A CHALLENGE FOR DAWKINS: WHERE DID CARBON COME FROM?

Zia H Shah MD

He is Allah, the Creator, the Maker, the Fashioner. His are the most beautiful names. All that is in the heavens and the earth glorifies Him, and He is the Mighty, the Wise. (Al Quran 59:25)

Do not the disbelievers see that the heavens and the earth were a closed-up mass, then We opened them out? And We made from water every living thing. Will they not then believe? (Al Quran 21:31)

Professor Richard Dawkins seems to divide the physical reality of the universe into simple things like stones and clouds and complex things that are the living beings. He opens his book *the Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design*, with the following words:

"We animals are the most complicated things in the known universe. The universe that we know, of course, is a tiny fragment of the actual universe. There may be yet more complicated objects than us on other planets, and some of them may already know about us. But this doesn't alter the point that I want to make. Complicated things, everywhere, deserve a very special kind of explanation. We want to know how they came into existence and why they are so complicated. The explanation, as I shall argue, is likely to be broadly the same for complicated things everywhere in the universe; the same for us, for chimpanzees, worms, oak trees and monsters from outer space. On the, other hand, it will not be the same for what I shall call 'simple' things, such as rocks, clouds rivers galaxies and quarks. These are the stuff of physics. Chimps and dogs and bats and cockroaches and people and worms and dandelions and bacteria and galactic aliens are the stuff of biology.
The difference is one of complexity of design. Biology is the study of complicated things that give the appearance of having been designed for a purpose. Physics is the study of simple things that do not tempt us to invoke design."[1]

But, tell this to a quantum physicist that rocks, clouds and rivers are 'simple things,' and do not require an explanation! Dawkins claims that 'physics is the study of simple things that do not tempt us to invoke design,' not so fast! This is only his assumption created by the anesthesia of familiarity, and a passionate desire to prove atheism. Non-living things certainly require an explanation and of course the living things require a greater explanation. The assertion that the stone does not require an explanation is only his delusion and with his passing years it has become more entrenched in his mind.

Such an assertion could have been true prior to the Big Bang theory but no more. According to Aristotle the universe was eternal and this continued to be the physics of the nineteenth and the twentieth century until Edwin Hubble's discovery of the expanding universe. Where did the Big Bang come from? Who made the laws of nature and why do they conspire to make this universe suitable for life? Is multiverse universe science or only confabulation of those scientists who are fundamentalists in their atheism? Here we will focus on only one type of evidence and only one type of element or stone for our purposes, namely carbon and why it requires an explanation. A diamond is a precious stone and is made entirely of carbon (just like the graphite in a pencil). But, while graphite is very soft, the carbon atoms in diamond form in such a way as to create the hardest known substance. The word carbon probably derives from the Latin carbo, meaning variously 'coal,' 'charcoal,' 'ember.' The term diamond, a corruption of the Greek word adamas, 'the invincible,' aptly describes the permanence of this crystallized form of carbon. Pure diamond is the hardest naturally occurring substance known. The Encyclopedia Britannica describes, "On a weight basis, carbon is 19th in order of elemental abundance in the crust of the Earth, and there are estimated to be 3.5 times as many carbon atoms as silicon atoms in the universe. Only hydrogen, helium, oxygen, neon, and nitrogen are atomically more abundant in the cosmos than carbon." Encyclopedia summarizes that originally in the universe, carbon has been produced by a nuclear reaction involving helium atoms, "Carbon is the cosmic product of the 'burning' of helium in which three helium nuclei, atomic number 4, fuse to produce a carbon nucleus, atomic number 12."[2] Life as we know it would not be possible without carbon. The Encyclopedia Britannica describes:

"More than 1,000,000 carbon compounds have been described in chemical literature, and chemists synthesize many new ones each year. Much of the diversity and complexity of organic forms is due to the capacity of carbon atoms for bonding with each other in various chain and ring structures and three-dimensional conformations, as well as for linking with other atoms. Indeed, carbon's compounds are so numerous, complex, and important that their study constitutes a specialized field of chemistry called organic chemistry, which derives its name from the fact that in the 19th century most of the then-known carbon compounds were considered to have originated in living organisms."[3]

The life as we know it would not be possible without water and carbon, yet there was no carbon around at all for tens of millions of years after the Big Bang. Peter

