational selection effects*.

Carter has been widely misunderstood. For a start, it has often been imagined that his distinction between *spatiotemporal districts* on the one hand, *huge cosmic regions or universes* on the other, was a hard and fast distinction so that one could always say firmly whether it was his weak anthropic principle or his strong anthropic principle which applied to observations made at a particular cosmic location. Again, although most people do at least understand that Carter's weak anthropic principle states the undeniable truth that any spatiotemporal districts which contain observers must be intelligent-life-permitting much as a wife must be married, these same people can then be found fancying that Carter's strong anthropic principle asserts something altogether different about our universe: namely that, because of divine action or something similarly dramatic, it had been *utterly fated to be* intelligent-life-permitting or even intelligent-life-*containing*. Yet Carter never intended anything of the kind. He has always accepted that a life-permitting universe might for ever fail to contain observers because life's first appearance, and its subsequent evolution all the way from primitive protoplasmic globule to intelligent living being, could involve immense amounts of sheer luck. And he has never denied that a universe might simply chance to develop life-permitting properties thanks to how various

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cosmic dice just happened to fall during its early moments. Cosmologists typically think that such dice may well have acted when the forces of nature and the various kinds of elementary particle became differentiated early in the Big Bang in a process known as 'symmetry breaking'.

We might appeal to divine action, however, rather than to the combination of multiple universes, chance, and Brandon Carter's anthropic observational selection, when asking why our universe is fine tuned in ways which permit observers to evolve. Compare the case of a man who has caught a fish 19·8623 centimetres in length and who then finds that his fishing apparatus would have rejected anything longer or shorter by even one part in a million. The man ought to apply what I call 'the Merchant's Thumb principle'. Every thumb must be somewhere. Suppose, though, that a thumb covers the single hole in a silk garment somebody is trying to sell to you. Is this to be explained by something beyond mere chance? Probably, for a simple enough explanation springs to mind, an explanation which the thumb's position is fine tuned for suggesting. In the case of the fish, two explanations suggest themselves. The first is that the lake contained millions of fish of different lengths, our man's fishing apparatus then selecting a fish of just the length it could present to his delighted eyes. This is like postulating the existence of many universes and of observational selection in an effort to throw light on the fine tuning of our universe. Alternatively, perhaps some powerful well-wisher has created one or several fish of precisely the kind the apparatus could catch. This corresponds to how theists can react to the fine tuning. God created just the sort of universe in which observers could evolve.

Notice that the need for such explanations does not depend on any estimate of how many universes would be observer-permitting, out of the entire field of possible universes. Claiming that our universe is 'fine tuned for observers', we base our claim on how life's evolution would apparently have been rendered utterly impossible by *comparatively minor* alterations in physical force strengths, elementary particle masses and so forth. There is no need for us to ask whether very great alterations in these affairs would have rendered it fully possible once more, let alone whether physical worlds conforming to very different laws could have been observer-permitting without being in any way fine tuned. Here it can be useful to think of a fly on a wall, surrounded by an empty region. A bullet hits the fly. Two explanations suggest themselves. Perhaps many bullets are hitting the wall or perhaps a marksman fired the bullet. There is no need to ask whether distant areas of the wall, or other quite different walls, are covered with flies so that more or less any bullet striking

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there would have hit one. The important point is that *the local area* contains just the one fly.

As well as examining many claims about fine tuning, my book *Universes*[1] compared the charms of the competing theories (a) that God acted as Fine Tuner, and (b) that there exist many universes, observers being unable to find themselves elsewhere than in those rare universes which permit the evolution of life and intelligence. The many-universes approach was fairly powerful, I argued. Cosmologists have proposed numerous mechanisms for generating universes in huge numbers and great variety. In a cosmos whose size could be anything up to infinite, universes could be gigantic domains which differed greatly in their expansion speeds, in their degrees of turbulence and in many other respects. Alternatively, universes might exist as successive cycles of an oscillating cosmos which repeatedly underwent new Big Bangs followed by Big Crunches. Or they might be regions which had split apart, becoming the separate 'worlds' of many-worlds quantum theory—worlds jostling one another just sufficiently to have persuaded many physicists to talk of 'interacting waves of probability' although in fact it would be realities that were interacting. Or universes could be buds pinched off from earlier universes, or might even spring into existence entirely independently in a way 'costing' little or nothing because the energy tied up in their particles was paid for by their gravitational binding-energy, a quantity that enters physical equations as *negative energy*. Etcetera. A particularly interesting scenario is the one described by Andrei Linde. Linde's eternally existing, chaotically inflating cosmos continually gives birth to new regions which have changed to comparatively slow Big Bang expansion, each large enough to merit the name of 'universe'. Radiation streams inwards from their violently energetic boundaries, yet we live so deep inside our universe that our descendants could long escape being fried. Linde remarks, however, that they might one day need to migrate into other universes.

