

Scientific Understanding & the Point of the Universe

For the theist, the purpose for which created persons exist may only be fully realized outside this physical universe, even if it is essential to them to begin their existence in this universe.

MOST RELIGIOUS BELIEVERS think that there is a God, a supreme being who created the universe, and whose existence does not depend upon that of the universe. Furthermore, in being a creator, God is thought of as free, conscious and active, as intentionally bringing about the universe for some consciously entertained reason. This means that such believers are committed against hard-line materialism. They are committed to the coherence of the idea of a non-embodied consciousness, which can formulate a purpose and implement it by creating a material universe.

Theists do not think that the universe somehow has a purpose inherent in itself. They think that there is a creator God, who exists independently of the universe, and who can create it for a purpose. God, for most believers, has knowledge of everything that is possible and actual. God is able to bring about, to make actual, sets of possible states. So God has knowledge and will. The primary object of God's knowledge and will is said by most classical theologians to be

the divine being itself—as Aristotle put it, God's being consists in a “thinking upon thinking”. God is aware of and wills or affirms the divine being as it exists in its own proper perfection. So knowledge and will do not, as such, depend upon some material substratum for their existence. Indeed, they are ontologically prior to all material existences. The primary form of being is something like what we know as non-material conscious agency. That is a basic postulate of theism, and it seems a perfectly intelligible one.

If God is already perfect in self-knowing and self-willing, why should God create any universe at all? For most theists God has the ability to actualize states which are not states of the divine being itself, and indeed to actualize beings like God, made in the divine image, insofar as they have knowledge and creative will, naturally to a limited degree. The reason God should actualize such beings is normally thought to be that it is good to do so. Such created beings can enjoy something of the enjoyment that God derives from knowing and willing, and so they increase the number of beings who enjoy, which is

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good. Perhaps, too, God can enjoy different sorts of actualities by cooperating and sharing experiences with such created personal beings. On some Christian interpretations, it is part of the divine nature to be essentially loving, which involves some form of relationship to other persons, and therefore some creation of such persons. Whether or not that is so, created persons are in the Jewish and Christian traditions said to be like God in having knowledge and will, though their knowing and willing is limited in a way that God's is not.

One implication of this is that if divine awareness and agency is non-material, created beings with awareness and agency are likely to possess as the most important part of their natures a non-material component. This component will be, as it is in God, a subject of awareness and agency, a subject which is non-material in that it does not essentially depend on the existence of particular forms of matter for its existence and functioning. This seems to be a straightforward and natural inference, but it is not of course a strict implication of the existence of God. What is a strict implication is that, for a theist, the primary form of knowledge and will, from which all other forms derive, is a non-material form.

Another respect in which theism is committed to a non-materialist view is that for a theist the primary sense of "identity" is not of continuous existence in space or time—a sense which does normally apply to physical objects in general. In God identity seems to be given by two main factors, a unity of experience by which all objects of knowledge are members of the same consciousness, and a continuous agency by which many things are brought about by the same causal agent. God is a being such that everything that can possibly be known by one being is a conscious element of the divine experience, and everything that exists is an effect of the divine agency, either directly or indirectly. One might say that divine identity is given by a (necessary) all-encompassing unity of experience and an equally all-encompassing conscious agency. God is whatever it is which experiences and causes everything other than itself. It would seem, by

analogy, that the identity of finite persons would primarily consist in the extent to which there was a unity of experience, of co-conscious elements, and a unity of intentional agency throughout various causal chains of events. Such unities would naturally not be all-encompassing, and they might be fragmented or restricted in various ways. But one might expect to find personal identity, not primarily in the continuity of some physical body, but in unities of experience and continuities of intentional agency. One might incline to say that whatever has a conscious unity of experience and a continuity of intentional agency will so far be a person, created in the image of God.

This does not show that finite persons are immaterial beings. It does, I think, show that theists have strong reason to think that material embodiment is not essential to finite personal existence. Insofar as persons are truly created in the image of God, they are likely to be such that it is not absolutely essential to their existence that they are embodied in particular spatio-temporally continuous forms. Their very existence and continued identity as persons does not essentially depend upon their retaining some particular continuous form of embodiment. This suggests that they could survive the death of their particular bodies, even if it is proper to them to have some form of embodiment. For the theist, it must be an important consideration that the purpose for which created persons exist may only be fully realized outside this physical universe, even if it is essential to them to begin their existence in this universe. In other words, the universe may have a purpose—to bring about the existence of created persons of a particular embodied sort, perhaps—but that purpose may point beyond itself to a greater goal, to be realized by persons only beyond the physical universe. Insofar as Christians believe the purpose of God for humans to be participation in eternal life, they precisely do believe this. All I am suggesting is that such a possibility seems to be implicit in the basic hypothesis of theism, and it will plainly affect any assessment of the sort of purpose this physical universe in itself has. The Christian will expect such a purpose to be incomplete or only

partially exemplified, yet to point towards a fuller completion in a natural way.