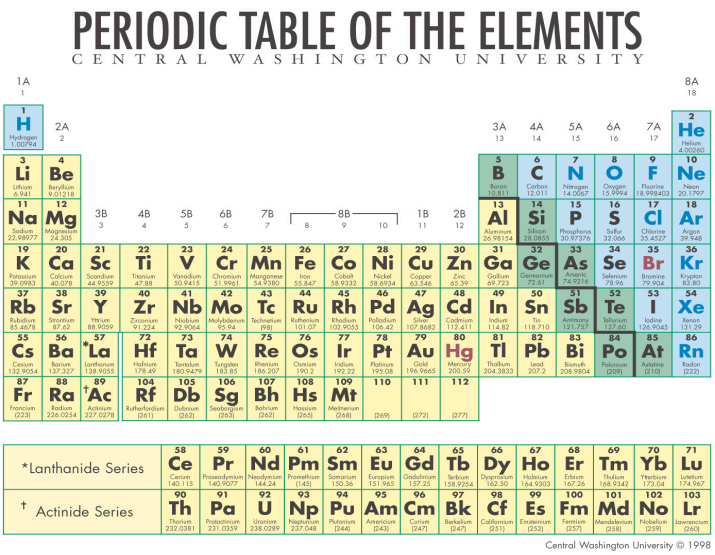
Ward and Donald Brownlee write in their book *Rare Earth: Why Complex Life Is Uncommon in the Universe*:

"The cosmic choreography that led to the formation of Earth, all other bodies in the Universe, and (ultimately) life began with the Big Bang, the very 'beginning of time.' The Big Bang is what nearly all physicists and astronomers believe is the actual origin of universe. Born in an instant, the entire universe started out as an environment of incredible heat and density, but subsequent expansion led to rapid cooling and more rarefied conditions. During the first half-hour, conditions existed that produced most of the atoms that are still the major building blocks of the stars-mainly hydrogen and helium, atoms that make up over 99% of the normal (visible) matter in the universe. In itself however, the Big Bang generated little chemical diversity. It gave us little or nothing beyond hydrogen, helium, and lithium to fill the periodic table. It did not produce oxygen, magnesium, silicon, iron, and sulfur, the elements that constitute more than 96% of the mass of our planet. It did not produce carbon, a chemically unique element whose versatile ability to form complex molecules is the basis for all known life. But the Big Bang did produce the raw material (hydrogen) from which all heavier and more interesting elements would later form."[4]

The simple fusion process of hydrogen changing into helium is the secret of the stars. It is the reason why the night sky is not dark, the reason why Earth's surface is not frozen, and the reason why planets can exist; it is the energy source that powers life on Earth. This process commonly occurs inside stars, but it was also the major nuclear reaction in the Big Bang. In stars the fusion of hydrogen to yield helium provides a critical long-term energy source. In addition to being the first nuclear reaction to produce new elements, the formation of helium from hydrogen (thermonuclear fusion) has handed advanced life a double-edged sword. On the one hand, fusion is the only known process that could be used in future reactors to provide truly long-term energy sources for advanced civilizations. The sun has continued to provide solar energy to the earth, by thermonuclear fusion for its 4.5 billion years of existence and will continue to do the same for billions of years to come. But the same life bestowing thermonuclear fusion cannot be happening on the planets that harbor life. So, on the other hand, bombs based on the fusion of hydrogen are one of the surest means of destroying advanced life forms completely on our planet earth on a wide scale. In the early universe we had only few elements, mostly hydrogen and helium. Peter Ward and Donald Brownlee explain that we did not have any carbon for a period of over 2 billion years after the Big Bang:

"The fusion of hydrogen to form helium was the end of the road for element production during the Big Bang. The key process that would lead from helium to the production of heavier elements could not occur under the conditions that prevailed in the early Universe. When the temperature was high enough to produce them, the spatial density of atoms was too low and the reaction rates too small. Thus it was not possible for Earth-like planets to form in the early Universe, because their formation depends on elements heavier than helium. During the first 15% of the age of the Universe, a period of over 2 billion years, stars could form, but there was not enough dust and rocks for them to have terrestrial planets. When modern telescopes are used to observe more and more distant objects, we are actually seeing further and further back into the early history of the Universe. If it were possible to detect life with a telescope, we would observe a 'dead zone' beyond a certain distance beyond a certain time, that is, when the Universe was without life or planets or even the elements to produce them."[5]

One needs to glance at the Periodic Table and how it mentions the number of electrons in each element and their atomic weight and how each individual element relates to other elements. One needs to glance at hydrogen, helium, carbon and oxygen especially to grasp the rest of the story.



