

Article

New Proofs for the Existence of God (Part III): The Teleogenical Proof

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ABSTRACT

A synthesis of recent Cosmological and Biological Evidence concretely points to an Intelligence that created this universe that must be independent of this universe. The classical teleological and cosmological arguments have valid components but are not conclusive due to their segmented and non-integrated nature and also because of a logically invalid tactic/strategy used by atheists known as the *fallacy of conflation*. Also discussed by deconstruction, is the futile attempt at using cloaked language to hide the fact of teleological processes. Epistemologically, it is also shown why the Big Bang is a fact and not a theory. Herein, a complex yet integrated new proof that interweaves all these ideas, called the *Teleogenical Proof*, is presented that overcomes all the shortcomings of the latter two classical attempted proofs and connects with the Sesamatic proof on the question of infinite regress.

Key Words: teleogenical, Big Bang, fallacy of conflation, preadaptation, premonitory, statistical fallacy, teleonomic, teleomatic, anthropic cosmological principle, placebo.

1. Background of the New Proof

A new proof for the existence of God was published in the book, *From Facts to Values: Certainty, Order, Balance and their Universal Implications*, which had a unique approach of combining recent cosmological and biological evidence to both reveal and merge arguments on teleology with those pertaining to origins. In a subsequent book by this writer and M. Muslim, whose Sesamatic Proof for the existence of God was presented in the last issue of this journal (Muslim, 2011) a meta-analysis of the proof in *From Facts to Values* was given. This new proof, termed the Teleogenical Proof, as meaning design and purpose that is connected with origins, is presented herein.

1.1 The status of the argument by design: A meta-analysis of the Teleological Proof in *From Facts to Values*

If you ask most people why they believe that this world was made by God, they might reply that it is because they see order and complexity; and just as ordered and complex things in factories need designers, so too must this world come from a designer called God. This answer is intuitive and takes a special kind of thinker to reject it. But many philosophers are right when

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they say that what may be true in our experiences in our factories may not hold true for the whole of reality *in terms of process*. We know that an airplane requires a manufacturer because all airplanes that we have seen are made by manufacturers. Such thinkers claim that because we have not seen universes made before our eyes, we cannot say for sure that the universe is the same as our human made products. “Like” is not “is”. This has led some thinkers to argue that design does not prove a Creator. The universe may be like our factories but then it may not, for it may be unique. Thus those who say that the world must have been made by God the Designer, are focusing on the origin of existence (a mind behind the processes as the only logical possibility); however, those who say the opposite, escape such an absolute conclusion, by resorting to the processes of an already existent universe. They concentrate on a critique of the ascription as to the cause of the processes and structure. The atheists thus evade “God” by focusing on processes (i.e. evolution etc.) and de-focusing on issues such as actual origination and the problem of infinite regress (other than to lambaste the cosmological argument).

In “From Facts to Values”, co-authored by one of the writers of this book, several other aspects were brought into discussion, as this evasion tactic, that is, shifting the argument from the indivisibility of origin and design, to only design, was noted, in order close the gaps brought about by using only the argument from design and prove the *actuality* of God. These gaps identified and discussed were centred around the issue of eternity (infinite regress) and intelligence, and were: the *fact* of the Big Bang origin, where it was also proven why it is a fact and not a theory; the automaticity of man-made design approaching the automaticity of design of nature, such as evolving systems, and hence proving the need for greater intelligence behind design than the human, rather than a blind process, if we consider evolution as well; the strong anthropic principle, which postulates the pre-adaptation and pre-planning of the universe’s parts precisely to bring about human existence, and finally, the connected new discoveries in astrophysics, all adding to teleology backed, at its basis, by cosmology. These evidences were discussed in a seamless and indivisible fashion, and were then compared to an eternity that was synonymous to and was ‘full’, embraced with intelligence, as opposed to the contending view of an ‘empty’ eternity without the intelligence, that was to be accounted for, as the only other alternative. This argumentation procedure resulted in an entirely new proof for the existence of God, rather than the conventional unrealistically compartmentalized teleological, cosmological and ontological proofs. The first two are in and of themselves, inconclusive, whereas the ontological proof is fallacious, since the mere assumption that the ability to imagine the highest good, which is God, does not mean that the highest good exists. The cosmological and teleological arguments, therefore, were restructured as a *unit* in this new proof, using new evidence from nature, the whole of which could be dubbed the *teleogenical proof* (origin of design, purpose), though such a name was not applied to that proof in “From Facts to Values”. Essentially, the elaborate and intricate proof showed that design implies an intelligence greater than that of human intelligence and that intelligence must be one, creative and eternal, the universe having been originated. It was stated in “From Facts to Values” that design has to do with “how” the universe was created and not whether it was by a singular non-spatio-temporal dependent entity, but that the “how” question has been converted into the “if/whether” question and then attacked by the atheists, inordinately, in that, in their stating that ‘like’ is not is, they dismiss the whole argument. What is forgotten, firstly, is that “design” only refers to the structuring of the existent elements, and that their origin has to be accounted for; and, secondly,

that although it may be true that “like” is not “is”, such a fact of design may *reinforce* the idea of a higher intelligence, rather than diminish it.

2. The Teleogenical Proof in *From Facts to Values*

2.1 Big Bang and Biological Evolution: Theory or Fact?

Using the above-discussed proposition of consistency/inconsistency, our outlook on two major developments in science turn out to be different than what is being erroneously clung onto in general. These two major issues are: *The Big Bang*, and *Biological Evolution*. Many scientists and others think that the "Big Bang" is a theory, whereas "Biological Evolution" is a fact. It will be argued in this section that it is just the converse: The Big Bang is a fact; Biological Evolution is a theory. Here, the Biblical account of creation, is not being defended at all. Rather, what is being determined is the status of Biological Evolution — is it fact or theory?

First, let us consider the ‘Big Bang’. When one refers to the ‘Big Bang’ what exactly is one talking about? Is one referring to the development of the universe after the initial origin? Or is one talking about the actual point of origin of the universe? Or both? What has been concluded by the writers is the following: The Big Bang origination of the universe is most assuredly a fact, but the details of how exactly the galaxies etc. got structured thereafter remains theoretical.

Once there was no space and time. This is an established fact. Why? The proof that the universe had an origin lies in the fact that the universe has been, and still is, constantly expanding. This logically means that the galaxies etc. were together at one point. One does not need to see the actual state of the universe, x billion years ago to know this. This is assuredly extrapolable. For example, if one is six feet tall, then there must have been a point when one was two or three feet tall. This is a conclusive proof of development. In a similar way we can realize for a fact that the universe once occupied a smaller volume. We can come to know this for a fact.

Other evidence for the Big Bang is the constant background radiation permeating the whole of space. This background noise, detectable on radiowave antenna — is no doubt the primeval remnant of that ‘explosive’ beginning. Then, there is also the evidence of the quantity of helium and hydrogen found in the Universe, which exactly matches that which was predicted by the Big Bang. Recently, the puzzle as to how galaxies got formed or how the gases got clumped together has been resolved by the discovery that the 3° K background radiation in the universe is not distributed uniformly, but with fluctuations; the gases have congregated around the various distributional intensities of the early radiation, producing galaxies in some regions and none in others.¹ However, one does not need thousands of proofs — all that is required is one proof. In the case of the Big Bang a proof — such as the expansion of spacetime — is conclusive and enough. Any other proofs, however, would certainly add to our knowledge, making us see things from different angles. This leads us to the second proposition:

¹. Powell, Corey S. (1992), "More Proof for the Big Bang: The Golden Age of Cosmology", *Scientific American*, pp. 17-22.

Proposition 3: *A theory is either rejected by at least one external inconsistency, or is proven to be true by one or a series of interconnected evidences, and thus is a fact.*

Such proof would be conclusive and direct. Conclusive proof means that all possible alternatives for explaining the phenomenon have been rigorously exhausted by the process of ‘elimination by contradiction’. Direct proof means that there is a continuity in the chain of evidence — evidence which is seen. However, to see does not necessarily mean to see visually, although it could include this. The process of elimination by contradiction is the process which forms the basis of the proof. It could, however, be conceivably counter-posed that: How does one know that all the possibilities have been exhausted? To address this question, we will have to analyze the process of the process of elimination. In the process of elimination we are trying to determine what is the possible cause for a given effect. Let us assume that there is an effect H and that we are examining a finite set of possibilities as causes: A, B, C, and D. If we start comparing each of these potential causes and come across inconsistencies in their relation to H, then we can eliminate them one by one. We may conceivably eliminate all of them, in which case there must be something else which caused H — something that we do not know of. If A is the most plausible of the four options but does not explain the whole effect, then we know that there must be some other cause(s) associated with A which must have produced the effect H. In this case, we should be talking about probabilities, not certainties. But, let us assume that B, C, and D are eliminated by checking for consistency. Does this automatically mean that A is the answer? One should not automatically jump to the conclusion that A is the cause. ‘A’ would only be the cause if it would be integrally connected with H by finding direct proof for its association with H, wherein there is no inconsistency. To take a simple, but practical example, if you had a set of four keys, but did not know which of them (if any) was correct one, how would you find out? The procedure is exactly as discussed.