Physicists have quite a robust theory about why universes all obedient to the same fundamental laws could differ in the strengths of their physical forces and in the masses of their elementary particles. The symmetry breaking I mentioned earlier is typically thought of as something produced by *a scalar field* or by several scalar fields. Possessing intensity but no direction, scalar fields cannot be detected by anything like a compass needle but they interact with particles in ways which give mass to them (or rather to most of them, for photons remain unaffected and therefore massless). Such fields would appear as cosmic regions began to cool. Their intensities could vary from

[1] London and New York: Routledge, 1989; paperback 1996.

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region to region in a fashion which was largely random. The result, as Linde puts it, would be a lunch at which all manner of dishes were available. At least a few of the dishes might then be expected to be life-supporting. This point is applicable not just to Linde's chaotically inflating cosmos, but to almost any other cosmos that includes regions sufficiently huge and sufficiently distinct to be called 'universes'. For instance, the worlds of many-worlds quantum theory might come to vary greatly in their scalar field intensities. As the masses of their elementary particles varied in response to this, so would the effective strengths of their physical forces. After all, when a particle was heavier then a force would find it harder to push around. In addition, the effective range of various forces would depend on the masses of the messenger particles which conveyed them.

While all this is very speculative, it is no more so than much of modern physics. What is more, it encourages quite a few predictions. If we are to view life-permitting force strengths and particle masses as products of chance, products which are anthropically selected for observation by intelligent living beings, then one of our predictions will be that the holy grail of many physicists, a Theory of Everything which dictates every single force strength and particle mass, will in due course be found to be a fiction. We could also predict that some mechanism would be found which allowed force strengths and particle masses, even if they were settled randomly, to have been settled (as we can see that they were) in one and the same fashion right out to our present cosmic horizon. Early ultra-rapid cosmic inflation might supply such a mechanism: the thought is that after such inflation conditions which initially characterized very tiny regions would apply right across gigantic ones. Further, we could predict that some proposed mechanism for generating multiple universes would survive advances in physics.

Belief in divine action can lead to rather different predictions. True enough, God might have chosen to create universes in huge numbers, then relying on chance to throw up a few in which force strengths and particle masses were fine tuned for producing living beings; yet on the other hand God might have preferred to use the kind of Theory of Everything that dictated life-permitting conditions. Certainly, such talk of God's choices and preferences could be highly metaphorical. For the moment, the crucial point is simply that physicists who believe in God and physicists who are atheists can well differ in their expectations. The evidence of life-encouraging fine tuning is now, I think, so strong that any atheistic physicist ought to abandon the dream of an all-dictating theory. From an atheistic viewpoint, multiple universes with randomly varying conditions are what the evidence would seem to show.

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In contrast, atheists and believers in God could agree in declaring that our universe avoids being markedly more friendly, more delicately tuned, than is needed for life and intelligence to be possible. (i) Any atheist who accepts multiple universes and anthropic observational selection has strong grounds for declaring this. If, so to speak, at least seventy out of ninety-nine tossed coins had to fall Heads, else you would not have been there to observe anything, then you should not be much surprised when you saw seventy-three Heads; but do not expect to see eighty-one Heads, let alone ninety-nine. (ii) How about believers in God? Their belief, they could insist, is fully compatible with thinking our universe quite an unfriendly place. Theism does not automatically give us a cosy cosmology.

Theism is, for example, quite compatible with thinking that the human race runs a severe risk of extinction during the next few centuries. Even if wanting the existence of intelligent living beings in large numbers, God could see to this without securing humankind against annihilation. God's eggs need not be all in a single basket. Perhaps God created infinitely many universes. Thus even believers in God might be interested in a 'doomsday argument' which Brandon Carter originated and which he views as a natural application of anthropic reasoning. While those who employ such reasoning may well expect their position in the cosmos to be unusually favourable to living intelligence, they should (as was just now indicated, using the example of the ninety-nine tossed coins) hesitate before thinking of it as much more unusual than was necessary for observers to be able to inhabit it. They should hesitate, for instance, before accepting that their planet was the very first on which an intelligent species evolved, in a universe which would later include many billion such planets. And similarly, Carter argues, you and I should hesitate to accept that we existed in, say, the earliest billionth of a human race destined to colonize its galaxy. This consideration ought to magnify any fears we have for the future of humankind, he reasons. It should move us in the direction of thinking that our species will quite probably be extinct fairly soon—which, in view of the current population explosion, would mean that of all humans who will ever have existed quite a large proportion lived today.