Eulogizing the inherent organization of the periodic table, Thomas David Parks writes in an article, *Plain water will tell you the story*:

"Probably to a chemist the periodic arrangement of the elements is the most arresting. One of the first things a freshman chemistry student learns is the periodicity or order found in the elements. This order has been variously described and classified but we usually credit Mendeleev, the Russian chemist of the last century, with our periodic table. Not only did this arrangement provide a means of studying the known elements and their compounds but it also gave impetus to the search for those elements which had not yet been discovered. Their very existence was postulated by vacant spaces in the orderly arrangement of the table.

Chemists today still use the periodic table to aid them in their study of reactions and to predict properties of unknown or new compounds. That they have been successful is sound testimony to the fact that beautiful order exists in the inorganic world."[6 7]

To understand the process of manufacturing of carbon and complexities involved let us turn again to Peter Ward and Donald Brownlee:

"Carbon formation requires three helium atoms (nuclei) to collide at essentially the same time: a three-way collision. What actually happens is that two helium atoms collide to form the beryllium-8 isotope, and then, within a tenth of a femtosecond (1/10,000,000,000,000,000 second) before this highly radioactive isotope decays, it must collide with and react with a third helium nucleus to produce carbon. Carbon has a nucleus composed of six protons and six neutrons, the cumulative contents of three helium atoms. Once carbon had been made, however, heavier and heavier elements could be formed. The production of heavier and more interesting elements occurred in the fiery cores of stars where temperatures ranged from 10 million to over 100 million degrees Celsius. The sun is currently producing only helium, but in the future, in the last 10% of its

lifetime, it will produce all of the elements from helium to bismuth, the heaviest nonradioactive element in nature. Elements heavier than bismuth are all radioactive, and most are produced by the decay of uranium and thorium. The elements heavier than bismuth were produced in the cores of stars ten times more massive than the sun that underwent supernova explosions, dramatic events in which a star brightens by a factor of 100 billion over a period of a few days."[8]

So, what is the great difficulty in three helium atoms combining to yield an atom of carbon? Paul Davies explains:

"After beryllium, carbon is the next-heaviest element. It has six protons and six neutrons. Could it be that stars have found a way to vault over lithium and beryllium and go straight from helium to carbon? This would require *three* helium nuclei to come together at the same moment. The proton and neutron arithmetic (3 x 2 x 2 = 6 + 6) works out correctly, and the end product would be stable carbon nuclei. Because more protons are involved in a triple nuclear encounter than in the original hydrogen fusion, the electrical repulsion is correspondingly greater, so the temperature must be higher to overcome it and allow the nuclei to get close enough for the short-range strong nuclear force to act. That isn't a problem: by further contracting, a star's core can raise the temperature to a high enough level. There is, however, a fundamental difficulty with the reaction itself. The likelihood of three helium nuclei coming together at the same place and the same time is tiny. To be sure, they don't have to arrive at *exactly* the same moment; two helium nuclei could first form a very unstable nucleus of beryllium, and before it fell apart a third helium nucleus might slam into it. But at first sight the numbers look very unfavorable, with a typical beryllium nucleus disintegrating too quickly to give a third helium nucleus a decent chance to hit it. On the face of it, then, that route to carbon seems to be blocked too."[9]

To elaborate further the detailed and complex process of evolution of the stars, let me quote Peter Ward and Donald Brownlee again:

"The matter produced in the Big Bang was enriched in heavier elements by cycling in and out of stars. Like biological entities, stars form, evolve, and die. In the process of their death, stars ultimately become compact objects such as white dwarfs, neutron stars, or even black holes. On their evolutionary paths to these ends, they eject matter back into space, where it is recycled and further enriched in heavy elements. New stars rise from the ashes of the old. This is why we say that each of the individual atoms in Earth and in all of its creatures-including us-has occupied the interior of at least a few different stars. Just before the sun formed, the atoms that would form Earth and the other planets existed in the form of interstellar dust and gas. Concentration of this interstellar matter formed a nebular cloud, which itself then condensed into the sun, its planets, and their moons."[10]

