

The Problem of Origin and Evolution of Life: Scientific and Theological Perspectives

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Abstract

There are some basic constraints in the origin and evolution of life by mere physical laws and blind chance. In origin and evolution of simple and complex life it is argued that in a very large span of time and due to a large series of intermediates, first non-living components of matter might have given rise to a simple unicellular life. Then from such simple forms of life, more complex forms, including the most intelligent life – *Homo sapiens* – ‘could evolve provided sufficiently large series of finely graded intermediates may be considered’.

In this paper we shall discuss in detail the problems in origin and evolution of life.

Evolutionary biology can explain adaptation and descent, but it cannot tell how natural selection and other living processes began in the first place? How the atoms and molecules, which usually randomize themselves into maximum disorder, ordered and organized themselves into life macromolecules? Whether the origin of life – the transition from chemicals to the cell- was written in the cosmic script (under Divine will) or it was just a chance incident? Did proteins come first or DNA because the paradox is proteins can perform many activities like catalysis but cannot perform the function of storing and transmitting information for their own synthesis? On the other side, DNA can store information, but cannot manufacture anything nor replicate itself. Therefore, DNA needs proteins and proteins need DNA. Again we are facing the old problem of unbreakable cycle- chicken- and- egg problem.

Similarly there will be discussion about how in 3.8 billion years, more than 2 million living species- each consisting of billions of organisms- evolved. Some other problems faced by Darwinism and evolution will be dealt in like:

The problem of direction in evolution, the problem of scarcity of fossils of intermediate forms, the difficulty of gradual evolution of complex organs like eyes, ears, lungs and brain, etc; in vertebrates especially in primates and in Man. How did the instincts of living things evolved, blindly or by some intelligent source? How did the most marvelous process of differentiation and organogenesis come, that is, single fertilized cell(zygote) of human divides giving rise to a ball of cells (morula), how these cells interpret and discover how and where to become the cells of a heart or lungs or brain and some a nose or eye or toe? As a whole, how a perfect human body consisting of more than 75 trillion cells, each synthesizing two thousand complex protein molecules per second, evolved by chance?

How the evolutionists of today explain the Cambrian Explosion – 600 million years ago, in a very short period of time, no more than 25 million years, (recent studies have reduced this time span to perhaps as little as 5 million years), all the major types of animals appeared.

At the end, there will be some discussions about the limitations of humans' sources of knowledge.

Biography

Abdul Majid is Assistant Professor & Head of Zoology Department at Government Postgraduate College, Mansehra(Pakistan). Prof. Majid received his B.Sc Degree from Peshawar University, M.Sc in Biology from Quaid-i-Azam University, Islamabad & M.phil from the same university in Molecular Biology in 1990. He also did M.A in Islamic Studies from the University of Peshawar in 1994. Prof. Majid received many awards at national & international levels. At national level he had been awarded five presidential awards in all Pakistan essay award competition in 1986, 88, 99, 2000 & 2002 on various aspects of Islam & Modern Era. His course titled Islam & Science on Evolution and Creation had been selected for 2001 Science-religion award. Prof. Majid is also founding chairperson of HSSRD (Hazara Society of Science- Religion Dialogue, www.hssrd.org) & Associate Editor of a quarterly journal Science- religion Dialogue. His Published works include M.Phil Thesis & 16 research articles on various aspects of Islam, biology & on the interrelationship of Islam & science. Prof. Majid has attended a number of national & international conferences. Each of the last two years, he has attended the annual Metanexus workshop. At each of those workshops, on behalf of HSSRD, he has accepted a Local Societies Initiative supplemental grant award.

An honest man , armed with all the knowledge available to us now, could only state that in some sense, origin of life appears at the moment to be almost miracle, so many are the conditions which would have to be satisfied to get it going.