In summary, the basic way to arrive at certainty is by first establishing internal consistency. If there is internal inconsistency then the particular postulation is false and *nonsense* and must be rejected (Proposition 1).

If internal consistency has been established then it remains as theory only so long as there is no external inconsistency (Proposition 2). This requirement for something deemed to be a valid theory does not use falsification with respect to us being able to put forward testable hypotheses which are to be falsified, for, given the circumstances and data it may not be possible to actually test anything. However, Popper's methodology becomes a special case of Proposition 2, which can be used in cases where we are able to put forward testable hypotheses.

If the external inconsistency for the central tenets or claims of the theory are found then the theory is false and must be rejected. If interconnected evidence is found, by the process of elimination by contradiction, then a theory is validated into fact and must be accepted (Proposition 3). The process of elimination by contradiction does not mean that we have to check an infinite number of possibilities and eliminate them because our theory (key) may fit an observation (key-hole) exactly and by turning that key we may open the door to fact and certainty.

2.2 Implications of the Big Bang

In the above postulations showing the 'transition' of the status of theory into fact, it has been mentioned that something does not have to be seen visually to be proven. We are unable to see many things, but we know that they exist by extrapolation or from their effects. For example, we do not see gravity but know it exists because things fall to the ground. We do not see oxygen but we know that it exists because we breathe it. We cannot have an adequate mental picture of the applied mathematical concept of plus and minus infinity, however, we surely know that such concepts are facts. There are many ways to see the effects of something and therefore know of its existence. This is the rational methodology which leads to facts and certainty. Similarly, one of the effects of this universe is the intelligent way in which the Universe has been designed. The cause of the universe, therefore, must be an intelligence. Again we do not have to see this intelligence visually to know that this intelligence exists. We see all of the myriad effects in a remarkable universe that could only have been the outcome of the some creative singular intelligence. We, therefore, can see the *effects* of an intelligence. The intricate tapestry of nature is interconnected precisely and optimally to allow for a balance in the myriad systems of life, in the air we breathe, in the oceans, in the distribution of the animal and plant life, in the location of our earth from the sun, in the sun's orbit amid a cluster of stars, which themselves swirl in an uncounted hierarchy of clustered formations, in an ever-expanding universe whose gravitational and expansional forces are poised at a knife-edge, in the interplay of this ordered universe.²

Cressy Morrison, astronomer and former president of the New York Academy of Science, gives seven reasons to postulate why, as a scientist, he believes that there is an intelligent Creator, three of which are: Firstly, "By unwavering mathematical law we can prove that our universe was designed and executed by a great engineering Intelligence." Secondly: "The resourcefulness of life to accomplish its purpose is a manifestation of all-pervading Intelligence". Thirdly, "By the economy of nature, we are forced to realize that only infinite wisdom could have foreseen and prepared with such astute husbandry."³

Physicist Paul Davies remarks on the universe's origin:

It is hard to resist the impression of something — some influence capable of transcending spacetime and the confinements of relativistic causality — possessing an overview of the entire cosmos at the instant of its creation, and manipulating all the causally disconnected parts to go bang with almost exactly the same vigour at the

². Goodwin, Brain. (1994), *How the Leopard Changed its Spots: The Evolution of Complexity*.

Huntley, H.E. (1970), *The Divine Proportion: A Study of Mathematical Beauty*.

Morrison, A Cressy. (1944), *Man Does not Stand Alone*.

Pagels, Heinz R. (1986), *Perfect Symmetry*.

Schneck, Marcus. (1991), *Patterns in Nature: A World of Colour, Shape and Light*.

Thompson, D'arcy. (1990), *On Growth and Form*.

³. Morrison, Cressy. (1988), "Does God Exist?" in the *Philosophy and Contemporary Issues*, by John R. Burr and Milton Goldinger, pp. 98-101.

same time, and yet not so exactly coordinated as to preclude the small scale, slight irregularities that eventually formed the galaxies, and us.⁴

Could the origin of all this wonderfully harmonious interpenetration of order be due to mere Chance — or Intelligence? The cumulative probabilities for the development of life-forms and everything else in the Universe, known and yet unknown, is mathematically zero if it were to be the product of Chance. In fact, the proof for the existence of a Singular Intelligence, that is, a creator who is a unique single entity is no different in methodology than trying to prove the existence or non-existence of, for example, leaking invisible carbon monoxide. In proving the existence of an invisible gas we can know of its existence by the effects it causes, and likewise for the existence of such a Creator we can realize such an entity's existence by the effect of intelligence engrained in the structures and processes in the Universe. Therefore, by the usage of the same process we can eliminate the artificial separation between physics and so-called metaphysics even though such a Creator is not subject to the confinements of space-time. In order to see this, let us examine the relationship between space-time and the purported existence of a singular Creator.

It has already been established that this universe of space and time had a conspicuous origin, and that the Big-Bang is a fact. We also know that from nothing comes nothing. This universe is something, so what was there when the universe was not in existence? Was there an infinity of universes before this one, or at least one eternal universe prior to this one? Or was there just One Singular Creator of this universe that we know of? Note, that in all cases, we have to contend with the notion of eternity, which surprisingly, is usually thought of as being problematic only when it comes to the question of a Creator, but not when it comes to an infinity of universes, (or one preceding infinite universe). However, if one is impartial, one will measure everything by the same yardstick for both scenarios. Eternity in itself, is not problematic when ascribed to this Intelligence. Space and time encapsulate beginnings and ends. But a Being not dependent on time-space does not have to suffer death, or be born and can be eternal. Opting for an infinity of the universes, however, does not in the least, explain the intelligence engrained in the cosmic system. Postulating a unique Originator, on the other hand, does explain its intelligently designed structures and functions. This Creator-Originator is the One who created the perspicaciously integrated, planned and guided interrelations in the processes of nature, which include the oftentimes arrogant but relatively infinitesimal created intelligences which have the capacity for volition called human beings. This intelligence may well have built biological evolution into the scheme of nature, as a goal directed enviro-biological mechanism.

In fact, resorting to the infinity of universes scenario, is akin to escapism; it is strikingly reminiscent of the theory for the origin of life which advances the idea that entities from distant planet — from another stellar system — seeded the earth with incipient lifeforms. Over time, these have developed into homo-sapiens. But, the question remains: What about that other distant planet, how did life originate there in the first instance? From yet another planet, and so on, ad infinitum... ? Infinite universes suffer the same regression.

⁴. Davies, Paul. (1982), *The Accidental Universe*, p. 95.

2.3 The Big Bang ‘Controversy’?

It has been shown in this chapter that the ‘Big-Bang’ is a fact. Yet there is the general impression among people that it is not legitimate for it to be considered as a fact, because the subject is ‘controversial’. In this section what is being suggested is that it is not even controversial in the usual sense of ‘controversy’. We must reflect on what ‘controversy’ really is. Controversial issues are more prevalent in moral dilemmas where there are some personal desires and vested interests influencing one's choice. For example: the usage of an innocent baboon's heart for saving the life of a helpless little girl is controversial. Any choice taken in this matter is emotional and would not be without controversies.

In the case of the Big Bang, there is no real controversy. Instead, what you have is a psychological reaction. The fact that the universe has had an origin is deeply disturbing for many individuals because it has an implication extending far beyond the borders of ‘science’. Indeed, this fact thrusts right into the consciousness of every human being because it implies a Creator and an Originator, something which many may want to deny, for one reason or another. If it is true that there is a Creator responsible for this universe, then his existence has a definite unpopular implication on people's desires, behaviour and codes of conduct. That is because, the existence of the Creator, would be at the basis of every single issue. On the other hand, if there is no Creator, for many people then conveniently there is no accountability. Another reason for this denial is that, when it is evidenced that there is a Creator, most people think of the type of Creator that is found in mystical and irrational belief systems such as the one in Christianity. For many reasons there has been a great counter-reaction against Christianity and other similar ‘belief systems’— especially in the twentieth century. In some cases, in an attempt to reject particular mystical or anthropomorphic conceptions of God, people have rejected the existence of any type of Creator.