Paul Davies describes the unusual circumstances that are needed for the helium atoms to merge, leading to the creation of carbon in the following words in his book, *Cosmic Jackpot: Why Our Universe is Just Right for Life*:

"The carbon story left a deep impression on Hoyle. He realized that if it weren't for the coincidence that a nuclear resonance exists at just the right energy, there would be next to no carbon in the universe, and probably no life. The energy at which the carbon resonance occurs is determined by the interplay between the strong nuclear force and the electromagnetic force. If the strong force were slightly stronger or slightly weaker (by maybe as little as 1 percent), 10 then the binding energies of the nuclei would change and the arithmetic of the resonance wouldn't add up; the universe might very well be devoid of life and go unobserved.

What are we to make of this? When Hoyle drew attention to this issue, the orthodox view was that the strength of the nuclear force is simply 'given' - it is a 'free parameter,' the value of which is not

determined by any theory but must be measured by experiment. A common response was to shrug the matter aside with the comment 'The value it has is the value it has, and if it had been different, we wouldn't be here to worry about it.' But that attitude seems a bit unsatisfactory. We can certainly *imagine* a universe in which the form of the strong force law is the same but the actual strength of the force is different, just as we can imagine a world in which gravity is a little stronger or weaker but otherwise obeys the same laws. The fact that the value of the strong and electromagnetic forces in atomic nuclei are 'just right' for life (like Goldilocks' porridge) cries out for explanation."[11]

Paul Davies draws our attention to the absolute value of the strong force and the electromagnetic forces, and how they are neither too high and nor too low, just about right to make our earth and the universe suitable for life or biophilic. The attention to the complex details draws our attention to the Providence of God, as the Holy Quran says, "You see not any imperfection in the creation of the Gracious God. Return your gaze, do you see any flaw. Then return your gaze again and again. Your gaze comes back to you dazzled, perplexed and fatigued, having found no incongruity." (Al Quran 67:4-5) So, what are the strong and electromagnetic forces that are conspiring to give 'Goldilocks' porridge,' in the nuclei? According to the Encyclopedia Britannica:

"Strong force is a fundamental interaction of nature that acts between subatomic particles of matter. The strong force binds quarks together in clusters to make more-familiar subatomic particles, such as protons and neutrons. It also holds together the atomic nucleus and underlies interactions between all particles containing quarks.
The strong force originates in a property known as colour. This property, which has no connection with colour in the visual sense of the word, is somewhat analogous to electric charge. Just as electric charge is the source of electromagnetism, or the electromagnetic force, so colour is the source of the strong force. Particles without colour, such as electrons and other leptons, do not "feel" the strong force; particles with colour, principally the quarks, do "feel" the strong force. Quantum chromodynamics, the quantum field theory describing strong interactions, takes its name from this central property of colour."[12]

Unlike the gravitational force the strong force increases with increasing distance, 'As the distance between two quarks increases, the force between them increases rather as the tension does in a piece of elastic as its two ends are pulled apart. Eventually the elastic will break, yielding two pieces.'[13] The strong force falls sharply to zero beyond about a ten-trillionth of a centimeter, which is roughly the size of an atomic nucleus, so only by getting very close will protons come under its influence. When they do, the nuclear force is strong enough to overwhelm the longer-ranged electrical repulsion.[14] Mark Mahin in his book *the new scientific case for God's existence* has explained the issues at hand in regards to the strong force and the electromagnetic forces in detail. He writes pertaining to the strong force:

"Protons and neutrons are the two types of nucleons; they are called nucleons because they are found in the nucleus of the atom. If two nucleons are separated by a hundred billionth of a centimeter, there is very little mutual attraction between them. Yet when two nucleons are separated by a distance of less than a ten trillionth of a centimeter, they feel an extremely strong force of attraction. This force between nucleons is called the strong nuclear force or the strong

force. After the appearance of the theory that protons and neutrons are composed of quarks, some physicists suggested that the force binding nucleons is only a remnant of the much stronger force binding quarks. In this book when I refer to the value of the strong force constant I mean only the strength of the force binding nucleons. This force is about 10^{11} times stronger than the gravitational force.