While Carter's doomsday argument is controversial, no simple counterargument can refute it. You cannot dismiss it by saying that probabilities do not apply to temporal positions: that *now is now*, and that the people alive now cannot find themselves at any later time, such as a time when humans had spread right across their galaxy. Consider the following tale. An immensely powerful World Government is in control of the human race's process of galactic colonisation. It has decided irrevocably that the process shall

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continue until a certain date, after which all humans will be exterminated so as to give other evolving species the opportunity to flourish. It is following an unalterable plan according to which some huge number of humans will live in one century, while a number twenty-five times as great would find themselves in a slightly later century, a century in which all those in the earlier one had died. At the end of that later century, the human race would become extinct. Not knowing which centuries the plan specified, but learning that you live in one of them, you ask yourself what reasons you might have for thinking that yours is the later century. Do you say to yourself *that now is now* and that if you happened to be in the earlier of the centuries then you could stand no chance of living in the later one? On those grounds, do you conclude that you might just as well bet that you lived in the earlier century? Of every twenty-six people betting like that, twenty-five would bet incorrectly if the World Government had its way.

Carter, let it be clear, is not proposing anything so simple as that the chances are *twenty-five to one* against our being in the earliest twenty-sixth of all humans who will ever have lived. His argument is merely for increased pessimism in our estimates of how likely it is that humans will soon be extinct. Finding that you in fact lived in the earlier of the two centuries could be some ground for doubting that many more humans would live in the later one, yet if you had started with almost no doubts about this then your confidence ought to remain nearly intact.

Moreover, Carter's doomsday argument works smoothly only against the background of a belief that our universe is fully deterministic so that the number of humans who will ever have lived has already been fixed. What if this belief is abandoned? The argument can continue to act powerfully against great confidence in a long future for humans: confidence that such a future 'is as good as determined'. Suppose, though, that we were already far from confident. Carter's reasoning could then do little to increase our fears, or so I argued in a recent book.[2]

Several physicists have investigated a connection between thoughts of doomsday and the scalar fields which can seem crucial to randomisation of a universe's properties. How might a scalar field have had its intensity settled by mere chance? Perhaps through there having been many local minima of more or less equal depth in

[2] *The End of the World: the science and ethics of human extinction* (London and New York: Routledge, 1996; paperback with new Preface, 1998). See also, e.g., 'Time and the anthropic principle', *Mind* **101,** No. 403 (July, 1992), 521–40, or 'Observer-relative chances and the doomsday argument', *Inquiry* **40**, No. 4 (December, 1997), 427–36.

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that field's potential energy, minima corresponding to different field intensities. It would be as if a ball had rolled off a hilltop, becoming trapped in one of several hollows into which it could have fallen with more or less equal ease. Now, a violent jerk might later push such a ball out of its hollow so that it continued rolling downhill, and the equivalent of such a jerk could perhaps be supplied by humans experimenting at extremely high energies. Matters would at first go awry only inside a tiny bubble, but this would at once inflate at nearly the speed of light, destroying the entire galaxy and then expanding onwards.[3] The energies generally believed to be safe are those which have already been released by colliding cosmic rays, particles which can move so fast that they sometimes pack the punch of rifle bullets. These are extraordinarily high energies yet physicists might one day exceed them unless forcibly restrained. In his *Dreams of a Final Theory*[4] Steven Weinberg suggests that by using powerful laser beams to accelerate particles we might produce collisions which rivalled those not just of rifle bullets, but of small jet aircraft.

II. Ethical requirements, platonism and pantheism

Let us next see whether the reality of God deserves to be taken seriously.

One striking thing about the fine tuning is that a force strength or a particle mass often appears to require accurate tuning *for several reasons at once*. Look at electromagnetism. Electromagnetism seems to require tuning for there to be any clear-cut distinction between matter and radiation; for stars to burn neither too fast nor too slowly for life's requirements; for protons to be stable; for complex chemistry to be possible; for chemical changes not to be extremely sluggish; and for carbon synthesis inside stars (carbon being quite probably crucial to life). Universes all obeying the same fundamental laws could still differ in the strengths of their physical forces, as was explained earlier, and random variations in electromagnetism from universe to universe might then ensure that it took on any particular strength sooner or later. Yet how could they possibly account for the fact that *the same one strength* satisfied many potentially conflicting requirements, each of them a requirement for

[3] This is discussed on pp. 108–22 of *The End of the World*. Consult also J. Ellis, A. Linde and M. Sher, 'Vacuum stability, wormholes, cosmic rays and the cosmological bounds on m_t and m_h', *Physics Letters B* **252**, No. 2 (December 13, 1990); or see pp. 205–7 of a recent book by the Astronomer Royal (M. Rees, *Before the Beginning*, London: Simon and Schuster, 1998).

[4] London: Hutchinson, 1993; see especially pp. 187–8.

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impressively accurate tuning? It can be argued that only very precise selection of the fundamental laws would allow for this; but variations of fundamental law from universe to universe, variations on which Brandon Carter's anthropic observational selection could operate, may be hard to swallow. Respect for Induction does not prevent our accepting variation between *derived laws*, perhaps ones specifying particular values of force strengths etc., but here we are instead asked to accept variation between laws that are basic. Might it not be preferable to believe in a divine Law Chooser?