When the notion of "Big Bang" was first being developed and then when evidence was found for it, some scientists decided to concoct a rival theory — the steady-state theory — which would do away with an origin. However, this theory was debunked because it violated the principle of the conservation of matter and energy. Similar defective theories are, at present, being put forward; these are redundant and are being proposed solely for psychological reasons. For example, there is a theory that the universe is not expanding and that it is eternal, having evolved from pre-existent plasma. This was recently argued by Eric Lerner, in *The Big Bang Never Happened*. Lerner states that the Big Bang is erroneous because it does not explain adequately the formation of the galaxies after the Big Bang event; however the plasma theory does account for galactical formations.⁵ But, as it was suggested earlier, the Big Bang is a fact and the question of the formation of the galaxies is theoretical — these are matters only of detail and therefore do not undermine the Big Bang origin event. However, Lerner's book, itself was written prior to the new discovery in 1992 which explains the fluctuations in the background radiation, explaining in principle the galactical formations. Indeed, because of this very fact and its ongoing re-corroboration, Lerner's book has been proven to be totally fallacious in its central tenets against the Big Bang. In an understandably re-published edition in 1992 (Vintage Books), in the new preface, he still dogmatically clings to the wrong

⁵. Lerner, Eric J. (1991), *The Big Bang Never Happened: A Startling Refutation of the Dominant Theory of the Origin of the Universe*, pp. 274-275.

notion, claiming that the information gained by the COBE satellite on the discovered fluctuations does not exactly show what was predicted by physicists. The difference between the measurement of COBE and theoretical expectations is only a matter of trivial detail, however, and does not in the least undermine the Big Bang. In cases like this, one has to fine tune or correct either the details with respect to calculations, or perhaps improve the technical resolutions of the measuring instruments. Astrophysicist Michael Rowan-Robinson, who was a leading participant in the mapping of the distribution of galaxies by the Infrared Astronomical Satellite (IRAS) comments on the meaning of the information COBE (Cosmic Background Explorer Satellite):

The deeper meaning of the ripples, though, is that they show that we seem to understand the universe well enough to trace structure back to only 300,000 years after the Big Bang. Radio and microwave astronomers around the world have been trying for decades to find these ripples, to show that we really do know how galaxies and clusters arose from an initially smooth, hot universe dominated by radiation. Even if the COBE ripples do not exactly correspond to the density fluctuations from which galaxies will arise, because they are on much too large a scale, the detection of the smaller-scale fluctuations should not be long delayed now. Seventy years ago we knew nothing of the expanding universe. Fifty years ago we had no concept of the Hot Big Bang and it is less than thirty years ago that we saw the first evidence for such a picture. Now we can say with confidence that we broadly understand the evolution of the universe from a time 300,000 years after the Big Bang until today, thirteen billion years or so later (with lots of details to be filled in). Our understanding of the origin of the light elements shows that we safely extrapolate this picture back to a time one second after the Big Bang.⁶

It is remarkable that even many leading scientists have disconnected thinking when it comes to the question of origins. Take, for example, Stephen Hawking. He has suggested that there is no origin of the universe in time. In order to prove this, what he does is to construct an analogy. However, he then fallaciously thinks of the analogy as being reality. In fact, Hawking is presenting the model of reality for reality and has ignored the importance of a very crucial aspect of reality. We shall discuss this below. But first, let us see what he concludes regarding the question of origins:

The idea that space and time may form a closed surface without boundary also has profound implications for the role of God in the affairs of the universe. With the success of scientific theories in describing events, most people have come to believe that God allows the universe to evolve according to a set of laws and does not intervene in the universe to break these laws. However, the laws do not tell us what the universe should have looked like when it started — it would still be up to God to wind up the clockwork and choose how to start it off. So long as the universe had a beginning, we could suppose it had a creator. But if the universe is really

⁶. Rowan-Robinson, Michael. (1993), *Ripples in the Cosmos*, pp. 194-195.

completely self-contained, having no boundary or edge, it would have neither beginning nor end: it would simply be. What place, then, for a creator?⁷

Hawking proposes that at the beginning of the universe, time did not exist and was just homogeneous with space — just another space-like dimension. He has used the analogy of the balloon's surface (2 dimensions), as representing space (3 dimensions). He then says that real time can be considered as 'imaginary time'. Hence, there is no boundary in time, just as there is no boundary on the surface of a sphere, if for instance, an ant was walking on it. If there is no boundary in time (i.e. no origin) then the universe is eternal. Is it perhaps with a sleight of mind, that this eminent physicist appears to be trying to escape from the idea of the origin? The question is: why should one be forced to accept the notion of time as described in his analogy? In fact, Roger Penrose, the co-theorist with Hawking on singularities, holds quite the opposite view. Indeed, what he says boils down to the fact that the origin of the universe — the origin of time and space — is so unique that for it to happen by chance is indeed a severe stretch of the imagination, to say the least:

This [calculation] now tells us how precise the Creator's aim [to produce our universe from a phase space of possible universes] must have been: namely to an accuracy of

one part in $10^{10^{23}}$.

This is an extraordinary figure. One could not possibly even write the number down in full, in the ordinary denary notion: it would be '1' followed by 10^{123} successive '0's! Even if we were to write a '0' on each separate proton and on each separate neutron in the entire universe—and we could throw in all the other particles as well for good measure—we should fall far short of writing down the figure needed. The precision needed to set the universe on its course is seen to be in no way inferior to all that extraordinary precision that we have already become accustomed to in the superb dynamical equations (Newton's, Maxwell's, Einstein's) which govern the behaviour of things from moment to moment.⁸

Astonishingly, that which cannot be ignored in this discussion is often ignored by sceptical participants. That is, things like order, precision, complexity, growth, goal-directedness, purpose, harmony, balance, functionality, complementarity, optimality, beauty and perfection are not at all characteristics of chance and randomness. All to the contrary, they are characteristics of supremely-crafted design. This assertion is surely open and beckons challenge and falsification by the sceptic. Consider the scenario of a vicious tornado, ravaging a car scrapyards, which, subsequent to its turbulent passage, after the dust has settled, happens to produce an elegant brand new 1995 White Lamborghini with AM/FM stereo and cruise control. What would be the probability of such an accidental outcome? Or, suppose that an earthquake occurs: What would be the probability for all the various necessary solutions in a medical lab to fall down and become an admixture of exactly

⁷. Hawking, Stephen. (1988), *A Brief History of Time*, pp. 140-141.

⁸. Penrose, Roger. (1989), *The Emperor's New Mind*, p. 344.

the right proportion to produce a new medicine that could cure a deadly disease such as cancer? Or, what would be the probability for all the letters in this book unscrambling themselves to re-form these meaningful and structured sentences to produce this book by sheer coincidence? No sane person can argue that such events and cases are probable by chance? Now, compare these scenarios with the probability of one in $10^{10^{23}}$ of an accidental universe with numerous precise conditions which were necessary, in order for life on earth to have developed to the way it is now. Yet, there are many 'hotshot' scientists and philosophers who push their own cerebral matter and the public into thinking that the creation of the universe and life on earth were accidental processes from the very beginning to the present!

Interestingly, it must be noted, when referring to probabilities, that for practical purposes, mathematicians argue that events with a probability of less than one in 10^{50} are considered as impossible, since their likelihood of occurrence within a reasonable timeframe is negligible.⁹ The probability calculated by Penrose for the chance occurrence of the cosmos is, needless to say, unimaginably smaller than that and hence impossible!

Penrose's view of the origin of the universe is realistic, not only for considering an extremely infinitesimal probability, but also because he takes into consideration that aspect which Hawking takes so lightly, namely, entropy. Entropy is associated with time and if we really want to understand the universe we cannot dissociate entropy from the rest of physics. We must seek ways to incorporate it, because this is the reality of the integrated universe.

Another attempt to make people, especially laymen, think that the Big Bang is highly controversial is the notion that a vacuum is not perfectly empty and that 'quantum or vacuum fluctuations' in it, produce something from almost nothing; therefore, if this is the case, then the singularity, that is, the origin of the Big Bang, was also produced from a vacuum, or a vacuum like state:

Vacuum Fluctuation theories of the origin of the universe, in combination with inflationary views of the expansion of the universe, depict the Big Bang as the end-product of the quantum fluctuation of a primordial vacuum. A vacuum is seen here as being saturated with quantum fields and as being subject to fundamental fluctuations (a prediction of quantum physics). When strong enough, the fluctuating energy fields appear briefly as "virtual" particles and then disappear.¹⁰

However, the obvious point which is not brought up is that: How can one speak of the Big Bang arising out of a quantum field when there was no space at the origin? On the other hand, if there was some type of dimension, then that dimension was something akin to another type of a universe in which there would be this purported fluctuation. But, one could yet again legitimately ask: Why should there be a fluctuation in the first place — what could have been responsible for it? And where did that arise from — if it did? Here we get into the infinite regress problem once more.

⁹. Hitching, Francis. (1982), *The Neck of the Giraffe: Darwin, Evolution, and the New Biology*, p. 53.

¹⁰. Margenau, Henry and Varghese, Roy A. (1992), *Cosmos, Bios, Theos*, p. 8.

Physicist Heinz Pagels, one of the supporters of the Vacuum Fluctuation theory discusses his reservations:

The nothingness 'before' the creation of the universe is the most complete void that we can imagine — no space, time or matter existed. It is a world without place, without duration or eternity, without number — it is what the mathematicians call 'empty set'. Yet this unthinkable void converts itself into the plenum of existence [and we would hasten to add the order, diversity and beauty of life on Earth] — a necessary consequence of physical laws. Where are these laws written into that void? What 'tells' the void that it is pregnant with a possible universe? It would seem that even the void is subject to law, a logic that exists prior to space and time.¹¹

Anthony Flew¹², the champion of the atheists and a well-known scientific philosopher, admits candidly in the book *Cosmos, Bios, Theos*, that the Big Bang origin has created a profound problem for the atheistic dogma of an eternal universe:

Remarkably, Professor Flew goes on to "confess" that the atheist "has to be embarrassed by the contemporary cosmological consensus. For it seems that the cosmologists are providing a scientific proof of what St. Thomas [Aquinas] contended could not be proved philosophically; namely, that the universe had a beginning. So long as the universe can be comfortably thought of as being not only without end but also without beginning, it remains easy to urge that its brute existence, and whatever are found to be its most fundamental features, should be accepted as the explanatory ultimates. Although I believe that it remains still correct, it certainly is neither easy nor comfortable to maintain this position in the face of the Big Bang story."¹³

When questions of the origin, structure and processes of the universe are broached, most scientists, students and academics are suffering from either touches of relativism or full blown relativitis. The educational systems in the Western countries and indeed, for that matter in the Eastern countries, which are blindly emulating them are permeated with notions of relativism, where there is no consistent methodology for sorting out apples from oranges, science from pseudo-science, fact from theory, and truth from falsity.