(F. Crick 1981: *Life Itself*, p.88)

There are some basic constraints and problems in the origin and evolution of life by mere physical laws and blind chance. In origin and evolution of simple and complex life it is argued that in a very long span of time and due to a large series of intermediates, first non-living components of matter might have given rise to a simple unicellular life .Then from such simple forms of life, more complex forms including the most intelligent life – *Homo sapiens* – could evolve *provided sufficiently large series of finely graded intermediates may be considered.*

In this paper we are discussing the problems and difficulties in origin and evolution of life especially the impossibility of the origin and evolution of life by mere blind chance and natural selection .

IMPORTANCE OF THE CONCEPT OF ORIGIN OF LIFE

According to Oparin "it is one of the most important problems of natural history. No religion or philosophical system, no outstanding thinker even failed to give this question serious consideration"(1). Dr. Riyat Khan in his article "*The Origin of Life*" writes, "the problem of life on earth has engaged the attention of thinkers in all ages. It is one of the most fundamental and at the same time one of the most difficult problems". (2)

In spite of present knowledge of life and its processes, the Biologists think that their knowledge concerning the origin of life is limited. Professor Stanley Miller, in his article "*The Origin of Life*" says, the problem of how life arose on the earth is one of the most difficult modern sciences. Almost every branch of science will have to contribute to it before the problem is solved. Knowledge from fields of Biochemistry, Microbiology, Geology and Astronomy must be brought to bear on the problem. He further says, "Furthermore we do not know when life arose, except that it occurred some time between one billion and 4.5 billion years ago. With all these unknown, it is easy to see that there are many ideas on this subject and little agreement". (3) J.D. Be writes: The problem of origin of life is one of the major gaps to be filled in man's knowledge of total history. (4)

Various theories have been put forth to explain the origin of life on earth, but none of them could explain successfully the problem of biological origin. Those theories are: theory of spontaneous generation, theory of eternity of life , theories of cosmozoic, meteorite and panspermia, and Oparin hypothesis.(5) The details of Oparin hypothesis is given below:

OPARIN HYPOTHESIS ON THE ORIGIN OF LIFE

According to Oparin, origin of life was a gradual process and that life did come into existence suddenly as a consequence of a combination of a whole series of chance occurrences. A.I.Oparin's *hypothesis* is based on *coazervate* model. *Coazervate* is a solution of high molecular weight chemicals i.e. Carbohydrates and

proteins, etc. During various mechanisms of polymerization and condensation which were going to in the ocean water, a particular phenomenon of *Cozervation* took place, which according to Oparin, led to the origin of life. According to this, as a result of mixing of two different colloid solutions, some microscopic droplets become separated from them called as *Coazervate* (from Latin word *acervus* meaning pile). These droplets (*Coazervates*) contain almost all the Colloidal particles in specific ratio and having the peculiar property of not allowing their drops to mix with surrounding water solution. The same property is exhibited by the protoplasm of Colloidal nature. Oparin considered these *Coazervates* as the sole living molecules which gave rise to the life. (6).

But the question is, how the chemicals gave rise to living cell or in other words, how did transition from chemistry to life take place?

COULD LIFE ORIGINATE BY CHANCE?

Let us analyze the notion that different complex organic molecules and then a perfect machine –cell– came into being just by the interactions of different chemicals under the influence of some physical factors (forces). Oparin comments, “If the reader were asked to consider the probability that in the midst of inorganic matter a large factory with smoke stacks, pipes, boilers, machines, ventilators, etc; suddenly sprang into existence by some natural process, let us say a volcanic eruption, this would be taken at best for a silly joke”. He further says, “Yet even the simplest microorganism has a more complex structure than any factory, and therefore its fortuitous creation is very much less probable”. He further writes, “Every factory is constructed in accordance with some set, previously worked out plan (so he says that unquestionably, a factory could never originate through some natural phenomenon and independently of man). He confesses this, “It is inconceivable that such a preconceived plan of protoplasmic structure could exist unless one assumes a creative divine will and a plan of creation.” In spite of confessing the fact, he in the second sentence says, “but a definite protoplasmic organization and fitness of its inner structure to carry out definite functions could easily be formed in the course of evolution of organic matter just as highly organized animals and plants have come from the simplest living things by a process of evolution” (7)