Look, too, at the rules of quantum physics. They stop electrons from spiralling into atomic nuclei. They allow apparently dissipated wave-energy to be released in concentrated bursts so that it can work usefully, for instance in the case of photosynthesis. As was shown by Richard Feynman, they explain why particles do not wander all over the place. They also guarantee that atoms come in standardized types, making the genetic code possible. Yet their strangeness could encourage us to seek a divine explanation for them.

Similarly with the laws of special relativity. Regardless of whether a force such as electromagnetism is acting at right angles to a system's direction of travel relative to other systems, its effect is invariable thanks to these laws. They can be thought rather strange laws. Who would have dreamt that light would move away from us at the same measured speed no matter how hard we had accelerated in pursuit of it? Yet without such laws to keep forces acting invariably, genetic codes could seem unworkable. Might this be an instance of divine ingenuity?

There could be thought to be a further problem in the fact that our universe obeys anything worth calling 'physical laws'. Consider any universe which has conformed to such laws until a particular moment. Out of the logically possible ways in which it might next develop, would not all but a tiny proportion lead to obvious failures of the laws? This point can be judged disastrous to modal realism, the theory that all logically possible universes exist. Should not a modal realist expect everything to become disorderly at the very next instant? Theists, in contrast, might rely on God to keep the world behaving in an orderly manner.

Finally, there is something many philosophers have viewed as a mystery: the sheer fact that the world is not utterly empty. Leibniz held that an absence of all things could well appear 'simplest and easiest'? Might theism help us in this area?

Notoriously, many other philosophers have denied that there is a mystery here, and it seems impossible to prove them wrong.[5] Again,

[5] I discuss this in 'Efforts to explain all existence', *Mind* **87**, No. 346 (April, 1978), 181–94.

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asking why the world obeys any physical laws at all, or why its actual laws are those of relativity theory and quantum physics, strikes many philosophers as silly. One suspects, though, that their chief reason for believing that these affairs need no explanation is that they think no explanation could possibly be had. How could anything explain why there is a cosmos rather than a blank, an absence of all existents? Suppose someone answered that God created the cosmos. Would not God, in turn, be something more than a blank? And if the cosmic orderliness is to be explained as a product of God's orderly mind, then why does God have such a mind, granted that orderliness is supposed to need explanation, and why are God's creative desires followed in an orderly way by the jumping into being of the things which are desired? What is God, if not an inexplicably existing, inexplicably powerful magician?

We might react to such questions by developing a platonic or neoplatonic creation story. Here I shall speed across rather a wide field, asking anyone who is interested to look for various details elsewhere.[6]

To begin with, anybody hoping to explain all existing things must seek an explanation among platonic objects, which are *realities* without straightforwardly *existing*: objects like the number two. Admittedly, some would prefer to say that the number two did exist but was not a reality. Let us not quarrel over that. When Sherlock Holmes said Dr Watson saw but observed nothing, he might equally well have declared that Watson observed but saw nothing. It is the distinction that is important, not the words. For modern followers of Plato, the crucial point is that some facts concerning possibilities can be facts *no matter what*. Two and two make four because if there ever were to be two sets of two things, then there would be four things. The ethical truth, assuming that it is one, that any world consisting simply of people in torment would possess negative intrinsic value, is a truth which would hold even if there existed no people to evaluate things, no stars, no rivers, no atoms, no electrons—nothing. It would be true of a situation empty of all existing things, a blank, that this blank was ethically superior to any world of people in torment which might replace it. In the blank there would be nobody to have a duty regarding any possible world of people in torment, such as the duty to keep it out of existence, but this merely goes to show that ethical facts do not all of them depend on people having duties. Now, some such facts state that if this or that possible thing stopped being

[6] See especially *Value and Existence* (Oxford: Basil Blackwell, 1979); 'The world's necessary existence', *International Journal for Philosophy of Religion* **11,** No. 4 (Winter 1980), 207–24; and chapter 8 of *Universes* (see note #1 above).

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a mere possibility and took on actual existence then it would enjoy an existence which was ethically needful—or, to put the matter differently, an existence which fulfilled or answered an ethical requirement.

Intrinsic value, on this view, is not a quality added to other qualities like a coat of paint. It is instead a status which some things possess through having the qualities which make them the things which they are: the status of *being ethically required or marked out for existence*. Value can be requiredness in a way which is not trivial. One is not saying that the existence of good things is required *if* the cosmos is to be at all good, just as the existence of red ones is required for there to be any redness. As Kant saw, ethical requirements are not utterly hypothetical. Whether individuals ought to be listening to music may be relative to whether they are tone deaf or whether their houses are in flames, but it is not in every way relative.