Although, it has been proven that the Big Bang is a fact, there are still many who would reject it. This is due to the fact that most people, in our present day 'educational systems', have been trained not to accept it as fact because of relativistic outlooks. What needs to be emphasized is that the only

¹¹. Ibid., p. 9.

¹² *From Facts to Values* was written in 1995, when Anthony Flew was an atheist. In 2004, he disclosed that he had developed an affinity with Deism because of the very same type of information presented in *From Facts to Values*. We can already see his opening up to the idea of God in the quotation given as far back as 1992. He died a Deist on April 8, 2010.

¹³. Ibid., p. 15.

way one can disprove the Big-Bang, is to prove that the universe is not expanding and that it is just an illusion or that one cannot extrapolate back to the origin, specifically for the Big Bang scenario. However, anyone who asserts this must bring forward concrete proof for the assertion.

2.4 Is the Universe Goal-Directed? The Teleological Argument Revisited and Re-established

The fact of the big-bang origin and the directionality of the universe attests to the fact that it appears to be pursuing an intention. All of the components in this universe, as well as those on the earth, as discussed earlier, have been clearly designed to fit and function together harmoniously. It is indeed impossible to dispense with the idea of purposiveness. However, due to a counterreaction of many thinkers against anthropomorphic and mystical notions of a deity, in addition to various psychosociological reasons, the obviousness of a goal directed purpose — ‘teleology’, in the jargon of philosophers — is either denied completely, or diffused by the misuse of language. For example, Ernst Mayr, the well-known contemporary evolutionary biologist, among others, attempts to disintegrate teleology by the usage of the words ‘teleomatic’ and ‘teleonomy’¹⁴. However, the concept that embodies all these qualities of design, is still a supreme intelligence, incomparable to anything in this universe. To circumvent this intelligence, one would have to attribute it to something in this universe such as "Mother Nature". Scientists such as Mayr are simply playing futile word-games in an attempt to evade the interrelated purposiveness of both animate and inanimate things in this universe. Mayr reduces teleological into teleomatic and teleonomic, ascribing the latter to being a ‘program’. In his scheme, the program is a function of ‘natural selection’ when it deals with organisms, which is governed by Chance, not Intelligence. However, if as he says, inanimate objects are programmed, then the concept of ‘program’ explicitly implies the concepts of origin, planning, purpose, goal directedness, integration and above all a *programmer*. One can, therefore, still rightfully ask: who is the programmer? Even if the word program is not used and some other word, such as ‘algorithm’, is used to describe the underlying mindlessness of development in the universe by natural selection, one cannot escape the fact that an algorithm has to be written by someone and does not arise by chance, and also the fact that the logical structuring of programs is through algorithms.¹⁵ The factor of intelligence in the matrix of reality is wholly inescapable. Everything then, converges to question of a singular Intelligence which is what has historically and sociologically been put aside in our relativistic age of confusion — the Intelligence that set the program or the boundary conditions. Two contemporary American cosmologists, Barrow and Tipler elaborate on this issue:

The limitation of explanation in terms of mechanical causality can perhaps best be understood by comparing a living being to a computer. As Michael Polanyi has pointed out the internal workings of a computer can of course be completely understood in terms of physical laws. What cannot be so explained is the computer's

¹⁴. Mayr, Ernst. (1988), *Toward a New Philosophy of Biology*. As defined by Mayr in Chapter (3) , teleonomic has to do with the "processes (behaviour) whose goal-directedness is controlled by a program". On the other hand, teleomatic: "processes which reach an end state caused by natural laws (e.g., gravity, first law of thermodynamics) but not by a program", p. 60.

¹⁵. Dennett, Daniel C. (1995), "Darwin's Dangerous Ideas", *The Sciences*, pp. 36-37.

program. To explain the program requires reference to the *purpose* of the program, that is, to teleology.

Even the evolution of a deterministic Universe cannot be completely understood in terms of the differential equations which govern the evolution. The boundary conditions of the differential equations must also be specified. These boundary conditions are not determined by the laws of physics which are the differential equations. The universal boundary conditions are as fundamental as the physical laws themselves; they must be included in any explanation on a par with the physical laws.¹⁶

Many have used the notion of biological evolution to escape the question of purpose and design. To tackle the question of evolution itself would require another book. However, in connection with the Darwinian belief that the only overall control process is natural selection, numerous problems exist, the greatest of which remains the question of intelligence. Richard Milton, science journalist elaborates in his critique of the Darwinian evolutionary theory:

I believe that [even] if biological processes were so simple [that is, as simple as the most elaborate human designed computer spell-checking program], they too would become functionally corrupt unless there were some underlying or overall design process to which the simple mechanisms answered in a global way, and which were capable of taking action to correct mistakes. This is the mechanism that we see in action in the case of the 'eyeless fly', *Drosophila* [when artificially mutated flies return to normality after a few generations]; in Dreisch's experiment with the sea urchin and Balinsky's with the eye's of amphibians; and the 'field' that govern's the metamorphosis of the butterfly or the re-constitution of the cells of sponges and vertebrates.

[The theory of] Natural selection works on populations, not individuals. It is capable only of making sure that creatures with massively fatal genetic defects die in infancy, or that populations that are genetically dispersed will eventually produce sterile offspring. It is a poor feedback mechanism in the sense of exercising an overall regulating effect... Because natural selection offers only death or glory it cannot provide the microscopic adjustments that the individual needs. Yet we are asked to believe that a mechanism of such crudity can creatively supervise a program of gene mutation.

This is plainly wishful thinking. The key question remains: what is the location of the supervisory agency that oversees somatic development? How does it work? What is its connection with the cell structure of the body? Whether they are

¹⁶. Barrow, John D. & Tipler, Frank J. (1988), *The Anthropic Cosmological Principle*, p. 75.

Darwinists or vitalists, biologists have begun to talk in terms of ‘morphogenetic fields’.¹⁷

Such questions that the freelancer, Milton asks, are not only never asked but are avoided much as a zebra runs away from a hungry lion.

However, let us complete Milton's assessment. We should ask: If there is a morphogenetic field as a governor, what governs and has devised that? Even if we assume that there is a special or supra-program controlling the subprogram of genetic shuffling, the question of a *Programmer* i.e. an Intelligence — a Supreme Mind behind the creation of space and time — not only still remains, but becomes even more viable because of the greater and greater sophistication that is revealed each time we peel the layer of designed controlling processes. Eventually, one may be certain that behind the ‘programming’ of the universe there must be a Singular Intelligence and that the entire universe has arisen from the creative act of this Intelligence. We may surmise from this certainty of an Intelligence, that every astrophysiological and biological development was encapsulated right from the very beginning with intentionality. The lack of following through one's thoughts, and concluding ‘morphogenetic fields’ or whatever as the ultimate source of creation, is a prime example of unfinished and erroneous thinking. Only by completing the thought process to its logical conclusion we would realize the existence of a Singular Intelligence behind the totality of existence.

What about the objections to the ‘argument from design’ or the teleological argument? The basic problem with the view which attacks the design argument has been the use of secondary non-fundamental arguments as a distractive mechanism which has had the tendency to detract from the question of the existence or non-existence of a Intelligence, which is the real issue at hand. For example, the leading British philosopher, A.J. Ayer said that: "[It is] to be noted that the analogy with the makers of human artefacts is still further weakened if we suppose the material world to have been created out of nothing at all."¹⁸ Now, what Ayer is arguing here is that the design argument, which uses the analogy of human design to extrapolate a Divine creator and designer is deficient because, when human beings design things, they already have something to work with, and this type of rearrangement of matter to produce things is unlike the organization which results when God creates *ex nihilo* (out of nothing, thence by evolution etc.). However, this assertion does not refute the existence of a non-spatio-temporal Intelligent Being. It is only an argument against the *how* of the arrangement of order by an intelligence, not *if* or whether an Intelligence has created that order. If one were to pick-up any book arguing against the design argument over the past 150 years or so, the pattern of argumentation would be the same, where the denial of the existence of God is based on what one may term as being the fallacy of irrelevance, conflating the categories of *how* and *if*, by diverting *how* into *if* and demolishing the *if* using an argument based on *how*. It is crucial to make this distinction between these two categories of *how* and *if*. This is the main problem with the argument against teleology, initially concocted by Hume and why it is utterly baseless and as such is a non-argument, which has been accepted blindly over the centuries.