During the first few minutes after the expansion of the universe began, roughly 25 percent of all hydrogen was converted into helium. A number of scientists have said that if the strong force had been only a few percent stronger, essentially all of the universe's hydrogen would have been converted into helium. In such a case intelligent life would not exist in our universe, for three reasons. First, there would be no water; for water is composed of hydrogen and oxygen. It has often been said that water is probably necessary for the evolution of life anywhere; for no other waterless liquid is even half as suitable for biological purposes. Second, hydrogen is a crucial element in the proteins and nucleic acids needed for life. Third, if all hydrogen had been converted into helium early in the universe's history, stars like the sun would never have existed. Only relatively short-lived stars made of helium could have existed. It took over three billion years for life on our planet to evolve from the most primitive level to the level of man, and if all stars were relatively short-lived, intelligent life would probably never have evolved. According to some scientists, if the strong force had always been more than a few percent greater, protons would not have formed from quarks. In such a case there would be none of the atoms needed for life. So if the strong force constant had always had a value greater than twice its actual value, intelligent life would not exist in our universe.

Things also would have been very different if the strong force had always been much weaker. The strong force of attraction between protons is roughly 100 times greater than the electromagnetic repulsion between them. If the strong force constant had a value less than a hundredth of its actual value, protons would not stay together in the cores of atoms, and there would be no living things (there would not even be any rocks). So if the strong force constant had always had a value less than a hundredth of its actual value or more than twice its actual value, intelligent life would not exist in our universe. In other words, intelligent life would not exist in our universe if the strong force constant did not have a value between .01f and 2f. Here I use f as a symbol for the actual value of the strong force constant-that is, the strength of the attractive force between nucleons, which is about 10^{11} times greater than the gravitational force."[15]

It is not only the strong force and the electromagnetic force that are finely tuned but almost every force known to mankind appears to be manipulated to make the universe biophilic. Pertaining to the lengthy details about electromagnetic forces please see the actual work of Mark Mahin in his book *the new scientific case for God's existence*. Paul Davies writes about the weak forces:

"The weak force is implicated in the carbon story, not only in the manufacturing the carbon but also in disseminating it. The carbon atoms inside your body were forged inside a star, some billions of years ago. How did they end up on earth? A good way for a star to divest itself of carbon is by exploding.

…

If the weak force were weaker, the neutrinos will lack the punch to create this explosion. If it were stronger, the neutrinos would react more vigorously with the stellar core and wouldn't escape to deliver their blow to the outer layers. Either way, the dissemination of carbon and other heavy elements needed for life via the process would be compromised."[16]

No wonder, Stephen Hawking said, "The odds against a universe like ours emerging out of something like the Big Bang are enormous. I think there are

clearly religious implications."[17] Professor Dawkins may find it convenient to ignore what Mark Mahin or I have written. But he certainly cannot casually dismiss the writing of Martin John Rees, Baron Rees of Ludlow, who is an English cosmologist and astrophysicist. He has been Astronomer Royal since 1995, and Master of Trinity College, Cambridge since 2004. He became President of the Royal Society in December 2005. He writes in his book *Our Cosmic Habitat*:

"A universe hospitable to life--what we might call a *biophilic* universe--has to be very special in many ways. The prerequisites for any life--long-lived stable stars, a periodic table of atoms with complex chemistry, and so on--are sensitive to physical laws and could not have emerged from a Big Bang with a recipe that was even slightly different. Many recipes would lead to stillborn universes with no atoms, no chemistry, and no planets; or to universes too short lived or too empty to allow anything to evolve beyond sterile uniformity. This distinctive and special-seeming recipe seems to me a fundamental mystery that should not be brushed aside merely as a brute fact."[18]

Professor Richard Dawkins may also recall, that he had adequately defined 'complicated thing' in his book, *the Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design*:

"A complicated thing is one whose existence we do not feel inclined to take for granted, because it is too 'improbable'. It could not have come into existence in a single act of chance. We shall explain its coming into existence as a consequence of gradual, cumulative, step-by-step trans-formations from simpler things, from primordial objects sufficiently simple to have come into being by chance. Just as 'big-step reductionism' cannot work as an explanation of mechanism, and must be replaced by a series of small step-by-step peelings down through the hierarchy, so we can't explain a complex thing as *originating* in a single step. We must again resort to a series of small steps, this time arranged sequentially in time."[19]