It is not, of course, in dispute that human beings are embodied. They are physical organisms, animals with 46 chromosomes and a particular genome, composed of quarks and leptons, like everything else in this universe. It may be asked why that should be so. One possibility is that human agents are emergent parts of a developing cosmos, which generates within itself creative communities of conscious agents. One intelligible purpose for creating a universe like this could be to generate relatively autonomous materially embodied agents which come to understand their own structure and to direct their own future, by the co-operative action of communities of personal beings which are generated within the cosmos from its own inherent potentialities.

In the received scenario of modern cosmology, this universe began in a primal state of infinite energy and mass, exploding, expanding and cooling to produce successively more variegated and complex forms of matter or energy. The received model does not think in terms of the actions of a personal God. Instead, it postulates a set of supremely simple and beautiful general laws which operate in a quasi-reductive manner to produce sets of physical states. The model has become so familiar that its breathtaking intellectual audacity may be missed. Why should there be one set of simple laws, which can be understood only by sophisticated mathematical minds? In what sense are such laws supposed to exist, even before there is any complex material universe? How can one know that they will govern every physical event without exception, throughout the whole universe in every space and at every time?

The model is deeply Platonic, positing that beneath the space-time world of human experience there is a deeper, more beautiful and elegant reality, knowable only by intellect, which is the hidden causal basis of the apparent world. This is just about as far from common sense empiricism as one could get. It presents a view of experienced

reality as causally dependent upon a realm of intellectual principles of supreme simplicity and beauty, of utter generality and universal scope, wholly determining all events in accordance with its own general laws. It would not be absurd to see this underlying reality as something analogous to a cosmic mind, though one which always acts in terms of general principles, and never adjusts the system to realize particular purposes, or enters into personal relationships with parts of the cosmos. It is a pure Intellect, without moral purpose—though it does possess at least one supreme value, that of intellectual beauty and rationality.

A good reason for not calling this reality “God” is that it does not have knowledge, in the sense of a conscious assent to true propositions, and it does not have will, in the sense of a purpose which it seeks to realize. There is a structure of laws, which operates in accordance with some inner necessity to produce the universe. So one may feel wonder at its intricacy and reverence before its beauty. But it will remain like a beautiful work of art rather than like a conscious personal being.

A theist will certainly recognize some important features of classical notions of God in this neo-Platonic concept. The idea that there is a first causal principle of being which has supreme beauty and wisdom, which in some sense exists by necessity, which is not itself composed of matter but upon which all the material complexity of the cosmos depends, is a fundamental part of the idea of God developed by Maimonides and Aquinas in the twelfth and thirteenth centuries. It is a far cry from the reductionist materialism of some popular writings on science. As Bernard d’Espagnat says, “Quantum mechanics...should help to dispel the illusion that a naive corpuscular picture can be elevated to an authentic description of that which truly is” (*Reality and the Physicist*, Cambridge University Press, 1989, p. 195).

Modern cosmologists may say that they are not speaking of some being beyond the universe, but of the universe itself, in its deepest

structure. This, however, may not be the absolute difference from classical theism that it sometimes seems to be. If the deep structure of the cosmos is intelligible beauty, this is not entirely remote from Thomas Aquinas' definition of God as "*esse suum subsistens*", or the principle of self-existent Being. Modern cosmology seems to postulate a non-material aspect of reality which at least bears close analogies to some central features of classical notions of God. It often lacks, or denies, the idea of a separately existing conscious being with particular purposes. But followers of Aquinas, quite orthodox theists, as well as followers of Tillich, who was more orthodox in this respect than is always realized, are also often found to deny that God is "a being". It seems plain, nevertheless, that the concept of "purpose" is a crucial point of tension between classical theism and the neo-Platonic model of cosmology. Steven Weinberg says, "We shall find beauty in the final laws of nature, [but] we will find no special status for life or intelligence. *A fortiori*, we will find no standards of value or morality" (*Dreams of a Final Theory*, Vintage, London, 1993, p. 200). In a phrase of memorable clarity and bluntness, he also said, in *The First Three Minutes*, that "the more the universe seems comprehensible, the more it seems pointless," and he repeats this thought with apparent approval in *Dreams*.

