



ORDER: GOD'S, MAN'S AND NATURE'S

THEOLOGICAL ATTITUDES TO NATURALISM

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GOD, SCIENCE, AND METAPHYSICS

This short paper is an attempt to draw out some connections between fairly orthodox beliefs about God, developed philosophically, and more general philosophical and scientific world views. In particular, it tries to show that many contemporary theological views of God have a close affinity with Professor Cartwright's view of laws of nature. These theological views and Professor Cartwright's view by no means entail one another. But the affinities are close enough to suggest interesting avenues of continued research by sympathetic scholars in each discipline.

THE CLASSICAL THEOLOGICAL ACCOUNT OF CREATION

To begin with, it seems clear that Christianity, like Judaism, Islam, and most Indian traditions, asserts that space-time is dependent upon a non spatio-temporal reality. In the semitic traditions, this is part of the doctrine of creation. The idea of creation is often misunderstood as a belief that, in the words of Stephen Hawking, God had to 'light the blue touch-paper' to get the universe going. This, however, confuses the question of the origin of the universe with the question of whether the whole of our space-time is dependent upon some reality beyond it.

The early Christian theologian Augustine of Hippo got it right: God did not exist before this universe, and after a period of thinking and running through alternative possibilities, decide to create the universe. Time as we understand and experience it began with the first moment of this universe (assuming there was a first moment). If God brings time into being, God does not do so in time, for time does not exist until God brings it about. We should not think of God thinking one thought after another, first existing alone, and then existing together with a universe. Rather, the timeless reality of God timelessly generates the whole of time and space. We might today suppose that God can generate many different space-times, and Augustine mentioned this possibility in his book, 'The City of God'.

It follows immediately that God cannot be conceived as a person who thinks, wonders, and decides. There is a proper place for such talk, but it is crucial to understanding traditional theism to see that 'God' names a timeless existent, and thus such terms will not apply to God in the same way that they apply to humans. The first strand of a doctrine of creation is that a timeless reality exists, and from it one or many space-times arise. I think modern cosmology makes such a hypothesis intelligible, and ironically it even forms part of Stephen Hawking's hypothesis that this cosmos arises from a non-material and non-temporal realm of 'laws' which generate physical and temporal reality.

Physicists often consider such laws to generate the universe by necessity. At this point a second important element of a doctrine of creation becomes relevant. The dependence of a universe upon some non spatio-temporal reality beyond it is not considered by theists to be an unconscious, undirected process. The dependence is one of causation through intention – God knows and brings about the cosmos, non-temporally, for a reason. Such knowledge would be very unlike human knowledge. It would be a non-temporal knowledge of a range, perhaps of the complete range, of possible universes. Presumably the complete set of laws of nature that would obtain in every possible universe would be parts of this knowledge.

The status of laws of nature when there is no actual universe is debatable. One account is that they are sets of hypotheticals stating regularities that would obtain if there were any actual physical entities with properties (like mass) that could be described by variables in such dispositional statements. It is hard to see how such purely hypothetical entities could have actual existence, though one might think of a quasi-Platonic realm in which they exist. It is also hard to see how they could of themselves generate actual physical states.

Even the quantum vacuum state from which physical particles are said by some cosmologists to emanate is not 'nothing', as it is sometimes loosely said to be. It is a very precise balancing of complex energies, the behaviour of which quantum laws may describe, but which can hardly be generated by any mere description of their behaviour. To posit that such a quantum vacuum exists does not really resolve the problem of accounting for why this physical universe exists. For the existence of a quantum vacuum is at least as complex as the existence of the physical universe, and its properties are necessarily much less well known, or even knowable, than the properties of our physical universe, since we have no observational access to ranges of properties that lie beyond the horizon of our visible universe.

It is further hard to see how one might be sure that any energies that exist would fall under the sway of nomological (law-like) descriptions. How could one be sure that all possible energies, or even that some class of energies, would fall under general laws like that of gravity? If they did, then one might have a basis for saying that this universe would come into being by necessity – the energies plus the laws might sooner or later produce this universe, as well as producing huge numbers of other universes - perhaps, on some theories of quantum cosmology, even every possible universe, which might seem ontologically promiscuous to the highest degree.