G.S. Carter, after observing the great complexity and organization of living things (especially animals) says “No one can look at the immensely complicated organization of an insect or a vertebrate without doubting that our relatively simple theories can completely explain the origin of such complexity” (8). Professor Klaus Dose, the President of the Institute of Biochemistry at the University of Johannes Gutenberg states:

“More than 30 years of experimentation on origin of life in the fields of chemical and molecular evolution have led to a better perception of the immensity of the problem of the origin of life on earth rather than to its solution. At present all discussions on principal theories and experiments in the field either ends in stalemate or in a confession of ignorance (9). Similarly other biologists and biochemists staggered at the origin of life just by chance. Professor William Thorpe of the Zoology department of Cambridge University told his fellow Scientists: “All the facile speculations and discussions published during the last ten or fifteen years explaining the mode of origin of life have been shown to be far too simple-minded and to bear very little weight. The problem in fact seems as far from solution as it ever was. (10).

About chance, Professor Edwin Conklin rightly comments: "The probability of life originating from accident comparable to probability of the unabridged dictionary resulting from an explosion in a printing press". (11)

Even, if we take it for granted that matter in a crude form spontaneously originated in the universe, and that a chain of voluntary action and reaction is responsible for creation, (although such assumption is baseless). We have no adequate explanation for the existence of the universe and life.

The chance occurrence of a single protein molecules would require that amount of matter to be shaken together would be millions of times greater than that in the whole universe. In his book, *Human Destiny*, Le Comte Du Nouy has made an excellent detailed analysis of this problem:

(For such a chance) The volume of the substance necessary for such a probability to take place is beyond all imagination. It would be that of a sphere with a radius so great that light would take 10^{82} years to cover this distance. The volume is incomparably greater than that of the whole universe including the farthest galaxies, whose light takes only 2×10^6 (two million) years to reach us. In brief we would have to imagine a volume more than one sextillion, sextillion, sextillion times greater than the Einsteinian universe. (12)

The probability for a single molecule of high symmetry to be formed by the action of chance and normal thermic agitation remains practically nil. Indeed, if we suppose 500 trillion shakings per second (5×10^{14}), which corresponds to the order of magnitude of light frequency, we find that the time needed to form, on an average, one such molecule in a material volume equal to globe is about 10^{243} billions of years of years (1 followed by 243 zeros). (13)

But we must not forget that the Earth has only existed for 4-5 billion years ago, and that life appeared about 3.8 billion years ago. Here life itself is not in question but merely one of the substances, which constitute living beings. Now, one molecule is of no use. Hundreds of millions of identical ones are necessary. We would need much more figures to explain the appearance of a series of similar molecules, improbability increasing considerably. When a period of trillions and trillions of years would be required for a single non-living protein molecule to develop in a purely random way, we have to ask ourselves, how more than 2 million (20 lacs) species of plants and animals with fully developed bodies could have originated upon the surface of the earth *within* relatively short period of 3.8 billion years. And how was it that innumerable members of each species reproduce themselves and became widespread throughout the land and the oceans? It is really inconceivable than within such a short span of time, a superior and the most advanced and intelligent creature like 'Man' could have evolved from inferior living organisms, and all just by the merest chance. Whereas evolutionary theory is based upon a certain incidence of chance mutations – accidental variations – among different species, but even supposing rare mutations conferring a 1 percent advantage did occasionally occur, just how rapidly could they be accumulated in a species. Prof Patau, in his *Mathematical Analysis of the Evolutionary Theory* has shown that it would take about 1000,000 (10 lacs) generations to effect a population breeding true for this new mutation. (14) According to Dr. Haluk NurBaki, about 39×10^{20} changes are required in the genetic code to evolve an insect from amoeba. Similarly about