I think there is a paradox in the very statement of these thoughts, and it is as follows. If you ask what the greatest values of human life are, what things are really worth valuing for their own sakes, many people (and certainly Steven Weinberg) would say: beauty and truth. If we can learn to appreciate beautiful things, then we can find great happiness and fulfillment in contemplating and perhaps in creating such things. If we can learn to understand more about the world we live in, our lives can feel greatly enriched. Indeed, one recipe for a happy life is to learn to create and appreciate beauty, and to understand more about why things are the way they are. So beauty and comprehensibility are two of the greatest values known to human beings.

Steven Weinberg explicitly says that there is beauty in the laws of

nature, and that the universe does seem to be comprehensible. It follows that the universe does exhibit two of the greatest values we can think of, and indeed it does so to a remarkably high degree. The paradox is to say that the universe exhibits these great values to a high degree, and at the same time say that the universe has no value, or is pointless. It is almost a self-contradiction. It would be extremely odd if I played you a Bach fugue, and said, "Of course it is very beautiful, and structured with supreme rationality, but it is also valueless and pointless." You would, I hope, quite rightly reply, "But its beauty and structure is the point. What other point would one want?"

For something to have a point is for it to be valuable for its own sake, or at least to lead to some such values. For something to have value is for it to be considered a worth-while object of the attention and interest of a rational, intelligent being. So of course a Bach fugue has both value and point, even if it does not lead anywhere. It just exists for its own sake, and a good thing too. Could we not say the same about the universe, if it really does exhibit great beauty and rationality?

As a matter of fact it is precisely the amazing success of science in the twentieth century which shows that there is beauty underlying the apparent ugliness of much of human existence, and that nature is much more intelligible than we might have thought. It is science which brings out the beauty and comprehensibility of the universe, which are often hidden to the naked eye. It is therefore science which shows that the universe does have value and point, even if it does not lead anywhere (where would it be leading, anyway?). Its sheer existence, as a beautiful and comprehensible reality, is its value and point. So it is very paradoxical for Steven Weinberg to say that a beautiful and comprehensible universe is pointless. It is almost as paradoxical for him to say that it gives "no special status to life or intelligence." For all the beauty and intelligibility of the universe would be unnoticed and unappreciated if there were no intelligence, and there would be no intelligence if there was no life. We might even say that

the beauty and intelligibility of the universe would be without actually realized value unless they were noticed and appreciated by some intelligence or other. The universe would no doubt be valuable in a sort of hypothetical sense, since “value” is the property of being a worthwhile object of the attention of an intelligent being, and the universe could possess that property even if there were no actual intelligent beings. But the actual state which is of value is the appreciating of beauty and truth. It would again be rather odd to say that the universe was of supreme value, even though there never existed an actual state which was supremely worthwhile. There is a strong link between value and intelligence, in that the greatest values require intelligence to appreciate them. Actual values, then, consist not just in the existence of beautiful and intelligible things, but in states of apprehending and appreciating their beauty or intelligibility, that is, in states of some intelligent minds.

It was in accordance with this principle that Aristotle (in *Metaphysics Lambda*) defined God, the most perfect conceivable being, as a being which rested complete in the blissful appreciation of its own supreme beauty and intelligibility. Such a being, for Aristotle, would be “good”, in realizing the most desirable state of existence possible. If it was possible to share in some part of the divine self-contemplation, to contemplate the being of God in what has been called “the beatific vision,” that would be the supreme good of intelligent creatures.

Whether or not there is such a Supreme Good and the possibility of contemplating it, one can see that it would be one of the greatest possible goods for intelligent beings to contemplate beauty and intelligibility, as it is found in the cosmos. There is a link here, then, between intelligence, value and morality. It takes an intelligent being to actualize states of value. Since such an actualization is a great good, and morality is concerned with actualizing good states, it must be the case that a central concern of morality must be with making possible the actualization of states of appreciating beauty and truth.

There is, I think, a modern restriction of the concepts of “morality” and of “moral goodness” which may obscure this very clear point. The restriction is that morality is only concerned with one person’s relations to other people, and moral goodness must lie in relating to others either altruistically or justly. That is, of course, part of moral goodness, but it can have the peculiar consequence that it leaves untouched the question of what things and states people should be aiming at, and helping one another to achieve (as Jeremy Bentham said, “Pushpin is as good as poetry”). On a more Aristotelian view of the matter, morality is concerned with the good life, and that is concerned with actualizing states of value. Of course one is to be concerned with their actualization in community, since it is a human good to live in community. But unless one clearly bears in mind that the most worthwhile values are those connected with beauty and truth (and, I would add, with Aristotle, friendship), morality may lack content. It is, contrary to what Weinberg explicitly says, but in fact following from his own central arguments, reasonable to hold that, if the universe is beautiful and intelligible, then it does give a special status to intelligence, since it generates out of itself beings which are capable of appreciating beauty and intelligibility, and so actually realizes those states of value which lie in such appreciation. The universe thereby also gives a special status to morality, since moral good lies in intelligences realizing states of value.