One would hope that given the above explanation of carbon, Dawkins will not want to be pompous and obscurantist and will stop calling stones 'simple things.' Dawkins might believe that 'multiverse,' concept may come to his rescue. Multiverse is the main ploy of the atheists to wriggle out of the evidence of the finely tuned universe. Antony Flew explains, "This fine tuning has been explained in two ways. Some scientists have said the fine tuning is evidence for divine design; many others have speculated that our universe is one of multiple others—a 'multiverse'—with the difference that ours happened to have the right conditions for life. Virtually no major scientist today claims that the fine tuning was purely a result of chance factors at work in a single universe."[20]

A true scientific explanation, says Paul Davies, is like a single well-aimed bullet. The idea of a multiverse replaces the rationally ordered real world with an infinitely complex charade and makes the whole idea of 'explanation' mean-ingless.[21] Richard Swinburne is just as strong in his disdain for the multiverse explanation: "It is crazy to postulate a trillion (causally unconnected) universes to explain the features of one universe, when postulating one entity (God) will do the job."[22]

EPILOGUE

Indeed in the creation of the Heavens and of the earth, and in the alternation of the night and of the day, are there signs for men of understanding. They who, standing, sitting or reclining, bear Allah in mind and reflect on the creation of the Heavens and of the earth, saying: 'O our Lord! You have not created this in vain.' (Al Quran 3:189-190).

Most agnostic or atheist scientists are witness to the above verses of the Holy Quran, from Sura Al Imran, when they see the order, beauty and complexity in the Universe. For example Baron John Rees, President of the Royal Society of UK writes in his book, *Just Six Numbers: the Deep Forces That Shape the Universe* describes:

"I have highlighted these six because each plays a crucial and distinctive role in our universe, and together they determine how the universe evolves and what its internal potentialities are; moreover, three of them (those that pertain to the large-scale universe) are only now being measured with any precision.
These six numbers constitute a 'recipe' for a universe. Moreover, the outcome is sensitive to their values: if anyone of them were to be 'untuned', there would be no stars and no life. Is this tuning just a brute fact, a coincidence? Or is it the providence of a benign Creator?"[23]

To drive home the full force of the fine tuning of these six numbers from physics, Rees further quotes a very useful metaphor:

"There are various ways of reacting to the apparent fine tuning of our six numbers. One hard-headed response is that we couldn't exist if these numbers weren't adjusted in the appropriate 'special' way: we manifestly are here, so there's nothing to be surprised about. Many scientists take this line, but it certainly leaves me unsatisfied. I'm impressed by a metaphor given by the Canadian philosopher John Leslie. Suppose you are facing a firing squad. Fifty marksmen take aim, but they all miss. If they hadn't all missed, you wouldn't have survived to ponder the matter. But you wouldn't just leave it at that - you'd still be baffled, and would seek some further reason for your good fortune."[24]

But as most of these authors do not believe in accountability or hereafter, in other words deny the last portion of the above quoted verses, 'Holy art Thou; save us, then, from the punishment of the Fire,' their thinking is vulnerable to go astray. When we read the above verses in totality they read:

"Indeed in the creation of the Heavens and of the earth, and in the alternation of the night and of the day, are there signs for men of understanding. They who, standing, sitting or reclining, bear Allah in mind and reflect on the creation of the Heavens and of the earth, saying: 'O our Lord! You have not created this in vain; *nay,* Holy art Thou; save us, then, from the punishment of the Fire.'" (Al Quran 3:189-190).

It is denial of accountability, by the atheist scientists and their preconceived conclusions about atheism that make them weave artificial explanation for the order, beauty and organization that they have observed in the universe and in the

living organisms on our planet earth. Now watch how Baron Rees starts manufacturing smoke screens in the concluding chapter of the book that I am quoting here. The chapter is titled, *Coincidence, providence—or multiverse*, he writes trying to be an apologetic for concept of 'multiverse':

"Some people may be inclined to dismiss such concepts (multiverse) as 'metaphysics' (a damning put-down from a physicist's viewpoint). But I think the multiverse genuinely lies within the province of science, even though it is plainly still no more than a tentative hypothesis. This is because we can already map out what questions must be addressed in order to put it on a more credible footing; more importantly (since any good scientific theory must be vulnerable to being refuted), we can envisage some developments that might rule out the concept."[25]

He chooses to put multiverse genuinely in the province of science while the multiverse is by definition outside of our universe and there is no hope of us ever studying or observing it, except in make belief stories. He knows it himself also as a little bit later he confesses, "These universes would never be directly observable; we couldn't even meaningfully say whether they existed 'before', 'after' or 'alongside' our own."[26]