¹⁷. Milton, Richard. (1992), *The Facts of Life: Shattering the Myth of Darwinism*, p. 201.

¹⁸. Ayer A.J. (1982), *The Central Questions of Philosophy*, p. 219.

However, the Humean argument can be debunked from the various other angles. It is further argued by Hume and his followers that to move from the human world where there is always a designer or a maker for every man-made artefact to a meta-human world of nature and Creator of nature is to indulge in fallacy. Those who argue against the existence of such an Intelligence say that nature has no purpose written on it. We can say that aeroplanes have a purpose because human beings make aeroplanes for a specific purpose, but how can we presume the same for nature? There is no causal link between the human experience and the conclusion that there is a God.

In the first place, this pseudo-argument which surprisingly has been taken seriously post-Hume does not really pose any challenge for the teleological argument. Why on earth can one not derive the conclusion that, for example, the Swordbill hummingbird's extra long beak is for gaining access to nectar inside equally deep flowers. In fact, every single thing in nature has been similarly designed for one or multiple purposes, and further, the interconnectivity between all the animate and inanimate designed objects must necessarily imply not only a particular purpose but a universal purpose. That is because, in such a interconnective and multi-purpose system: "every part not only exists by *means* of the other parts, but is thought as existing *for the sake of* the others and the whole"¹⁹. Therefore, it is the functioning of each part that maintains the sustenance of the whole of the system. We shall discuss this in more detail in the next chapter.

For the sake of argument, if we grant Hume's premise, could such a conclusion be built upon this premise? To say that one cannot make a certain conclusion about the world we live in as an inference from human experience is to posit a distinction or a boundary between human experience and the system as a whole. Now we take it as a truism that as between the two conclusions the logically valid one is that which follows as a necessary conclusion in rational discourse, or is supported by solid evidence. In this case, the distinction sought to be introduced into the discussion, namely, that one cannot reason from human experience to the system as a whole, is neither rationally necessary nor supported by the evidence. Since the evidence supports no distinction between human experience and the system as a whole, it follows that the inference from our experience about the system as a whole is a valid one and thus the conclusion that this world was made by a skilled Being is only a logical result of untainted rational discourse.

That there is indeed no distinction between human experience and the system as a whole, is evinced by the possibility of evolution. Evolution, rather than destroying, further corroborates teleology. In fact, the teleological approach reinforces the possibility of the evolution because human designs, through cybernetics and robotic systems, are verging on automated and self-replicating machines, not unlike theorized evolutionary mechanisms. If, there was indeed such a distinction between human experience and the system as a whole, then human beings could not, at least from the conceptual perspective, be moving in synthetic designs towards the methodology of the design in nature, as realized by the theory of evolution, which is supposed to have debunked the design argument. Indeed, it is an obvious fact of life that the human synthetic design of objects has borrowed heavily from nature in terms of ideas, structure and function, and as we gain greater knowledge of the mechanics of things, we have the potential to come closer to natural designs in terms of processes as well.

¹⁹. Kant, Immanuel. (1951), *Critique of Judgement*, p. 220.

When one realizes the possibility of evolution as the mechanism for development and that a Singular Originator has certainly created life and developed it somehow, perhaps through the process of evolution, then one also realizes that life may have been written as a program (to use an analogy) and that the Originator, in this case, is not a God of the gaps who intervenes every now and then to fix problems in nature. One does not, with this conception of a Creator, believe in a created system in which 'skyhooks' (imaginary supportive constructs) are introduced to miraculously operate the laws in the universe at the intermittent whims of the Creator to get things going. The real miracle lies in the intelligence with which the processes have been designed, which display the transformative power of cause and effect relationships and the unification of all the laws, which prove the singularity of the Creator. Given all the evidence that surrounds us, how then, could one be so adamant as to deny such a blatantly obvious fact of an infinite Intelligence as being the Creator? What could be the purpose behind such an obtuse denial? As the American educator J.B. Emerson neatly puts it: "Nature is too thin a screen; the glory of the One breaks in everywhere."

2.5 Teleology in Question: Purpose versus Randomness

Another bit of major confusion which tends to distort the perspective regarding the issue of the existence of God is the notion of randomness as opposed to purposeful development. As the brief discussion on evolution earlier highlights, the processes in nature are not random but based on laws. Indeed, genetics is not random but is based on precise rules which we are constantly fathoming. What are the laws or rules which govern the genes, though? Brian Goodwin, a pre-eminent theoretical biologist, who is dedicated to discover the basis of biological transformations, gives an analogy:

Split a bar magnet in two. You find you have two complete fields. The north-south polarity reasserts itself with each magnet, and if you subdivide it the process continues—fields have this quasi-holistic quality.

The parallel with what happens in cell division is very revealing. Cells divide into two in a way which is typical to all organisms, and you can discern polarity just as you can in bar magnets.²⁰

Cell division is regulated geometrically only up to a certain stage after which other forces start predominating. There are the basic and fundamental field processes which then seem to be modified by genes much as the spiral formed in a draining bathtub yields altered shapes upon one placing one's finger in the water (the finger being analogous to the gene, and the shape of the water to the fundamental field processes)²¹. Furthermore, theoretical biologist Stuart Kauffman, in his recent book *The Origins of Order: Self-Organization and Selection in Evolution* has investigated the dynamic results of basic rules that govern the functions of units that he has used as representation of

²⁰. As cited by Hitching, Francis (1982), in *The Neck of the Giraffe*, p. 167.

²¹. Ibid., p. 167.

genes. Kauffman's research indicates that the interaction and networking between genes operating on simple principles, together as an ensemble, leads to emergent order which is characterized by maintenance, reproductive and regenerative functions. Kauffman has discovered, from such modelling, that a square root relationship between gene number and mean cycle length exists.²²

This being the case, even if natural selection is being posited as a mechanism, it must have, as its basis *law* because genetics is not in reality divorced from the other forces which operate in the universe. Indeed, no chaos exists anywhere — only various levels of order. No randomness exists behind the levels of complexity — only various levels of ignorance.

The other fact is that it is undeniable that animals are well adapted to their niches and that in every age this has been the case. The notion of adaptation is, indeed, the paramount question in evolutionary theory. As evolutionist Nile Eldredge comments:

In contrast, the focus of this book is on the original (and still very much central) question of evolutionary biology: the explanation of phenotypic diversity and the design apparent in nature (the adaptive "fit" of organisms to their environments) approached through analysis of the biotic and physical environmental context of such change.²³

One can note the inescapable teleology in the preceding passage. Adaptation implies design and design implies a designer which implies an Intelligence. Indeed, the issue of adaptation (best fit) is surfacing in the speculation of the development of a complex phenomenon such as flight. Even if random biological evolution has indeed occurred, it is a misperception that animals in bygone epochs were not well adapted to their niches. Contemporary theorists themselves are now realizing this:

Bock (1979) has criticized Simpson's (original 1944) model of quantum evolution because, in common with saltational models, it involves no intermediate *stable* taxa with organisms successfully adapted to a niche somewhere between the starting and end points of the transformational series under analysis. To Bock (1979), all steps in such a macroevolutionary sequence are adaptive and under the control of directional natural selection; his model obviously contrasts with Simpson's initial formulation of an inadaptive (and preadaptive, a concept Bock endorses) phase.²⁴

This means that if directional evolution did occur, it was based on the balance — there was no randomness about it. It was proceeding in such a way so as to create the emergence of mammals and hence human beings. There was even a perspicuous plan behind the extinctions! Interestingly enough, even those who believe in chance and natural selection such as David M. Raup, a statistical palaeontologist and expert on extinction studies, concludes the following:

²². Kauffman, S.A. (1993). *Origins of Order: Self-Organization and Selection in Evolution*, p. 482-483.

²³. Eldredge, Niles. (1989), *Macro-Evolutionary Dynamics*, p. 10.

²⁴. *Ibid.*, p. 38.

[If extinctions did not occur] many of the innovations in evolution, such as new body plans or modes of life, would probably not appear. The result would be a slowing of evolution and an approach to some sort of steady-state condition. According to this view, the principal role of extinction in evolution is to eliminate species and thereby reduce biodiversity so that space–ecological and geographic–is available for innovation....

NASA and the other agencies around the world that search for extraterrestrial life—especially intelligent life—have recognized the importance of extinction in evolution. Twenty years ago, we thought that stable planetary environments would be best for evolution of advanced life. Now NASA is thinking explicitly in terms of planets with enough environmental disturbance to cause extinction and thereby to promote speciation.²⁵

On this issue, Niles Eldredge similarly concludes that:

Mass extinctions are cross-genealogical and occur without regard for the stage of accrual complex adaptations within single lineages. Mass extinctions commonly eliminate complex adaptations and reset the ecological, hence evolutionary, clock. Thus, without mass extinctions, more elaborate complex adaptations would likely accrue, but, on the other hand, truly novel adaptations—the sort that mark large-scale taxic differences, and the usual stuff of "macroevolution" — would be correspondingly even more rare in phylogenetic history than they appear to have been.²⁶

The concept of Intelligence is yet inescapable from even another direction — that is, from the concept of "pre-adaptation":

...Simpson invoked allometrically enlarged molars in grazing horses as a preadaptation; once the molars became sufficiently enlarged, they were suitable to be used in grazing, and selection then began rapidly to drive some horse lineages up the steep gradient of the grazing adaptive peak.²⁷

The author, realizing that preadaptation implies teleology states:

...the term "preadaption" in evolutionary biology has often suffered from an almost mystical sense of premonitory [preplanned], directional change, as if future evolutionary modifications are somehow anticipated by earlier stages of phenotypic transformation. By choosing such clear examples—in which utterly "co-opted"

²⁵. Raup, David M. (1991), *Extinction: Bad Genes or Bad Luck?*, pp. 187-188.