Saying that something's existence is ethically required is definitely different from declaring that, by heaven, it really does exist. The ideas of *ethical requirement* and of *creatively effective requirement* are two ideas, not one. A platonic or neoplatonic suggestion, none the less, is that ethical requirements are in the right category for perhaps acting creatively: the category of requirements—absolutely real and authoritative requirements—for the existence of this or that. Somewhat as a cow might be brown although the idea of a cow is different from that of a brown cow, so might some ethical requirement (or set of compatible ethical requirements) be creatively sufficient. For instance, a divine mind might exist eternally because its existence had *an ethical requiredness which was creatively effective.* It might be marked out for existence ethically and with actual success. There could seem to be no actual contradiction in the idea that some ethical requirement *itself* and *as such*, unaided by anybody's actions, might be responsible for the existence of the thing which was required.

At least, there could seem to be no contradiction so long as these words were interpreted suitably. Here it could be useful to bear in mind that although a cow can be brown *in itself*, as being an ordinary brown cow instead of a white cow hidden under brown paint, and although one can then say that it is the cow *as such* that is brown, which is something you might not want to say of a white cow that had been painted, there remains a clear enough sense in which the statement 'This cow, as such, is female' is right (since being female enters into the definition of being a cow) whereas 'This cow, as such, is brown' is not. If there is such a reality as *a creative ethical requirement* it will still be divisible in thought into an ethical requirement and a creative requirement, there then being

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nothing definitely wrong in choosing to say that the ethical requirement was not 'as such' or 'in itself' creative; for after all, even had it failed to be creative it would have remained just as real, so far as mere logic was concerned, its reality being no logical guarantee of its creativity. Even if a divine mind did have creative ethical requiredness, this mind existing eternally *because* that was ethically needful, its ethical requiredness still could not involve its existence *as a matter of straightforwardly logical necessity*. The case would be nothing like that of being four animals because of being two plus two cows, or being male because of being a bull.

We can use the idea of *synthetic necessities* in this connection, though. Synthetic necessities are defined as necessities quite as absolute as any logical necessities are; they are matters which simply could not be otherwise, whether or not humans are equipped to recognize them; but they are not guaranteed by the very definitions of words or other symbols, which is how logical necessities are guaranteed, at least on a way of understanding them which is fairly standard. There are some reasonably clear instances of affairs which are synthetically necessary, I suggest. Take the case of three after-images produced by bright lights. The first is red, the second orange, and the third yellow. The red after-image is, in colour, necessarily more like the orange after-image than like the yellow one, yet this is not a product simply of definitions. Cavemen who never had a language could recognize such differing degrees of similarity. It is not through anyone's defining orange with the words 'reddish yellow' that the yellow after-image is more colour-similar to the orange one than to the red. Rather, it is colour similarities like this which make 'reddish yellow' another way of saying 'orange'.

Unfortunately, as soon as people start discussing ethical requirements—long before anybody speculates that some ethical requirements might perhaps act creatively—it becomes plain that they are discussing affairs far more controversial than any colour similarities. While we might sympathize with a man who said he 'knew for sure' that torturing people for fun was bad, we could surely also sympathize with any philosopher who, using stronger criteria of knowing for sure, claimed that it was not known for sure that anything was ever better than anything else. In fact, I sometimes get the impression that many highly intelligent philosophers may consider *that nothing ever is* really better than anything else, in the sense of 'really better' which is favoured by ordinary thought and ordinary language. In two superb books of his, *Ethics: Inventing Right and Wrong*[7] and *The Miracle of Theism*[8], J. L. Mackie reported

[7] Harmondsworth: Penguin Books, 1977.

[8] Oxford: Clarendon Press, 1982. Chapter 13, which is mainly a reaction

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that he himself believed that nothing was really better than anything else, in that sense, which he had the courage to identify not just as the ordinary sense but as the philosophically traditional sense as well.

Mackie described goodness in the ordinary sense as too 'queer'. He was at a loss to understand its allegedly necessary linkage to normal properties. Logical linkage would not do the trick, he held, for one could not deduce a thing's intrinsic value—as ordinarily conceived—from any non-question-begging description of that thing. Curiously, however, he combined this with two further claims. The first was that intrinsic value as ordinarily conceived was something which involved no contradiction; although queer, it was not a logical impossibility. The second was that such value could not be added to things or taken away from them, not even by divine decrees. In effect: either it *just was* possessed by various things, and absolutely could not fail to be possessed by them no matter what a divine being might wish, or else it *just was not* and absolutely could not be given to them by divine decrees or by anything. Which, I take it, is to say that, if present, then it would be present with a necessity which although not a straightforwardly logical necessity was still every bit as absolute as any logical necessity. Its presence would be something synthetically necessary. Likewise its absence, if it were indeed absent, would be a synthetically necessary absence. As a matter of synthetic necessity, the kind of intrinsic value in which people ordinarily believe would either be built into situations of certain kinds, or walled out of them. We were stuck with synthetic necessities, one way or the other.

The curious thing is that Mackie seems to have considered that the synthetically necessary *presence* of such value in a state of affairs would be queer whereas its synthetically necessary absence would be altogether to be expected. He appears to have found nothing odd in how his theory denied that it could be, in what the theory itself said was the ordinary and philosophically traditional sense of the word 'better', better to be feeding a hungry child than to be kicking one—although he would have hurried to behave in the first manner, feeling fury at anyone who behaved in the second.

