GOD AND THE BIG BANG

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ABSTRACT

Modern ideas of the origin of the Universe in a unique event, the "Big Bang," are discussed in the light of some traditional philosophies and of Christian theology.

1. The Beginning of Things. Many scientists now believe that the Universe had an origin in time. It began in a gigantic explosion some $10^{10}$ years ago called the Big Bang. The number $10^{10}$ is very big, but it is finite. There is some time at which the Universe is not, and then, some later time at which it is. In the very beginning, it is thought that whatever there was existed in equilibrium as a sort of primeval soup. Then, something happened to disturb this equilibrium, and matter began to form. At $10^{-2}$ seconds, at a temperature of $10^{11}$K, neutrons, protons, electrons, and positrons emerged and were in a state of equilibrium. At one second, at a temperature of $10^{10}$K, photons appeared — light. At 13.8 seconds, and a temperature of $3 \times 10^9$K, deuterium and helium nuclei formed. At 35 minutes, at a temperature of $10^8$K, helium and deuterium were present. At a later time, at a temperature of $3 \times 10^3$K, neutral atoms formed.¹ Such is the theoretical countdown of the beginning of things.

Two questions about this beginning of the Universe immediately arise. First, what was prior to the explosion? What was there before matter came into being? Second, what disturbed the equilibrium?

2. Causes of the Big Bang. The authors of a modern textbook of physics observe: "To many people, … a ‘something’ outside physics can then be introduced at $\tau = 0$. By semantic manoeuvre, the word ‘something’ is replaced by ‘god,’ except that the first letter became a capital, ‘God,’ in order to warn us that we must not carry the inquiry any further."²

This is a fairly typical remark of many physicists, for whom God is a defunct physical theory or merely a word which camouflages our ignorance. God is being replaced, in the advance of physics, by purely materialistic accounts.

But not so fast, men of physics. To say that God came first is to say something quite different and new. By no means does it close the investigation. Indeed, if God made the inquisitive physicist’s intellect, He* may wish us to enquire into

*Masculine pronouns are used as a linguistic convenience only and anthropomorphizing concepts of gender should not be read into them.

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Him also, to find out as much about God as we can. To say God came first is to open an investigation of a wholly new kind. For then a new set of questions arises other than those with which physicists have been typically concerned. God is thought to be quite different from matter. The scriptural account we have from the Judaeo-Christian tradition – words given through the inner life of the prophets – present God as Spirit. God’s name is simply: I AM. What Spirit is is hard to say, but at the very least it is quite different from the matter we observe around us – it does not have mass nor does it occupy space. It is not bounded. It is invisible. Yet it is the most supremely real thing. What we seek to know, in knowing whether God came first, is just what Spirit is, how it gave rise – or continues to give rise – to matter (the question is the same for the steady-state theory of the Universe) and how it now interacts with matter and ourselves in some ongoing way.

So according to popular physical theory, matter had a beginning. There was a time when matter was not. That suggests to us that matter cannot be the only thing in the Universe. It is dependent on something else. This something else is what the religious tradition has classically called “God.” To invoke God at τ = 0 is greatly to enlarge our ideas of what the Universe is. The real meaning of God, for physicists, is that they must now deal with a set of questions about the nature of the Universe which are not readily amenable to the methods of present-day physics.

3. The Argument from Design. Physicists have not always been so far from the idea of God as they are today. Newton was a religious man, and many early physicists regarded the laws of nature as ideas in the divine mind. More recently, a modern physicist, P.C.W. Davies, has resurrected the notion of God.⁵ He argues that the natural constants, the mathematical laws of nature, are so precisely and subtly dove-tailed together that they could never have come into being by chance. Rather, they suggest an intelligence at work in their formation. In fact, he goes so far as to suggest that not religious experience but science is the best way to approach God – quite a turn about for modern physicists.

Davies’ suggestions are not new. He is giving a modern version of a famous and traditional proof for the existence of God – the argument from design. Herein, the Universe has an intelligence behind it which accounts for its design and also for our own existence. Our lives are thus meaningful and purposive.

The claim that the Universe came into being through intelligence is to be contrasted with the prevalent modern claim that it came to be by chance and necessity. Plato, over two thousand years ago, thought it not possible to decide between these competing principles – design and chance – on the basis of evidence, for the principles themselves structure the evidence. He thought that we must decide between them on the basis of their effects on us who accept them.

This is to say that it makes a difference to us whether we believe in design or chance and necessity. The choice will have a profound effect on the way we live.
Since we are a part of the universe we are trying to understand, the principles by which we live (which either help life flourish or restrict it) may have significance for the universe as a whole.