This does not prove that the existence of the universe has the purpose of realizing states of value. But I do think it gives initial plausibility to the hypothesis that there is such a purpose. The purpose would be to generate states of consciousness whose content is the beauty and wisdom of the universe. Consciousness, in itself immaterial, would have as its content the intricately structured material world in which it is properly, though not essentially, embodied. Moreover, consciousness would not be an alien immaterial intrusion into a physical cosmos. It would be an emergent, if immaterial, property of the increasingly complex and organized structures which are generated by

the autonomous processes of the natural world. There is no neutral, non-evaluative way of deciding whether there are sufficient states of high enough value in the universe for that to be considered a worthwhile goal of a rational creator. Nevertheless, it is a reasonable contention that there are. In particular, Christian belief in immortality opens the way to seeing this life as just part, though a very important part, of the development of sentient beings who can realize many states of value in their own unique and distinctive ways, in realms of being beyond this cosmos. That makes an important difference to assessment of the degree of actualizable value in the universe. For a Christian, then, the universe can plausibly be seen as purposively oriented to a goal of great value. But what about the process by which persons have emerged in this universe? If the universe is the creation of a wise and powerful God, one must postulate that the process is well adapted to its goal, that it is efficiently designed, given the nature of the goal.

On this postulate there can be, and is, dispute. Biologists like Stephen J. Gould argue strongly that the existence of persons on this planet is an accident, almost a freak event. If we ran through the evolutionary process again, he claims, it would come out quite differently, and human beings would probably not emerge. There is so much sheer chance in evolution, so many random mutations and environmental catastrophes, that it is amazing any complex conscious beings evolved. If some disaster had not wiped out the dinosaurs 65 million years ago, humans would almost certainly never have existed. So we owe our existence to an accidental disaster, perhaps an asteroid hitting the earth, and not to any careful plan.

Steven Weinberg seems to agree: “we will never be able to eliminate the accidental and historical elements” from our understanding of nature, he says (*Dreams*, p. 27). Now that may be true, as far as human knowledge and prediction go. Because we can never get a precise enough grasp of the initial conditions of any process, and because of the limitations placed by quantum theory upon our knowledge of

all the properties of physical objects, many events will seem to us to be accidents, things that could very easily have been otherwise. But could they really have been otherwise?

Many physicists—and Weinberg himself, most of the time—are, or would like to be, physical determinists. That is, they would like to say, with LaPlace, that given the initial state of the universe, and a complete set of all the laws of physics, every subsequent state follows by necessity. We might not be able to predict every physical state, but every state is nevertheless necessarily determined to be what it is by the laws of nature operating on previous physical states.

I find this an utterly unconvincing hypothesis. It seems to me to be a perverse translation of the theistic thesis that everything happens in accordance with the sovereign will of God. For some theists, if God is omnipotent, then God must determine every state of the universe to be just what it is, since God is the one and only cause of everything in the universe. This is not, of course, physical determinism, since it is God who determines every state, and not some “impersonal” laws plus previous physical states. God could break every law of nature, and still completely determine absolutely everything. I do not accept this theistic view, but one can see how belief in an omnipotent universal cause might easily lead to it. Take away the universal cause, however, and there seems little reason to think that all events are determined by some necessity, that there are “laws” which operate universally and unbreakably, and that nothing happens except in accordance with those laws. Why should that be? As David Hume pointed out, the idea of necessary connections in nature is a very obscure one, and it is hard to see how anyone could justify the assertion that such total determinism is true—that there will never, in the whole history of the universe, be an event that does not fall under some utterly general and universal law.

Nevertheless, it is obvious that a determinist cannot really accept that there are any “chance” events at all, in the real sense of events undetermined by past states and general laws. If the universe was run

through again, a determinist must think that exactly the same things would happen again. Now if God set the universe up, it will be utterly obvious to God, and completely determined at the first moment of creation, what will happen throughout the process. Far from being a hazardous process, subject to all sorts of possible accidents, the history of the universe will be predetermined in all its details. So it may be that the process has been set up as a simple initial state plus a set of elegant general laws, so as to result inevitably in the existence of communities of rational agents and the values they embody. The existence of human beings will not be a freak accident at all.