Mackie accepted that the ordinary and philosophically traditional idea of a situation's intrinsic value was the idea of its *having an existence ethically required in a platonic way,* a way which was absolute instead of being merely a reflection of social pressures. And, given that he detected no actual contradiction in this idea,

to *Value and Existence*, is discussed in my 'Mackie on neoplatonism's "replacement for God"', *Religious Studies* **22**, No. 3 (September, 1986), 325–42.

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although finding it too queer for his taste, it is no great surprise that he confessed in chapter thirteen of *The Miracle of Theism* that he detected no contradiction, either, in the platonic or neoplatonic theory that an ethical requirement for a thing to exist might meet with creative success. So far as mere logic was concerned, it seemed to him that some possibilities might indeed, just through being the possibilities which they were and without help from any powerful person, be *marked out for existence ethically and with creative effect*, as argued in a platonic or neoplatonic book of mine, *Value and Existence*. They might be things which firmly had to exist, whether or not we could know this.

Bear in mind that it could be wrong to keep asking for some mechanism which gave to an ethical requirement its alleged creative influence: some combination, perhaps, of pistons pushing or magnets tugging or magicians waving wands or exerting willpower so as to require with true success that the ethically required object should actually exist. This could be like asking for a mechanism to explain how a yellow after-image managed to be nearer in colour to an orange one than to a red, or why being in pain and hating it was intrinsically worse than hearing music and loving it. It could be a failure to appreciate how odd it might be to imagine that, say, a magician's acts of will could effectively require this or that, while simultaneously insisting that ethical requirements could never do so, not even in the case of the ethically required existence of a supremely perfect divine mind.

It could also be a failure to grasp that in this area we are saddled with a synthetic necessity one way or the other: either the synthetic necessity that creative effectiveness does characterize one or more ethical requirements, or else the synthetic necessity that it does not. It could not, I think, just so chance that some platonic reality of ethical requirement had creative power, or alternatively that it was powerless: being platonically required with direct creative effect seems to me the very opposite of chancing to exist. Yet Mackie would seem right that neither the power nor the powerlessness would be present with a necessity provable by logicians.

The power and the powerlessness would be equally simple, I suggest. The failure of The Platonic Good to act creatively would be in no way *less intricate* than its success. It would not be 'straightforward' if an ethical requirement for a divine mind to exist remained unfulfilled, and 'unstraightforward' if it were fulfilled. The synthetic necessity which we are stuck with is just as uncomplicated, no matter which form it takes.

Regrettably, I have sometimes written as if it were fairly certain that what would have creative ethical requiredness, if anything had

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it, would be the entire realm of existing things rather than an omnipotent individual in particular. Trying to show that I was being really rather conventional, I may have insisted too much on the platonic or neoplatonic tradition among theologians, who have often flatly denied that there exists a divine person who gives rise to everything else; they have instead suggested that the word 'God' should be taken to stand for the platonic ground of the world's existence, a ground which is ethical in character. I failed to do enough to publicize A. C. Ewing's theory in chapter 7 of his *Value and Reality*[9] that God is a creator whose own existence is due to the fact that this is ethically demanded. The upshot was that Mackie and others placed me firmly in the camp of those who do not believe in God-as-a-divine-mind. This is something I now need to combat.

The difficulty is that I should like my creation story to do more than simply avoid logical contradiction. It would be nice for it to have some whiff of plausibility. It would not matter that it was speculative since the obvious competitor, the theory that the cosmos just happens to exist, would be in the same boat, and there does not appear to be much competition coming from elsewhere. How many theories stand any chance of answering why there is some world rather than none?—some reality, that is to say, which is more than just a realm of platonic truths. Surely such theories are not as common as pebbles on the beach. It is not obvious that there would be even one viable theory in this area if the notion of a creative ethical requirement had to be abandoned. But on the other hand, as Derek Parfit has commented recently, it is not clear that we can find immediate employment for that notion after actually examining our world. The idea of a world's having *creative ethical requiredness* would seem to contain no actual contradiction, and Parfit helped to draw Mackie's attention to this. What Parfit thinks, nevertheless, is that the traditional problem of evil could ruin this idea.[10] Some imaginable world might be explicable in terms of its creative ethical requiredness, but our world probably is not. Our world includes too much unpleasantness.

A standard reply to the problem of evil runs as follows. Ethical requirements are unlike logical necessities in two ways. First, ethical requirements come in various strengths: some goods are more important than others. Secondly, ethical requirements can often

[9] London: Allen and Unwin, 1973.

[10] 'Why Anything? Why This?', a two-part article in *London Review of Books*: 27 January 1998, 24–7, and 5 February 1998, 22–5. Parfit suggests that other factors, for instance *simplicity* or *maximality*, might be alternatives to *goodness* in the role of selecting what would actually exist from among all the various possibilities.