For the past hundred years or so we have subscribed to chance and necessity: a meaningless life in a meaningless universe. It may well be that pollution, ecological destruction, crime, loneliness, and alienation are the consequences of living by this principle. As we try to extricate ourselves from modern ills, it is time to consider once again the argument from design, with all its implications.

Of course, we now know more about the universe than Plato did. We know all about the precisely dove-tailed mathematical laws which he could only surmise. Davies does give some evidence for design. He puts the matter something like this: Would the seventeen parts of a meat chopper, rattling around together for millions of years, ever get themselves together to form a meat chopper? Yet that is the kind of thing the theory of evolution would have us believe. (Doubt about chance and necessity has been cast, for similar reasons, by the astronomer and author of the steady-state theory of the universe, Fred Hoyle). 4

The argument from design is an argument for the existence of God. It has never satisfied the human heart, which has aspired to know God directly, to touch and hold God. Indeed, if God is love, as Scripture asserts, then God ought to be experiencable. What can be said to these aspirations?

If we are to know God directly, physics as it now stands is not the way. Let us be very clear on this. Contrary to the claims of Davies, the methods of science in knowing the Universe are extremely limited. This is because physics approaches the Universe only as spectator and onlooker. However much it may appear to be within the interior of things, it is really still only looking at outsides and making guesses at what the inside is like, that inside which Chardin, a religious mystic, calls the “within of things.” To this within, as he well knew, physics has no access – this despite appearances to the contrary, that physics is in the very heart of nature.

An example will make this clear and will also reveal that any physical investigation culminates in unexplained explainers, entities into which the scientific mind has no insight whatsoever but which, by deduction, make everything else intelligible. The example is from biology. Our biological questions lead naturally downwards into the molecular domain, and it is widely believed today that physics has the answers to biological questions, though even Whitehead suggested that ultimately the concepts of biology would revolutionize physics, not the other way around.

The Example: The heart beats faster in exercise. Why does the heart beat faster? Because adrenaline, secreted by the adrenal gland, causes it to speed up. How does adrenaline act on the heart? By increasing its permeability to certain ions. How does adrenaline affect the permeability? It acts on the ion transfer system in the cell
membrane. How does it act on those systems? It is absorbed by charged sites in the systems. How is the adrenalin absorbed? Forces exist between unlike charges that bind the molecules together. How do forces attract?

With this question we have arrived at the question of questions. To it, no answer can be given. (Or if an answer comes in the future, the problem will simply shift a level downwards.) We do not know how forces attract or repel. They just do. Our explanation of nature culminates in a brute fact, itself unintelligible, in terms of which everything else is rendered intelligible, although we must now doubt this in light of the unintelligibility of the ultimate processes. The forces today are the “occult entities” of science, be they individual or field effects. From a starting point based on perception, we do not, after all, enter the “within” of the mysteries of nature. We are still spectators. We do not explain; we only describe.

Why are we so limited? The methods of physics are confined to what the external senses perceive — to the weighable, the measurable, the quantifiable. God, being Spirit, is not amenable to such techniques. This is why some physicists, confined to the domain of matter, claim that God does not exist. But neither the true within of matter, nor God if God ramifies through the Universe supporting and sustaining it from its inner side, can be known by the methods of physics as they now stand. If God is to be known, some other way will have to be found. Some way not constrained by the limited methods of modern physics.

4. Knowledge of God. What could such a way be? I answer: Through ourselves. The theory of evolution makes it clear that we are a part of the cosmos. Indeed, we are formed of the dust of the cosmos. We must carry in our “within” memory of the Big Bang, knowledge of God. We are the only part of the cosmos in which we have access to the inner side of things. What can we know there?

We know, in ourselves, ideas, which we could never discover by studying matter. We have a rich inner life, full of images, prophecy, and poetry welling up. We know, in ourselves, purposes. We are always conceiving goals and carrying them out. We can not say, from looking at the outside, whether animals have purposes in the way we do — ideas which they then act on. Only in ourselves do we know this. We know, in ourselves, the impulse to express ourselves, the need to spill over, to share, to externalize what is internal, to love. Moreover, we know in ourselves the peculiarity of having a sense of our own identities which persist through time. We bear the scriptural name God gave himself: I AM (Exodus 3:14). What can we make of all of this?

The religious tradition of the West claims that we have a peculiar and unique place in nature, not just because of our reason and our science, but because we are made in the image of God. We are, in some way, like God. By knowing ourselves, we know God. There is a self-knowledge which is knowledge of God.