It is, however, rather odd to explain the improbability of one universe by postulating that a huge number of equally improbable universes exist. If it makes sense to speak of probabilities at all in this area, the existence of many improbable states must be more improbable than the existence of just one improbable state. So it is more unlikely that all

possible energies fall under a set of pre-existing laws which generate huge numbers of universes than that this physical universe simply happens to behave in largely regular and law-like ways, and there is nothing more to be said. The suggested cosmological explanation in terms of a multiverse (a huge array of space-times) only makes things worse.

In any case, what ground could we have for supposing that the immensely large set of every mathematically consistent universe exists by necessity? If it does not exist by necessity, we have little evidence for thinking that every possible universe exists, as a matter of contingent fact, which could easily have been otherwise. Many mathematicians doubt that it is even a coherent supposition to postulate a set that includes every possible universe. We could certainly never know what the boundary conditions of such a set would be, so it is a pretty vague hypothesis at best.

So there are at least five major problems with this sort of account of the genesis of the universe. How can seemingly hypothetical laws actually exist? How can we account for the existence and nature of the various quantum states that form the foundation for the existence of our physical universe, and how can we even know with any certainty what the properties of these states are? How is it that postulated laws of nature govern or even accurately describe the behaviour of independently existing energies of unspecified variety and complexity? How does the postulation of a multiverse render the existence of this improbable universe more likely? Is the idea of an infinite multiverse coherent, and what grounds have we to think that it exists by necessity?

I am not raising these problems to show that a naturalistic account of the genesis of the universe is impossible or irrational. I simply want to show that, however appealing it is, it is deeply problematic and has not completely resolved questions about the origin of the universe. It has almost done the opposite, for it shows that such questions are real, important, yet probably scientifically unresolvable.

A theistic account of the origin of the universe is, of course, also problematic. It also contains many unresolved problems, but no more so than the naturalistic account. For people like me, it is more attractive than the naturalistic account, for the following reasons. It seems to me intelligible to say that laws of nature do pre-exist the physical universe, because they exist in the mind (the non-temporal consciousness) of God, as principles that may apply, and that God can apply, to some physical universes. The basic physical forces of our universe are brought into being by God, who will ensure that they are law-governed (if God so chooses), and God will not create more universes than are required to realise the divine purposes. Most importantly, each created universe will exist for a reason – and this is the point at which philosophy and theology explore a different conceptual realm from physics and cosmology.

THE CONNECTION OF REASON, VALUE, AND PURPOSE

To consider what reasons are, we have to consider the nature of persons, of free and rational choice, of goodness, of purpose, and of consciousness. All these matters are highly contested matters in philosophy and theology, but they do not form part of any course of instruction in physics or cosmology. Assertions about conscious experience, about value, and about purpose, are not decisively testable by any observational or experimental methods. After all experiments have been done, questions remain about whether consciousness is reducible to some sort of physicalist account, about what, if anything, is

objectively valuable, and about whether there is anything like irreducible purposive causality (e.g. action for the sake of some goal).

I will give one possible account – one that I accept – of these matters. Being ‘good’, not just as a means to something else that is good but for its own sake, is being the object of a possible conscious state or process which is choosable by a rational being for its inherent value. There may be some possible state S, envisaged by a consciousness C, and considered by C to be intrinsically good, to be worth choosing for its own sake, and consequently actualised by C. When this is the case, then S exists for a reason, and the actualisation of S is the purpose that C has in mind in bringing S about. In this way knowledge, value, reason, and purpose are conceptually connected in an intelligible way.

The postulate of God asserts that a non-temporal consciousness envisages all possible states of affairs, evaluates some of them as having distinctive value, and chooses to actualise some states which will realise some of those values, values that may not be able to exist in any other context. Enumerating those values, and elucidating the contexts in which alone they can exist, will give the best possible reason for the actualisation of a set of states of affairs – for the creation of a universe. The actualisation of the envisaged values will be the purpose of such a universe, and creating the conditions of the possibility of actualising them will be the reason for creating a universe.

Creation is thus the dependence of the whole of space-time upon a non-spatio-temporal cause, which actualises the universe for the sake of the envisaged distinctive values that it will contain. This is a form of causality through intention, and the non-temporal consciousness of God, conceived as having knowledge, rationality, and causal power, is the reality upon which the physical universe depends.