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conflict with one another. As Leibniz saw, even a best possible world might in consequence include many things of a sort we should try to prevent. A world's causal orderliness could be essential to its having more value than an opium dream, yet causal orderliness is not at all obviously compatible with the absence of all such evils as destruction caused by earthquakes. [Compare how a causally ordered world in which a trillion coins were tossed might have to include some coins which fell Heads.] Furthermore, human freedom—plausibly viewed as a great good, i.e., as something with a very important degree of ethical requiredness—could be incompatible with guarantees that every human would always act well. It might often be your duty to take the ethical requirement for your act to be free and bring it into line with another ethical requirement, for instance to feed a hungry child, *by freely choosing to act well*. Now, you might instead decide to act evilly, bringing the two requirements into very unfortunate conflict. Leibniz's world had to be fully deterministic so that it could be guaranteed to follow the best possible course, yet even a fully deterministic world could perhaps include free actions. It is surprising how many philosophers miss this point during their attacks on Leibniz, next striding into their ethics classes to teach that free human decision-making is fully compatible with determinism since it is just a complex variant on decision-making inside computers.

Let it be added that Leibniz's best possible world was, he wrote, 'the whole temporal succession of existing things', 'the whole sequence of things to infinity'. Such a world could include multiple universes of the kind which cosmologists are now often happy to accept. If the universes were sufficiently numerous, immensely many of them could be homes for living intelligence. Leibnizians would not be forced to think ours the best of the lot.

We might also try to limit the size of the problem of evil by arguing that death does not involve being entirely wiped out of existence. Perhaps a heavenly after-life awaits us or perhaps our world has, as Einstein wrote, 'a four-dimensional existence' so that the way in which people of the eighteenth century are absent from the present day is strongly analogous to that in which people in London are absent from Mexico City—which is something Londoners quite often find pleasant.

Again, we might perhaps follow Leibniz in accepting the privation theory of evil: the theory that no conscious states, not even ones of extreme pain, are actually *worse than nothing* although many of them ought to be avoided because alternatives are far better. While many people find the privation theory a real shock, I have very little confidence in my own intuitions in this area: they are so evidently

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the product of evolutionary and social pressures. For whatever it is worth, though, let me report that the privation theory comes as much less of a shock to me when it is applied to the case of physical torment rather than to that of mental pain, perhaps at the death of a loved one. Yet some would say instead that it was physical pain that was obviously intrinsically evil whereas sorrow at a death was an intrinsically fine appreciation of the beauty of the dead person's life. Now, how could anyone be sure who was right? Conceivably the privation theory is correct, no matter to what kinds of pain it is applied.

A more promising approach, all the same, might be to accept monism as defended by Spinoza, Hegel, and British Hegelians like F. H. Bradley. Here the idea is that things we tend to think of as *separate existents* in fact stand to our universe somewhat as the length of a lake stands to the lake, or as a grin stands to the grinner, or as an infinitely thin imaginary cross-section of a rock stands to the rock. According to monists, not one of our universe's elements is logically capable of existing in isolation. Now, if monism is correct then it may follow that situations which would be *strictly negative in value*, each of them worse than a blank, if only they could exist each on its own, could yet make worthwhile contributions to the overall pattern of reality. Although forming a whole which was unified in its very existence, a monistic universe could carry a highly complicated pattern. Nobody has proved that complicated situations must be conglomerations of objects each of them totally simple, and each with a being fully distinct from that of the others. In fact, many of my well unified conscious states seem to tell me that this just is not true. Also, phenomena known to quantum theorists appear to confirm that it is not true. [What is the chance that two bosons in the same quantum state will be found in different halves of a box? The right answer, 'Only one third,' suggests that the bosons are not sufficiently separate in their existence for either of them to be firmly on the left and not on the right. In a sense, a boson can be in two places at once.] Now, perhaps a monistic universe could be better thanks to how its highly complicated pattern had the good of *structural completeness* instead of being ragged like a jigsaw-puzzle scene from which various pieces had been left out.

There remains an apparently gigantic difficulty. If The Platonic Good truly is creatively powerful, then why does reality consist of anything other than an infinite series of minds each possessing infinite knowledge, which is what the divine mind is traditionally conceived as possessing? For is not such knowledge typically presented as supremely worth having?

A traditional answer is that there can be but a single divine mind.

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Once the realm of existing things included such a mind, its value could be increased only by the creation of things which were inferior. One might then get a Great Chain of Being stretching all the way down to things which were only just better than nothing. Multiple exact copies of a divine mind or of anything else would be banned by the principle of Identity of Indiscernibles. This is the principle that supposedly prevents there being more than one angel at the very tip of an infinitely sharp pin, granted that angels are (for the purposes of this thought-experiment) beings who have no size and who are identical in all properties apart from spatial position. Take two angels and bring them to the same one point. Identity of Indiscernibles says they would have to collapse into a single angel.