3×10^{520} alterations are necessary for the evolution of Man from a monkey, which requires time that cannot be expressed in figures. (15) But keep this fact in mind that first monkey appeared on earth 35 million years ago, and the first bipedal anthropoids walking on two feet – *Homo erectus* – appeared about 3 million years

ago and the modern man *Homo sapiens sapiens* appeared about 35-100 thousand years ago. (16)

This detailed analysis has been made here simply to expose the absurdity of the "chance occurrence" theory. Neither an atom, nor a molecule, nor the mind, which applies itself to how the universe originated, could have come into existence by pure "chance". No how long a period may be considered for it, the theory of chance occurrence is impossible, not only from the mathematical point of view, but also from the standpoint of common sense. As a theory, it just does not carry any weight.

An American physiologist, Dr. Andrew Conway Ivy writes: It is many times more absurd to believe that this causal chain came from nothing, and was due to chance, that it would be to believe that you could get a map of the world by spilling a glass of water on the floor. Hoyle comments rightly: "If one is not prejudiced either by social beliefs or by a scientific training into the conviction that life originated (spontaneously) on the earth, this simple calculation wipes the idea entirely out of court". (17)

M. B. Kreider is very much right in his comment "The mathematical probability of chance occurrence of all the necessary factors in the right proportion is almost nil". (18)

WITHOUT A CREATOR, ORIGIN AND EVOLUTION OF LIFE IS IMPOSSIBLE

There are three ways of trying to explain how life came here:

1. Either it was made, or created or caused by nothing at all.
2. or it is created itself
3. or it has a creator, cause or maker outside itself

The first and second explanations are obviously impossible. It is inconceivable for something that has a beginning in time to come out of or be made of nothing, at all. It is also inconceivable that it should bring itself into being. The universe (and all living things in it) therefore could not have been created itself nor did it come about by chance as we observed in the preceding pages. The conclusion then is clear. The universe and all living things owe their existence to a Creator or a Maker outside the universe. This fact, besides all religious teachings, also authenticated and endorsed by eminent biologists and scientists of the past and of the current eras.

Klaus Dose an eminent Biochemist observed: "At present all discussions on Principal theories and experiments in the field either end in stalemate or in a confession of ignorance". (18) Even at the 1996 international conference on Origin of life, no solutions were presented. Instead, the journal "Science" reported that the nearly 300 scientists who convened had grappled with the riddle of how (DNA and RNA) molecules first appeared and how now they evolved into self reproducing cells". (19)

Interviewed in a documentary film Professor Maciej Giertych, a noted geneticist from the Institute of Dendrology of the Polish Academy of Science answered:

"We have become aware of the massive of information contained in the gene. There is no known way to science how that information can arise spontaneously. It

requires an intelligence; it cannot arise from chance event. Just mixing letters does not produce words." He added:

"For example the very complex DNA, RNA, protein replication system in the cell must have been perfect from the very start. If not, life systems could not exist. The only logical explanation is that this vast quantity of information came from an intelligence. The more we learn about the wonders of life, the more logical it is to agree that the origin of life requires an intelligent source." (21) But why many scientists and evolutionists do not believe in that intelligent source, Sir Fred Hoyle comments:

"Indeed such a theory (that life was assembled by an intelligence) is so obvious that one wonders why it is not widely accepted as being self-evident. The reasons are psychological rather than scientific". (22)

About this psychological reason, Physicist H.S. Lipson said:

"The only acceptable explanation (for the origin of Life) is creation. I know that this is anathema to physicists, as indeed it is to me, but we must not reject a theory that we do not like if the experimental evidence supports it". He further observed that after Darwin's book, "The Origin of Species", evolution became in a sense a scientific religion; almost all scientists have accepted it and many are prepared to 'bend' their observations to fit in with it". (23)

Chandra Wickramasinghe, Professor at University College Cardiff rightly comments on the evolution of such psychology:

"From my earliest training as a scientist I was very strongly brain-washed to believe that science cannot be consistent with any kind of deliberate creation. That notion has had to be very painfully shed. I am quite uncomfortable in the situation, the state of mind I now find myself in. But there is no logical way out of it; it is just not possible that life could have originated from a chemical accident."