This hypothesis is not conclusively testable by any observational or experimental technique. Considered simply as an abstract hypothesis, it may at first sight not seem to make much difference to how we see the physical universe. If it has any conceptual advantages, they lie in the simplicity, economy, and integrating power of the hypothesis of one rational supra-temporal cause of this complex and seemingly highly organised universe.

Yet on the God hypothesis the universe will show evidence of intelligibility, value, and purpose. If there is a God, then the cosmos has a purpose. God creates for a reason, and that reason will consist in the actualisation of a set of valued states or processes. There are undoubtedly many different sorts and degrees of value, but if the analysis of value just given is correct, then some values are especially significant, as providing the conditions of the possibility of applying the concept of value at all.

The concept of value will have no application unless there is a consciousness that has knowledge of many alternative possibilities, that can rationally work out the connections between means and ends and between short-term and long-term values, and that has the freedom and the power to actualise and enjoy some valuable states. Thus consciousness, knowledge, rationality, freedom, power, and enjoyment are basic values, states that there is a good reason to choose if anything at all is valued. In a full account, many qualifications and further explanations would need to be given, but this is at least the sketch of an argument that values are not wholly relative, but that there are some basic values that all rational agents have good reason to affirm. And these will be values that any rational creator

of a universe has good reason to choose. God does not arbitrarily place a value on anything whatsoever, by some fiat of the divine will. God's own nature defines a set of basic values, both in the divine being itself and in any created universe.

God's envisaging of future states, evaluating them, and being able to actualise them and appreciate them, is what enables the universe, or states of the universe, to be called good. A universe without God and without any conscious beings would not be good. It would not be evil either. It would be a universe in which the concept of goodness would not apply. If and only if there is a God, the universe even without any sentient beings in it could be called good, and could have a reason for existence and a purpose or purposes for the sake of which it exists.

RE-THINKING THE IDEA OF A BEST POSSIBLE BEING

Most theists have postulated that since God is the sole source of all existent realities except itself, God has good reason to actualise the highest compossible degree of basic values in the divine being itself. So God will, so far as it is possible (and no power other than God can prevent its possibility) actualise in the divine being itself the greatest possible consciousness, knowledge, rationality, freedom, power and enjoyment. This is the idea of an Anselmian Perfect Being – 'that than which nothing greater can be conceived', a being of the greatest possible knowledge, wisdom, freedom, power and bliss.

I accept this definition of God, but since the fifteenth century there has been an interesting change in European thought about what divine perfection might be. This change is closely connected with a Reformation return to a more literal interpretation of Biblical assertions about God, and with the rise of the new science, which called for close observation and experiment and an emphasis on the full reality of the particular and individual. In Patristic and medieval thought, the acceptance of ancient Greek conceptions of perfection as changeless, timeless and inactive meant that divine perfection was conceived as immutable and impassible, not at all related to the transience and imperfection of the temporal world.

As I have suggested, this is very similar to some contemporary cosmological conceptions of a supra-temporal mathematically intelligible realm from which temporal universes emerge, perhaps by some innate necessity. And I asserted that this stress on non-temporality is indeed an important part of any concept of God as creator.

But the Protestant emphasis on a return to the Bible focussed on the much more dynamic and personal portrait of God to be found in the Hebrew Bible. The God of Abraham, Moses, and Isaiah is not presented as an immutable transcendent ideal, but as one who speaks, listens, responds, and relates, who is angry, grieved, and pleased, who commands and forgives in response to the acts and prayers of the covenant people.

In a converging conceptual revolution, the new experimental science turned its face from real essential natures and final causes existing in some non-sensory reality, to focus on the reality of empirically observable processes and the mathematical description of their behaviour in closely controlled conditions. The individual and temporal became fully real, whereas general natures were abstractions – a reversal of the Plato's view that general ideas (essences, *eide*) were real, and empirical phenomena were at best half-real and possibly wholly illusory.

In this new thought world, individual uniqueness and diversity, creative change and relationship came to be seen as perfections, sources of great value. As such, the theist might have to find some way of including change, creativity, and relationship among the perfections of God. Whereas Anselm assumed that any perfect being would have to be immutable, after the fifteenth century it came to seem that immutability might actually be an imperfection in God, since it would preclude real creativity and compassionate responsiveness to the lives of creatures.