In summary, the processes leading to the formation of what Dawkins calls 'simple things,' are hugely complex and unusual and the assumption that they do not require an explanation is presumptuous. Peter Ward and Donald Brownlee explain:

"The near-ideal nature of Earth as a cradle of life can be seen in its prehistory, its origin, its chemical composition, and its early evolution. What are the most important factors that allowed Earth to support advanced life? Earth has offered (1) at least trace amounts of carbon and other important life-forming elements, (2) water on or near the surface, (3) an appropriate atmosphere, (4) a very long period of stability during which the mean surface temperature has allowed liquid water to exist on its surface, and (5) a rich abundance of heavy elements in its core and sprinkled throughout its crust and mantle regions.

Earth is actually the final product of an elaborate sequence of events that occurred over time span of some 15 billion years, three times the age earth itself. Some of these events have predictable outcomes, whereas others are more chaotic, the final outcome controlled by chance. The evolutionary path that led to life included element formation in the Big Bang and in stars, explosions of stars, formation of interstellar clouds, formation of the solar system, assembly of Earth, and the complex evolution of the planet's interior, surface, oceans, and atmosphere. If some god-like being could be given the opportunity to plan a sequence of events with the express goal of duplicating our 'Garden of Eden,' that power would face a formidable task. With the best intentions, but limited by natural laws and materials, it is unlikely that Earth could ever be truly replicated. Too many processes in its formation involved sheer luck. Earth-like planets could certainly be made, but each outcome would differ in critical ways. This is well illustrated by the fantastic variety of planets and satellites that formed in the solar system. They all started with

similar building materials, but the final products are vastly different from each other. Just as the more familiar evolution of animal life involved many evolutionary pathways with complex and seemingly random branch points, the physical events that led to the formation and evolution of the physical Earth also required an intricate set of nearly irreproducible circumstances."[27]

With every passing year more and more information has pooled to suggest that there aught to be a creator for this universe. Some of this information is discussed in this article; additional information can be sought in the references of the article and a documentary mentioned in the February 2010, Al-Islam eGazette.

Plato would make Socrates say in the Republic (7.514a ff.), comparable to that of prisoners of an underground cave, whose unfortunate fate is to confuse reality with passing shadows created by a fire inside their miserable abode and kept in motion by clever manipulators, who in the name of politics, religion, science, and tradition control the human herd.

Dawkins is able to see the beauty and organization in biology, as he confesses in *the Blind Watchmaker*, commenting on the famous book of Reverend William Paley, "One thing I shall not do is belittle the wonder of the living 'watches' that so inspired Paley. On the contrary, I shall try to illustrate my feeling that here Paley could have gone even further. When it comes to feeling awe over living 'watches' I yield to nobody."[28] He further concedes describing the beauty of bats, "We shall look at a particular example and shall conclude that, when it comes to complexity and beauty of design, Paley hardly even began to state the case."[29] It is time for Dawkins and like to stop hiding behind the smoke screens of 'multiverse' and confess that the very building materials of all life forms on our planet, especially carbon, demand that there aught to be a creator!

I conclude in the words of Promised Messiah, Hadhrat Mirza Ghulam Ahmad, as he describes the purpose of human life and nature of human brain in his book *Hakika Tul Wahee (Essence of Revelation)*:

"Let it be clear that man has been created with the ultimate purpose to recognize his Creator. Man is supposed to have full awareness of his Creator and to understand His attributes to a level that his cognizance reaches a degree of certainty. Therefore, Allah has designed the human mind with two different talents. On the one hand, he has been given intellectual abilities. As a result of these abilities he is able to study Allah's creations, and by observing divine purpose in every particle of nature, by studying the organization and order in the natural systems of the universe, he is able to fully realize that this elaborate infra-structure of the earth and the heaven cannot be by itself, without a creator. He can conclude that there should be a Designer and a Maker of all this!
On the other hand Allah has gifted man with spiritual powers and perceptions as well. This dual gift from Allah is for the reason, that, whatever limitations and short comings are left from the domain of intellectual capacity should be satisfied with the spiritual abilities. It is obvious that intellectual abilities given to man are only able to study the earth and the heaven and observing individual details declare that this profound and organized universe should have a creator.