²⁶. Eldredge, Niles. (1989), *Macro-Evolutionary Dynamics*, p. 210.

²⁷. *Ibid.*, p. 50.

functions are so starkly different from previous functions — Gould and Vrba (1982) clarify the distinction between current utility and mode of historical development.²⁸

If something is preadaptive (or predesigned, according to the chance-based evolutionists own definition for adaptation) and premonitory (monitor beforehand) then one cannot escape the singular meaning and singular implication of such notions. When, for example, one claims that if it is sub-zero degrees Celsius, the conditions must be present to "freeze pure water", where sub-zero degrees Celsius can only have one concomitant outcome — to "freeze" the pure water. There can be no other interpretation as to what is the outcome of freezing pure water; language and cause and effect are integrally coupled in such discourses and their meanings are clear. Similarly, the concept of *preadaptation*, far from carrying any mystical baggage, by necessity, requires foresight, preplanning, pre-preparation and premonitoring, not only in the theoretical scenario, but also 'out there', in concrete physical set-up. Indeed, if preplanning or premonitoring does not imply preadaptation and vice versa, then it is just as if to use an analogy, a 'scientist' expects that it is possible that proteins will not always be made up of amino acids; proteins imply amino acids just as preadaptation implies preplanning. Furthermore, inanimate matter and processes do not and cannot have the capacity to create in terms of adaptive structures and environments. It is not difficult to see, therefore, that such inconsistent thinking is itself mystical not rational, occultistic not scientific and downright paganistic. The paganistic aspect creeps in because such notions of preadaptation without a mind behind them, would imply that matter and processes possess intelligence, which they clearly do not. Indeed, it is these kinds of views which are, in this sense, almost mystical and not those of one who ascribes to a singular Intelligence as the Preadaptor of all things.

However, for argument sake, let us weaken our case, and use the 'proof by contradiction' argument taking what we would consider a primitive view, by siding with those who ascribe things to chance. Even those who believe in randomness know very well that randomness is constrained between limits and that there are the 'laws of statistics'. Modern chaos theory attests to this fact very well. As Jack Cohen, a reproductive biologist and Ian Stewart, mathematician point out:

Statistics is just one way for a system to collapse the chaos of its fine structure and develop a reliable large-scale feature. Other kinds of feature can crystallize out from underlying chaos—numbers, shapes, patterns of repetitive behaviour. Many of those features have their own intricate internal structure (for example, the Mandelbrot set) which is quite different from the underlying rules that generated the feature in the first place. The intricacy of the Mandelbrot set bears no obvious relation to the simplicity of the process that produces it. The rules for making a Mandelbrot set are dynamic; the internal intricacies are geometric. That's why we describe it as a complicated simplicity; there's no contradiction.²⁹

They further on state that:

²⁸. Ibid., p. 51.

²⁹. Cohen, Jack & Stewart, Ian. (1994), *The Collapse of Chaos: Discovering Simplicity in a Complex World*, p. 234.

Fine structure, be it patterned or chaotic, implies features. Even a system with no obvious features would possess the feature "featureless"; it's a Catch-22. Features arise because rules at one level of interpretation "simplexify" or "complicify" to give features one level higher.³⁰

Randomness, as it is understood by the present scientific community does not and cannot imply the non-existence of some form of creative agency for the universe. Randomness has bearing only on the nature or attributes of such an agency, not such an agency's existence. This is because if something is only partially random, then it is also partially organized non-randomly with respect to its structure and because of this, the organizational process and limits of randomness cannot be ultimately governed from within; they must, on the contrary, be so governed from without. In other words, the limits have to be set from the outside, by an outsider. From this, if the believers in chance still wish to remain logical, they have to concede that there is some type of intelligence that has created the universe. The only question then remains in respect of the nature and attributes of that intelligence. That such an intelligence certainly exists, they must indeed conclude, even if they completely neglect the fact of the existence of the balance in nature and the possibility of directed evolution.

The critique of natural selection as the evolutionary mechanism was discussed earlier. It is only one of many which shows its grave shortcomings. We strongly believe that within the next fifty years, if not earlier, natural selection will go the way of Freud's theory of psychoanalysis, yielding some insights but having a wholly untenable foundation, made obsolete. The type of biology that will be needed to understand how evolution has occurred is based on laws integrated with the wider aspects of science such as physics and chemistry, as Brian Goodwin states:

... my hope is that the diversity of living forms—or at least their essential features—can be accounted for by a relatively small number of generative rules or laws ["as a result of patterns and directions at the atomic or molecular level"]. It's too soon to start trying to explain how a bear changed into a whale. We need to know the laws that make form possible in the first place.³¹

Evidence is fast moving towards the convergence of the disclosure of an Intelligence, as opposed to Chance, and a sublime purpose, rather than blind and vicious randomness. Stephen Jay Gould, and indeed many of those who have agnostic and atheistic sentiments feel that the design argument is antiquated as it leaves out the element of chance; nature being based on natural selection is a devilish and cruel scheme of survival of the fittest, powered by impersonal random forces.³² However, as it has been illustrated already, natural selection at best is only a theory, not a fact. If Gould's punctuated equilibrium is a mechanism for natural selection, and at the same time is also regarded by him as a theory, then so is natural selection itself a theory, by force of logic. However, Gould deals with natural selection as if it were a fact.

³⁰. Ibid., pp. 433-434.

³¹. Hitching, Francis. (1982), *The Neck of the Giraffe*, p. 165.

³². Gould, Stephen Jay. (1990), "Darwin and Paley Meet the Invisible Hand", *Natural History*, pp. 8-16.

Now if it were realized that there is purposeful activity in evolution, though not necessarily of the Lamarkian kind, then one would see a purposeful and meaningful designer behind creation. The question which emerges, however, is one of efficiency. Indeed the efficiency of the process can only be known once we know how evolution is occurring. But even if we take the criticism of those who opine chance, that is, those who criticize the extinction of creatures, one must realize that efficiency itself is a function of purpose and purpose is a function of order. There may be a hierarchy of purposes, the purpose on the lower rung of the ladder serving and being constrained by that at the higher level. Looking at the results of the whole picture — the highest rung of the ladder — the universe appears to be pursuing an indescribably successful intention, in having been based on the balance and in the creation of entities such as human beings (and perhaps other human-like entities on other conceivable planets) who can either make or break the balance. To achieve the state where human beings have emerged in this manner from the Big Bang, would necessitate the *planned* extinction and development of species leading up to man, the details of which one may only speculate about at this point, but which must be deterministic (as evinced by the arguments in this book). Yet what justification do we have for a view which places the human being on the pedestal of most of sentient creation? This question hinges on the issue of the global purpose of the universe itself. In fact the British philosopher Ayer, raises this point when he comments that "the fact that ends are pursued and sometimes attained within a system is not a proof that the system as a whole is directed towards any end. What needs to be shown is that the entire universe presents the appearance of a teleological system."³³ Ayer concludes that no one has been able to show this.

Let us tackle this issue head on: From a discussion of the dynamic balance with which the universe has been shown to have been designed (which forms the major topic of the next chapter) one can see that the universe is an integrated dynamically balanced whole and that it has been purposely designed with free-willed creatures such as human beings in mind to see if they will uphold the balance. One of the most quantitatively stunning examples of this is the following:

Hoyle made a remarkable prediction: in the course of an intensive study of stellar nucleosynthesis he realized that unless [the reactions] proceeded *resonantly* the yield of carbon would be negligible. There would be neither carbon, nor carbon-based life in the Universe. The evident presence of carbon and the product of carbon chemistry led Hoyle to predict that [the set of equations] *must* be resonant with the vital resonance level of the C^{12} nucleus lying near ~ 7.7 MeV. This prediction was soon verified by experiment ... with the expected properties lying at 7.656 ± 0.008 MeV. ...[confirming] an Anthropic Principle prediction.

However, this is not the end of the story. ...Had the O^{16} level lain just above that of $C^{12} + He^4$, carbon would have been rapidly removed by alpha capture...