Gould's view might be, however, that physical laws permit many alternative courses of action. Like the conservation laws of physics, they lay down limits on what may occur, but permit many possible combinations of events within those limits. As long as the momentum of a kinetic system is conserved, individual particles may move at any number of velocities. This seems to me a more plausible view. But it does not permit the existence of totally freak accidents, in the sense of things which are almost wholly improbable. On the contrary, it limits severely the sorts of things that can happen. The probabilities that exist can in fact be precisely quantified. Accidents can happen. But it seems most plausible to think that the parameters of physical systems lay down general patterns of change and development which, in the end, can be predicted to eventuate in macroscopically predictable outcomes.

Gould, however, affects not to see any happy medium between absolute determinism and the occurrence of completely random and arbitrary events, which no knowledge of the system could have predicted. He discounts the possibility that the overall development of a physical system is highly predictable, while particular occurrences within the system remain to some extent open and unpredictable. Yet that seems to be just the sort of physical system that quantum mechanics suggests underlies all physical systems, and that could well apply to the atomic as well as to the sub-atomic world.

At this point one touches on one of the simplest and yet deepest questions about causality. What makes things happen as they do? If one says, "Nothing at all," one has a state of complete chaos, in which anything or nothing might happen at any moment, and there would be no reason to expect any sense in the universe at all.

The model which seems to appeal most to scientists is a "determining law" view. There is some set of laws which makes events happen just as they do. That is to say, objects can only act in accordance with some pre-specified law. But how the laws make things conform to them, or in what sense the laws actually exist, remains quite obscure. The philosophical origins of this view lie, as I have suggested, in a view of God as all-determining sovereign, or in the Leibnizian reformulation of this view, in a belief that there is a sufficient and good reason for everything that happens.

There is an oddity about the Leibnizian view, however, which needs fuller investigation. He assumed, as Immanuel Kant did, that, if there was a reason for change, that must be a determining reason. It must be such as to allow no alternative. So this is the best possible world, and each law is the best possible universal principle. It has often, and I think rightly, been pointed out that the idea of one best possible world may be incoherent. Many possible worlds may be good in many incommensurable ways, so there is no overwhelming reason to create just one of them. Nevertheless, it would be false to say there is no reason to create any of them. There is good reason to create a good thing, even if there are many other good things one could create instead. Such a reason would not, however, be a determining reason. It would rather be an inclining reason. If one asks, "Why bring about a state of this sort?" a perfectly good answer would be, "Because it is a good state." But if asked, "Why bring about this precise state?" one might reply, "It was a free creative choice." Does that mean the choice is arbitrary? No, an arbitrary choice is one for which there are no reasons at all.

In the case of a choice by a rational creator, even when it is unde-

terminably free, there are reasons present. Most obviously, the state chosen must be a good one, and not markedly worse than alternatives. But also one might take into account such factors as the other things one has chosen, the possibilities of exercising imaginative creativity, and the generation of a general pattern of choices of which this is part. There is a vast difference between an event for which there is no reason at all, and an event which is chosen by a creatively free agent for the sake of its distinctive goodness. What is common to the two cases is that the precise choice, within a given range, is undetermined by any factor already existing before the choice is made.

One might amend the principle of determining reason, therefore, into a principle of inclining reason, which carries with it a principle of creatively free choice between a specified range of goods. One can then say that one factor that makes things happen might be an undetermined and creative choice of goods, within a general structure of intelligible law. But that may not meet Gould's objection, since the undetermined factors in evolution (the random mutations, e.g.) do not seem to be choices of goods. They are often deleterious to the organism, and thus do not seem to be rationally choosable at all. That is no doubt why Gould allocates them to chance rather than to any underlying intelligence. What sort of God would allow so many harmful mutations to occur? This of course was the strength of the determinist view—there is simply no alternative to what happens, so you can hardly hold God responsible for it. But now if God allows undetermined events, why does God not simply determine them, if not for the best, at least for good? However, it turns out that the very formulation of this possibility contains the reply to the question it poses. If God determined all physically undetermined events, then there would be no undetermined events after all. We would be back to the case of complete divine determinism, even though we would have rejected physical determinism. So the real question is: is it a good thing to have complete divine determinism?

Many theists have unhesitatingly said yes to this question. Indeed,

they often think that any omnipotent God must determine everything, since that is precisely what omnipotence is. However, many theists think that there is a good reason for God not to determine everything. This reason is basically that, if a relationship of freely responsive love is to exist between creator and rational creatures, that response cannot be determined by the creator. The creature must be able either to accept or reject the creator's.