It is beyond the capacity of the intellectual abilities to go further and declare that such a Creator of this universe does exist! It is not within their scope to announce that there is indeed such a Maker! (These only take us to the conclusion that there should be a Designer and a Maker of all this.)"[30]

---

[1] Richard Dawkins. The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design. WW Norton & Company, 1996. Page 1.
[2] "carbon (C)." Encyclopædia Britannica. 2009. Encyclopædia Britannica Online. 08 Dec. 2009 <http://www.britannica.com/EBchecked/topic/94732/carbon>.
[3] "carbon (C)." Encyclopædia Britannica. 2009. Encyclopædia Britannica Online. 08 Dec. 2009 <http://www.britannica.com/EBchecked/topic/94732/carbon>.
[4] Peter Ward and Donald Brownlee. Rare Earth: Why Complex Life Is Uncommon in the Universe. Copernicus Books, 2000. Page 38.
[5] Peter Ward and Donald Brownlee. Rare Earth: Why Complex Life Is Uncommon in the Universe. Copernicus Books, 2000. Page 39.
[6] This article is published in a book *the Evidence of God in an Expanding Universe* edited by John Clover Monsma, published in 1958.
[7] http://www.alislam.org/egazette/articles/Plain-water-200908.pdf
[8] Peter Ward and Donald Brownlee. Rare Earth: Why Complex Life Is Uncommon in the Universe. Copernicus Books, 2000. Page 40.
[9] Paul Davies. Cosmic Jackpot: Why Our Universe Is Just Right for Life. Houghton Mifflin Company, 2007. Page 135.
[10] Peter Ward and Donald Brownlee. Rare Earth: Why Complex Life Is Uncommon in the Universe. Copernicus Books, 2000. Page 43-44.
[11] Paul Davies. Cosmic Jackpot: Why Our Universe Is Just Right for Life. Houghton Mifflin Company, 2007. Page 138.
[12] "strong force." Encyclopædia Britannica. 2009. Encyclopædia Britannica Online. 09 Dec. 2009 <http://www.britannica.com/EBchecked/topic/569442/strong-force>.
[13] "strong force." Encyclopædia Britannica. 2009. Encyclopædia Britannica Online. 09 Dec. 2009 <http://www.britannica.com/EBchecked/topic/569442/strong-force>.
[14] Paul Davies. Cosmic Jackpot: Why Our Universe Is Just Right for Life. Houghton Mifflin Company, 2007. Page 134.
[15] Mark Mahin. The new scientific case for God's existence. Mindlifter Press, Boston, 1985. Pages 56-58.
[16] Paul Davies. Cosmic Jackpot: Why Our Universe Is Just Right for Life. Houghton Mifflin Company, 2007. Page 140-141.
[17] J Boslough. Stephen Hawkings universe. William Morrow, New York, 985. Page 121.
[18] Martin Rees. Our Cosmic Habitat. Princeton University Press, 2001. Page xvi of prologue.
[19] Richard Dawkins. The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design. WW Norton & Company, 1996. Page 14.
[20] Antony Flew. There Is a God: How the World's Most Notorious Atheist Changed His Mind. Harper One, 2007. Page 115.
[21] Paul Davies, "Universes Galore: Where Will It All End?" http://cosmos.asu.edu/publications/chapters/Universes%20galore.pdf
[22] Richard Swinburne, "Design Defended," *Think* (Spring 2004): page 17.
[23] John Rees. Just Six Numbers: The Deep Forces That Shape the Universe. Basic Books, 2000. Page 4.
[24] John Rees. Just Six Numbers: The Deep Forces That Shape the Universe. Basic Books, 2000. Page 165-166.
[25] John Rees. Just Six Numbers: The Deep Forces That Shape the Universe. Basic Books, 2000. Page 166-167.
[26] John Rees. Just Six Numbers: The Deep Forces That Shape the Universe. Basic Books, 2000. Page 168.
[27] Peter Ward and Donald Brownlee. Rare Earth: Why Complex Life Is Uncommon in the Universe. Copernicus Books, 2000. Page 36-37.
[28] Richard Dawkins. The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design. WW Norton & Company, 1996. Page 5.
[29] Richard Dawkins. The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design. WW Norton & Company, 1996. Page 21.
[30] Promised Messiah[as]. Haqiqat-ul-Wahi, Ruhani Khaza'in, vol. 22, pp. 7-8.