Hoyle realized that this remarkable chain of coincidences — the unusual longevity of beryllium, the existence of an advantageous resonance level in C^{12} and the non-existence of a disadvantageous level of O^{16} — were necessary, and

³³. Ayer, A.J. (1982), *The Central Questions of Philosophy*, p. 219.

remarkably fine-tuned, conditions for our own existence and indeed the existence of any carbon-based life in the Universe.³⁴

This clearly demonstrates that the Universe had been preplanned, right from the very beginning for the emergence of carbon-based life and was not developing in an erratic chance based manner. Barrow and Tipler, in their voluminous book *The Anthropic Cosmological Principle*, then pose the following question:

Although a small change in ... resonance levels in C^{12} and O^{16} , might so alter the rate of cosmological or stellar evolution that life could not evolve, how do we know that compensatory changes could not be made in the values of other constants to recreate a set of favourable conditions?³⁵

After some mathematical gymnastics, the two physicists conclude that: "If the attractor at x^* is 'strange' then there may be many other similar sets in the λ_i parameter space. This might ensure that there were other permutations of the values of constants of Nature allowing life."³⁶ What the authors of this speculation forget is that even if there were compensating factors, they would have to be so comprised and integrated precisely that they would lead to carbon-based life. Therefore, one cannot escape the situation with a quick wave of the mathematical wand. This argument is similar to an erroneous argument of a person who says that: "Knowing a human language in general is indeed a complex phenomenon and to utter a particular statement in English, with a sensible meaning, is indeed a remarkable achievement; however, maybe if the same thing were said in another language it would not be so remarkable!"

The other point which Barrow and Tipler are missing is that they are dealing with constants in nature which are not only so precise, but may indeed be the only arrivable ones in our particular type of space or space-time. In other words, in our type of universe these constants may indeed be the only constants existable because our space-time itself is unique in the sense that it can only yield one set of particular constants because of its 'structure'. Indeed, another set of constants might exist in a totally other universe which has totally other properties than our own — but that is a totally other universe — not the one in which we reside! And if we did reside in that other hypothetical universe we would be faced with the same set of questions as to the remarkableness of the existence of the constants in *that* universe.

2.6 Statistical Fallacy

Those who attempt to deny an Intelligence behind design try to hide behind the transparent mantle of chance. The word chance has come to be misused considerably. In fact, chance is a mathematical concept related to the probability of an event. For example, the probability of getting "heads" in a

³⁴. Barrow, John D. & Tipler, Frank J. (1986), *The Anthropic Cosmological Principle*, pp. 252-253.

³⁵. *Ibid.*, p. 254.

³⁶. *Ibid.*, p. 255.

coin-toss is 50%, or one half. This is because a coin has two sides, and hence there are only two possible outcomes and each is equally likely. In simple terms, we can say that the probability of an event occurring, P , is defined as the number of ways of achieving the desired event(s) divided by the number of ways of achieving all possible events. In this case, the number of desired events is one (heads), and there are two possible events (heads and tails), which yields the ratio $1/2$ or 50%. How about the probability of getting a six in the throw of a dice. We can get a six in one way and there are six possible outcomes; therefore, the probability would be $1/6$ or 16.7%. If we threw two dice expecting two sixes, we would only get this event happening once in about 36 attempts, because its probability is $1/36$. This is because there are thirty-six possible outcomes, and only one way of getting the desired outcome. As the total number of outcomes (the denominator in the equation above) increases, the probability decreases and the event becomes less likely. The probability of getting seven with a single die is therefore zero (because it is impossible) and the probability of getting a number between one and six, inclusive, is one (because it is certain). As stated earlier, for practical purposes, events with probability less than one in 10^{50} are considered impossible by the mathematicians, because their likelihood of occurrence within a reasonable time-frame is negligible. Applying these concepts to a physical phenomenon, consider the odds against producing 25,000 enzymes by chance in the absence of any intelligent laws governing chemical reactions. Assuming that each enzyme is a simple one made up of only 100 amino acids, the probability of producing the 25,000 enzymes works out to be one chance in $10^{2,825,000}$. Actually, the probability is considerably slimmer, because most enzymes are more complex than the proto-typical enzyme of 100 amino acids that we have considered.

For a comparison we may examine the probability of pulling out 10 cards in consecutive order (for example, pulling them out like this: *ace* followed by 2, 3, ..., 10) from a stack of 10 cards. This works out to be one chance in 3.6 million or 3.6×10^6 . Now suppose we wish to calculate how many cards we would have to pull out in succession like this to equal the probability of one in $10^{2,825,000}$ as calculated above, in order to gain a physical understanding of this probability. This number works out to be more than 500,000 cards, a stack at least several hundred feet high. The calculation for this is as follows: We wish to solve the following equation for n :

$$n! = 10^{2,825,000}$$

Applying Stirling's approximation to $n!$, we have:

$$n! = \sqrt{2n\pi} \left(\frac{n}{e}\right)^n \left(1 + \frac{1}{12n}\right) = 10^{2,825,000}$$

By taking logarithms on both sides and then iterating for n , we arrive at $n = 500,000$.

The probability of producing those 25,000 enzymes from *scratch* is the product of the probabilities of producing them from amino acids times the probability of producing the amino acids from simpler molecules, down to the probability of producing the molecules themselves from quarks and so on, over time. The total probability goes from vanishing small to incalculably small. Even if biological evolution has occurred (i.e. that species have transformed into other species) this cumulative property of probabilities must apply. Given the incredibly small probability of producing

25,000 enzymes from scratch, we need more than pure chance to account for this. As Richard Milton elaborates:

If Paley's watch is the argument from design, then the Darwinian case might be called the argument from probability. What does it really amount to?

Suppose we have a highly improbable event such as a perfect deal in bridge, where each of the four players receives a complete suit of cards. The odds against this happening are billions of billions of billions to one. Let us assume that since being manufactured the cards have been used for 99 deals and on the 100th time the pack was shuffled, the perfect deal arose. Can we say that each of these previous shuffles, deals and plays of hands (number 1 for instance) was a cumulative event that ultimately contributed to the perfect deal? Can we reduce the ultimate odds against the perfect deal by attempting to spread them around more thinly between the intermediate steps? Not *afterwards*, note, when we know the result, but at the time each step is occurring?

The answer is no, we cannot. Like the supposedly evolving DNA, the cards have a memory in that the previous deals have contributed to their current order and the ultimate perfect deal. But being part way towards a perfect deal does not alter the odds on the ultimate deal, because some of the key random events determining the ultimate outcome have not yet taken place.³⁷

The above analyses show that when one tries to circumvent the cumulative nature of probabilities over time, one falls into an elementary mistake, termed the 'statistical fallacy' by the geneticist, Francis Crick. This fallacy is apparent in arguments from biologists who try to lessen improbabilities by arguing that if a thing developed from A to B over millions of years, for instance, and that it is indeed improbable for something to have developed in one jump from A to B, if the probabilities are calculated along intermediate steps along the path from A to B, then one would not have to contend with such extremely low probabilities, or perhaps with only a few. Like the improbabilities cited by Penrose with respect to the unique origin of the universe, when one looks at biological examples, be they in space or time, one will not cease to be amazed at those who postulate the emergence of order by chance. As Bernd-Olaf Koppers, the biophysical chemist relates:

The human genome consists of about 10^9 nucleotides, and the number of combinatorially possible sequences attains the unimaginable size of $4^{1000 \text{ million}} 10^{600 \text{ million}}$. Even in the simple case of a bacterium, the genome consists of some 4×10^6 nucleotides, and the number of combinatorially possible sequences is $4^{4 \text{ million}} 10^{2.4 \text{ million}}$. The expectation probability for the nucleotide sequence of a bacterium is thus so slight that not even the entire space of the universe would be enough to make the random synthesis of a bacterial genome probable. For example, the entire mass of the universe, expressed as a multiple of the mass of the hydrogen atom, amounts

³⁷. Milton, Richard. (1992), *The Facts of Life: Shattering the Myth of Darwinism*, p. 144.

to about 10^{80} units. Even if all the matter in space consisted of DNA molecules of the structural complexity of the bacterial genome, with random sequences, then the chances of finding among them a bacterial genome or something resembling one would still be completely negligible.³⁸

2.7 Certainty and Quantum Mechanics

The confusion over the notion of probabilities and uncertainties has invaded the domain of observation in the area of physics, tending to erroneously foster a relativistic view of existence as opposed to determinism. According to the dominant view of Quantum Mechanics, the position and momentum of a particle are related in such a way that if you know one then you cannot know the other. It is erroneously concluded from this that the electron, for instance, does not have an actual location and momentum at a particular instant. This completely fallacious notion has been propagated by various physicists such as Bohr, in contrast to determinists such as Einstein and De Broglie. The notion can be seen to be false in several ways: Firstly, even if it is true that we cannot measure something or see something, it does not mean that it does not exist. The Copenhagen School was based on logical positivism which basically postulates that if one does not observe or measure something, then it does not exist. Secondly, if the electron has a measurable position, it has to have a momentum even though we cannot measure it. If it has a measurable velocity then it must have a position even if we cannot measure it. Thirdly, Quantum Mechanics cannot be the whole solution, even though it describes many things successfully. This is because we have come to realize, and increasingly so, that the basic laws in this universe must be integrated. The very fact that relativity and quantum mechanics are incommensurable at the present time, means that they are both incomplete, and a more embracing and unitary explanation will be required at a higher level. At present, various approaches are being considered by a few scientists who believe that the universe is deterministic at all levels and probability is just a function of human ignorance. It is in this approach that true advancement lies. This, therefore, means that we may indeed be led to a deterministic solution for the quantum level, and even beyond that, as our knowledge advances.³⁹ Fourthly, if there is order and structure at the macro-level then how can there be indeterminacy at the micro-level, which is the basic building block for the macro-level. That is to say, why is there determinism at the macroscopic level, yet indeterminism at the submicroscopic level. There is a profound contradiction here for those who advocate indeterminism. Lastly, if we grant the indeterminists their conclusion, how is it that indeterminism is so well determined? This seems to be yet another example of *Nonsense* (Proposition 1).