It strikes me, however, that Identity of Indiscernibles probably cannot rescue a platonic or neoplatonic creation story, for two reasons. (a) The first is that Identity of Indiscernibles can well be thought wrong. Imagine two universes which differ in one respect alone: in the first there is an electron in a particular position while in the other the equivalent electron is differently placed by a millionth of a centimetre. Suppose also that these universes are developing in a time that flows in an absolute way: not the sort of time in which Einstein believed, but a time in which the situations that we call 'existing in the past' have in fact lost their existence absolutely.[11] What if the two universes seemed on the point of becoming identical in their every existing property, through one of the electrons moving slightly? Would one of those universes have to vanish? That strikes me as altogether too strange. Why should not they remain different 'in number'? Why could not there continue to be two of them? (b) Yet even if Identity of Indiscernibles were right, there could seem to be a second, fatal problem. What is to stop there being infinitely many minds of which each knows infinitely much, although each—with the exception of one of them, supreme in its goodness—remains ignorant of just one trivial fact which is known to all the others? Identity of Indiscernibles would not be violated here. So why, if The Platonic Good is in charge, do there exist any minds which are inferior to infinitely desirable, infinitely knowledgeable ones? Why is there anything in existence apart from divine thinking, repeated inside infinitely many separately existing minds which, if they are indeed forced to differ, do so only infinitesimally? [We might imagine one of the minds as knowing absolutely every fact or at least, if this is different, every fact that was worth knowing, while each of the others knew one less fact than

[11] Philosophers call the competing theories of time 'the A-theory' and 'the B-theory'. I describe them at greater length in 'The Value of Time', *American Philosophical Quarterly* **13**, No. 2 (April, 1976), 109–21.

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it did. Bear in mind that *infinity minus one* equals *infinity* according to mathematicians, so that any mind which was ignorant of one fact could still know infinitely many things.]

Despite Robert Nozick's fascinating writings,[12] people sometimes consider that philosophers of today simply ought not to think about scenarios as strange as this. However, any philosopher who wants to take a platonic or neoplatonic creation story seriously must not be allowed to protest that some scenarios are too bizarre to think about, and so should not form the basis of objections to that story. Perhaps forty per cent of the time I feel more attracted to the nowadays ordinary belief that the world just happens to exist. But when in a mood for treating the world as created and ordered by The Platonic Good, I must not be allowed to dodge the objection that reality should, on this way of viewing it, consist simply of infinitely many minds, each infinitely knowledgeable, *since this would be best*. Why would not that be fatal to any belief in the creative ethical requiredness of the cosmos?

The strongest reply available, I suspect, involves considering what a mind would be like if it knew all the things which were at all worth knowing. Among many other things, such a mind would know the structures of huge numbers of possible physical universes, I submit. But as well as knowing these universes in all their physical detail, it could be better for knowing how it would feel to be various living, conscious beings in these universes. It could, for instance, know just what it would be like to be each particular one of the bats in a universe like ours, assuming that bats are conscious beings so that, as Thomas Nagel would put it, there is for each bat 'something it is like to be it'.

Any such mind would also, I rather hope, be better for knowing precisely what it would be like to be this or that human being. But then, Spinoza can be thought to have shown, none of our evidence would have any force against the theory that our mental lives are simply elements in such a mind's thinking. In Spinoza's world-picture as I understand it, we have God, a mind unified in its existence and knowing infinitely much. God's eternal thoughts include ones about precisely how it would feel to be people with various characteristics. And, crucially, God could not know *precisely how it would feel to be someone such as me* in any region of the divine thoughts which was flooded with infinite knowledge. God could know it only if the divine thinking *included areas of ignorance*, regions imbued with consciousness of having strictly limited

[12] See, in particular, his *Philosophical Explanations* (Cambridge, Mass.: Harvard University Press, 1981) and *The Examined Life* (New York: Simon and Schuster, 1990).

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knowledge. According to Spinoza, you and I are such regions. In thinking—in full detail—of how it would feel to be people with particular characteristics, God is not thinking about possibilities which remain mere possibilities. God's thinking of how it would feel to be people just like us, *is us*.

If we were elements in a divine mind's thinking, would the conclusion be forced that this mind alone ever thought things, experienced things and did things? Not at all. It might equally well be reasoned that if atoms obeying the laws of physics are what we are, then only atoms ever do things and only the laws of physics ever decide things; poor humans never do. Philosophers rightly treat that line of reasoning as faulty.

It would be equally faulty to reason that, if we theorized that a divine mind's complexly structured thinking about atoms was what atoms were, then we would believe that there really were no atoms, or that atoms had none of the structures which physicists describe. Pantheism is not hostile to physics.[13]

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[13] Pantheism is defended in my 'The Divine Mind', *Philosophy Supplementary Volume* **47**, (2000), 73–89, Anthony O'Hear (ed.).

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