One way in which this can be done was explored by a number of German Idealist philosophers, among whom Herder and Hegel were prominent, both significantly being in the Lutheran tradition. They postulated that God was the eternal and immutable source of all beings, but that this was only one, albeit the primordial, aspect of God's being. God was also a being who progressively realised the divine being through a temporal and developing process. There was a temporal expression of the primordial reality, and this expression also was part of the divine reality. Creativity, change, and relationship can be parts of God's self-expressive nature. Just as God creates time, so God can express the divine nature in created time.

For the medieval view, there was always a problem about why God, who was changelessly perfect, should create a universe at all. The universe could add nothing to God. Aquinas' suggestion was that goodness overflows by its very nature, so good universes just flow from God without adding anything to the divine perfection. But Idealist philosophy can give a more positive reason for creation – namely, that the divine nature as creative and relational (as 'love', in the Christian New Testament), by internal necessity expresses itself in creating a universe in which change, development, individual differences and relationships, are possible.

A temporal universe enables values to exist which could not otherwise exist – values like self-realisation and development, values that are realised from diverse finite and embodied viewpoints (like my view of a sunset from the place where I am located, on wavelengths suited to my senses), and values that arise from relationships within communities of interdependent persons.

None of these values could exist within the changelessly perfect being of God, and only a created universe from which finite intelligent agents arise makes them possible. It makes sense to say that if such values exist, God's knowledge will have different content than if they had not existed. So a created universe makes a difference to God's knowledge, as well as bringing into existence many different sorts and degrees of knowledge possessed by finite persons. A created universe also makes a difference to the ways in which God acts. For if creatures have real freedom, God's creation of future states will depend partly upon the ways in which free decisions are made by intelligent created beings. God's creative action will be responsive and relational, not simply all-determining.

DIVINE CREATION AND THE DAPPLED UNIVERSE

The picture of the universe that this revision of the idea of God suggests is not just of a complete space-time that is created whole and entire in one supra-temporal divine act. It is of a universe in which the future is open or partly indeterminate. The future is decided by the free acts of creatures and by the ultimate purposes of God (one of which is that free

creatures should exist). In such a universe nature will be law-like – it must be predictable enough that creatures can make informed decisions, and directional enough that God's basic purposes, if not all God's specific goals, will be actualised. But it will also be open – the laws will allow alternative futures, and be flexible enough to permit many conscious freely formed intentions to have a causal input into how things go.

This picture is not easily compatible with any idea of the universe as a closed deterministic system of events controlled by a set of absolute physical laws. There will be laws of nature, but they will be (a) open to mental, spiritual, or purposive influence, and so they will not adequately explain without remainder all that happens. And (b) they will be directed in general, but not in specific detail, to goals of value, so they will be physically indeterministic to some degree.

It follows that in the physical universe there will be causal influences (paradigmatically, the influence of God) that are not precisely measurable, repeatable, publicly observable, subject to experiment, or describable in terms of general covering laws. It will be quite difficult in many cases to distinguish such influences from chance or 'brute dappledness'. In any partly indeterministic universes there must be a place for chance to operate. And since any divine influence there may be will be unpredictable and untestable, it may well seem like fortuitous chance. Moreover in many cases a form of genuine randomness will operate – as in the evolutionary process itself, where God clearly does not guide every mutation to a good outcome. Why this should be so is another weighty topic. But a sketch of a suggestion is that no universe which allows for the emergence of creative freedom within a generally law-like and teleological structure can permit God to determine every outcome for the best. Within such a universe, laws that permit alternative outcomes are likely to generate such outcomes in a partly indeterminate way, a way in which general tendencies will operate without specific determination at every point. This is not pure chance; but it is nevertheless genuine chance that enables creative action to emerge as a natural realisation of the developing potentialities of the created order.

In my opinion this view of God, quite widely but not universally held by Christian theologians, is one that has a natural affinity with Professor Cartwright's thesis of a 'dappled world'. It has much less affinity with a rigorous neo-Newtonian account of block time or physical determinism, or with Calvinistic accounts of total divine predestination. It is worth noting, however, that the two main Reformed theologians after Calvin – Schleiermacher and Barth – modify Calvin's account considerably, and the view I have briefly presented is one that is broadly accepted by Barth. So there is here perhaps a quite exciting possibility of a convergent reconfiguration of thinking in both the philosophy of science, the philosophy of religion, and in theology.