Due to the indeterminate approach in quantum mechanics, the notion of indeterminacy has been transferred to areas in the social sciences as a subset of relativism. On the other hand, the adherents of mysticism have also jumped the band-wagon to 'prove' that the world is nothing but a grand illusion. There is the general notion, induced by mysticism and relativism that at the quantum level there is no determinism in the relationship between cause and effect and that there never can be,

³⁸. Koppers, Bernd Olaf. (1990), *Information and the Origin of Life*, pp. 59-60.

³⁹. Penrose, Roger. (1989), *The Emperor's New Mind*, pp. 232-299 & 359-371.
Bohm, David and Peat, David F. (1987), *Science, Order and Creativity: A Dramatic New Look at the Roots of Science and Life*, pp. 76-103.

fundamentally, any certainty. Many others go even further and idiotically use such a notion as ‘proof’ that the universe is illusory, or that we generate ‘reality’ and many universes. However, it is often forgotten that whether we, as human beings, can or cannot determine something does not mean that it is not subject to cause and effect processes (deterministic laws). The reason many scientists cling onto indeterminism to colour their world view is because they view things *anthropopsychically*, that is, they think that something is real or really exists only if human beings can measure it. To say the least, this is obviously incorrect, but such views as stated before are entrenched and held onto because of the educational system which is permeated by relativistic notions.

2.8 Is the Concept of ‘God’ a Placebo?

Often, when the notion of the Creator is brought into a scientific discussion, particularly in the context of teleology, some scientists and philosophers become apprehensive because of the past and present records of some dogmatic religious institutions. However, what is overlooked is not only the problematic defence of atheism with all its serious flaws and fallacies, but also the problematic refutation of theism. The fallacious approach to this issue arises from two faulty notions: ‘God’ and ‘Belief’. These have both led to primitively worthless judgements. Let us first analyze the notion of ‘God’.

The profound common mistake in any atheistic, theological, philosophical and scientific discussions involving the notion of God is to ignore⁴⁰ that there are various concepts of God, just as there are various concepts of ethics and rights. There is the henotheistic concept, the polytheistic concept, the monotheistic concept, the trinitarian concept, the panpsychism concept, the pantheistic concept, the kathenotheistic concept, the anthropomorphic human-like concept, demi-god concept, the God-incarnate concept, the fatherly-figure concept, the goddess concept, the family god concept, warring god concept, the totemic god concept and so on. Proving the irrationality of a particular concept about God is not at all the same thing as refuting the existence of a rational concept of God, such as a Singular Intelligence as the *First Cause*, the *Uncaused Cause*, the *Immovable Mover*, the *Designer*, the *Originator*, and the *Creator* who is not subject to gender, plurality, culture, personification and time and space continuum.

Another barrier involved in belief in God as the Originator is the erroneous nature of ‘belief’ itself. There is an old atheistic adage, purporting that ‘God’ did not create man, but rather, man created ‘God’. This idea has been around for at least a couple of centuries and was supported by many hotshot philosophers, sociologists, psychologists and anthropologists. Among them were Hume, Freud, Marx, Feuerbach and Nietzsche. Subsequently, many have been influenced into thinking that this idea is true, because it was pointed out by the above-mentioned array of clangorous philosophisers. This assertion holds that the concept of ‘God’, as a powerful deity, being responsible for creation of this vast universe, is merely wishful thinking. It is utterly a product of the human imagination. Man, a helpless mortal creature who is terrified by the forces of nature and hardships of life seeks emotional comfort, consolation and protection. Therefore, he invents ‘God’. ‘God’ is

⁴⁰. See Jordan, Michael. (1992), *The Encyclopedia of Gods*. Jordan provides approximately 2500 different names and concepts of ‘divine deity’ collected from different cultures and era.

man's oldest and the most urgent need for a strong supernatural and compassionate Being, residing in the wonderful imaginary world called heaven, who responds to the outcries of his troubled creatures in misery and misfortune. Thus, this imaginary concept of 'God' is merely the hope of the hopeless, a help for the helpless. In a nutshell, He is invented to be used as a means to a psychological end.

However, there are several serious flaws in this myopic outlook that are puzzling, not the least of which is how it could have been in vogue for all these years. The fallacy arises from the erroneous notion of 'Belief', which in turn has led to primitively counterproductive conclusions.

All of the above theoreticians basically argue that the concept of 'God' as such is a human fabrication, a form of placebo. A placebo is an unmedicated preparation, an inactive substance that has absolutely no physiological effect, but may effect the relief of pain in someone who is set-up to believe that he is actually being easily treated. Its psychological effect, however, solely depends on the person's expectations. The expectation is the causal factor and plays a decisive role in the treatment. But, a man who is sexually dysfunctional cannot benefit if he already knows that the 'medication' given to him is only TicTac. Consequently, this would obviously entail that no patient can prescribe himself a placebo. If there is no set-up involved, no amount of 'will' to believe can improve his condition. Similarly, a prospective and thoughtful individual, as well as a gullible fool, even in the most frightening and unfortunate circumstance, cannot take up a fraudulent belief and false hopes, based on a self-invented notion of God and paradise, when he knows better that the whole idea is illusory and mendaciously unfounded, simply due to its inherent dysfunctional nature. Illusions, myths, false hopes and manufactured reality will remain psychologically deceptive, so long as one mistakes them for truth. Once the truth is revealed, though, the placebo effect is no longer operative.

Consequently, a man in a total state of darkness, who denies reality is either a fool, crazy, confused or is knowingly following his selfish desires and vested interests. One cannot manufacture reality and then confidently believe it, just as one cannot knowingly give oneself a placebo pill and expect it to work. One could only accept it, but cannot truly believe it, because it is utterly impossible to believe a manufactured reality once it is realized that it is manufactured. Therefore, belief per se, can never produce conviction. No amount of staunch belief can produce facts. Belief and conviction are two distinct yet interconnected components. The latter is a concomitant result of the former. That is because, real belief — the result of conviction — can only arise out of understanding; understanding requires justification, justification requires proof, and proof demands evidence; evidence means digging something from reality. Belief without evidence is nothing but self-hypnosis. It is submission to blindness. The security of conviction is that which arises from certainty, which in turn can only be realized, if and only if, one has used reason and examined the evidence yielding conclusions free from all types of inconsistencies. Only then, one can acquire tranquillity and peace of mind. Peace of mind is a product of this process. It comes only after there are no contradictions. It comes only when paradox and ambiguity are eliminated.

However, when we deal with the concept of God as unique, outside spacetime, indeed the very Originator of spacetime, such a placebo argument for every ideology collapses, because according to this non-anthropomorphic concept of God, this God may or may not answer man's prayer, all depending on His wisdom as to what is best for the individual. The Big Bang Originator concept of

God is not like Superman or the Genie in the bottle, who answers to every demand that man makes. Therefore, the confirmatory belief in a cosmic Originator who is not subject to push-button demands, cannot be a placeboic belief, "an opiate for the masses", just as a prescribed placebo of the type in which an acknowledgement is made at the outset to the patient, that it may or may not cure him, has no effect and is no longer a placebo.

Furthermore, if we are dealing with a concept of God, within an ideology, where He may even respond to the prayer of the disloyal and the unbeliever, why should I then believe, when I too, equally have a chance of getting what I want if I am disloyal?

2.9 Knowledge: Its Integrated Nature

From the discussion in this chapter it is clear that the very same methodology which is used to become certain about something happening in this universe must be the same methodology as that which should be used to conclude with certainty that there must be a Singular Intelligence as defined in this book, who is responsible for origination. All legitimate proof and disproof must be based on the notion of consistency, which incorporates the process of using reason and evidence to eliminate that which does not make sense and that for which the probability or cumulative probability is zero or approaches zero.

Up to now, it has been shown that the methodology one uses to determine reality, be that whether a Singular Originator exists, or whether a homicide was committed, depends on exactly the same methodology. In this approach there is no separation between so-called secular and non-secular — this universe is an originated, integrated and interconnected system. It is only by using reason and the evidence, where the measure of reality is consistency, that does truth become distinguishable from falsehoods. Anyone connecting the totality of reality in this way is truly knowledgeable. Assuredly, any 'educational system' which would truly embark on a programme to enhance humankind would use this methodology and realize the integration between things in this universe and the nature of its origin. Any 'educational system' failing to realise and incorporate this approach would be doomed to failure in the establishment of a rational, sane and just society — a society in which its members have not cut themselves off from Reality. Humankind has caused increasing socio-environmental disorder at all levels, precisely because most individuals and societies have not been following this methodology.

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