Such self-knowledge goes far beyond any attributes listed above. It has to do
with our whole way of being. We know what it is to be, to exist, by being and existing, and this is a knowledge we can get from nothing. There is a way of being ourselves which is a knowing of God's way of being, of existing. This does not require long years of study. What is ultimate for us is just what transpires in our own beings moment by moment, day by day, and throughout the years. We are immersed in the life of God, and to attend to ourselves and our interior states is to know much of the ways of God with us and of that great life with which our own runs together.

In what happens to us, inwardly and outwardly, we learn the ways of God. In prayer, we commune with God directly. More than this. To come in touch with the Source of all things has a transforming effect on the one who communes. The doorways to the spiritual world open on our inner side. In the higher reaches of prayer – union with God – one is inwardly transformed to be more and more like God. St. John of the Cross, a religious mystic of the West, writes: "The intellect, which before this union understood naturally by the vigor of its natural light, by means of the natural senses, is now moved and informed by another higher principle of supernatural light, and the senses are by-passed. The intellect of this soul is God's intellect, its will is God's will, its memory is the memory of God, and its delight is his delight." 5

Here is a procedure which may transform us beyond the realm of physics. It has implications for that physics. What are the implications? Simply put, physics is limited in scope because it is tied to the senses. The path of prayer develops the internal being in such a manner that knowledge is obtained which by-passes the senses. We can know both the existence of God, and God, through prayer. It opens our inner being and God to the inner side of the Universe, so to say. God is not merely a defunct physical theory or a word which camouflages ignorance. With this knowledge of God, we return to the Universe and ask what God may be doing there.

5. A New Conception of the Universe. Let us return to the question of the beginning and see where we now stand. What came before the Big Bang? Let us be clear just how complicated this question really is. As Davies notes, for modern physics, space and time are really bound up with the properties of matter and do not exist independently of matter. Matter, space, and time all arrive together. So it is hard to ask what came before the Big Bang. Time did not exist then, as we know it. We are really asking what is beyond space, time, and matter. What contains them?

The religious answer is that God is beyond space, time, and matter, but that God ramifies through these, everywhere supporting and maintaining the whole and ourselves. What does the word "God" mean? First, it means that matter is not
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supreme and did not give rise, through evolution, to a being who makes up the idea of God to satisfy needs for security, as Freud has suggested. It means that God is first, matter second, and that God gives rise, through evolution, to a being who can recognize God.

Second, it means that there is, as the source of the Universe, not matter which often seems quite unlike us, but a being who is, in some way, like us. We can find our own face writ large in the cosmos.

Third, it means we now have a new perspective for assessing the relevance of the physicists’ limited perspective on reality.

Finally, we have a way to interpret the Big Bang. Plotinus, a Greek philosopher living after Plato, claimed that originally there was only the One, and then the One overflowed to give rise to the Universe as we know it. To know this One in itself, he recommended what he called the “flight of the alone to the alone.” Cut away all ties, turn inwards, and seek the One.

This is to say that the Universe is God’s self-expression. It appears that God may have had difficulties learning to express Himself, even as we do, but when God discovered the way, He gave rise to the universe as we know it, a Universe constructed with wisdom, wit, and intelligence, suitable to all creatures – fish, birds, human beings – who inhabit it. “Let there be light.”

God is not separable from God’s creations as we are, at least not according to the religious tradition. God’s uncreated energies ramify through created things. God is the within of all the Universe. The Universe is God’s body – the body of God which God created Himself. We are part of that kind of Universe. If we can understand ourselves aright – especially fathoming the ways of our own creativity – we may understand God in whose image we are made.

For the consequence of saying that God came before the Big Bang is nothing less than to challenge the traditional assumption of physics that matter can be considered everywhere fundamental. It raises for ourselves such questions as: What is God like? How did God make the Big Bang? What is the relationship of matter to Spirit?

It is also to ask the traditional question of physics – What is the Universe? – from a new perspective. For there may be not just one Universe of matter but many universes, non-physical universes, more like our ideas, co-existing with the physical. We inhabit many realms and often in our inner recesses and in our own depths we glimpse them.

This is a new problem for physics. Physicists must approach the frontier, not of the very small and the very large, but the one where ideas meet matter. In this, physicists can no longer go it alone. It is time for disciplines to set aside the prejudices which have kept them apart and to combine their efforts to answer some of our questions. It is time for the theologians, contemplatives, mystics – East and
West – biologists, and physicists to pool their efforts to learn something of the nature of God.

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Notes
2 Ibid., p. 428.