So Wickramasinghe concludes:

"There is no other way in which we can understand the precise ordering of the chemicals of life except to invoke the creations on cosmic scale." (24)

Darwin himself due to the mind-boggling complexity of life compelled to write in the final paragraph of "*The Origin of Species*" "**The Creator originally breathed life into few forms or into one. From so simple a beginning endless forms most beautiful and most wonderful have been and are being evolved**". After referring to the Darwin, the writer of the *Scientific Americans* Leslie Orgel writes (which is again due to psychological training) that Darwin, in his private correspondence was of the opinion that life could have originated by mere chemical reactions without creator. He writes:

"In private correspondence, however, he suggested life could have arisen through chemistry, in some warm little pond, with all sorts of ammonia and phosphoric salts, light, heat, electricity, etc present". After quoting this, Orgel further describes the psychological bend of mind of the twentieth century, which led to atheism.

"For much of the 20th century, origin-of-life research has aimed to flesh out Darwin's private hypothesis (and not public opinion that The Creator originally breathed life into few forms or into one) – to elucidate how, without Supernatural intervention, spontaneous interaction of relatively simple molecules dissolved in the

lakes or oceans of the periodic world could have yielded life's last common ancestor. (25)

But after the research of more than 100 years, that "**Private Hypothesis**" of Darwin is not proved yet, and much remains to be done.

The same writer Orgel confesses:

"It is extremely improbable that proteins and nucleic acids both of which are structurally complex arose spontaneously in the same place at the same time, yet it also seems impossible to have one without the other. And so, at first glance (and also in long run) one might have to conclude that life could never, in fact, have originated by chemical means". (26)

This is the dilemma with which scientists of to-day are usually confronted, that is, whether DNA came first or proteins because for protein synthesis (translation process) at least fifty macromolecules are required whose message is coded in DNA. So DNA needs proteins and proteins need DNA. Again we are confronted with the riddle of 'chicken and egg' at the molecular level with even more profound consequences.

This fact is also admitted by other scientist:

"DNA cannot do its work, including forming more DNA, without the help of catalytic proteins or enzymes. In short, proteins cannot form without DNA, but neither can DNA form without proteins. How did the Genetic Code, along with the mechanism for its translation (ribosomes and RNA molecules) originate? For the moment, we will have to content ourselves with a sense of wonder and awe, rather than with an answer? (27)

There are thousands of examples of biomolecules and biochemical reactions in living things that could not have been a result of gradual modifications and accumulation. Professor Michael Behe wrote a good book on the theme of biochemical challenge to evolution titled *Darwin's Black Box* in which he gave many examples from molecular biology and biochemistry of vision, defense mechanism of bombardier beetle, the complexity of bacterial flagella, complexity of DNA, RNA and protein molecules. He then concludes:

To a person who does not oblige to restrict his research to unintelligent causes, the straightforward conclusion is that many biochemical systems were designed. They were designed not by the laws of nature, not by chance and necessity; rather, they were *planned*. The designer knew what the system would look when they were completed, then took step to bring the systems about. Life on earth in its most fundamental level, in its most critical components, is the product of intelligent activity. (28)

Lord Kelvin is very much right in saying:

"It is impossible to conceive either the beginning or continuance of life without an overruling creative power. Overpowering strong proofs of benevolence and intelligent design are to be found around us, teaching that all living things depend on the Everlasting Creator and Ruler." (29)

Another scientist writes:

"So highly intricate are the organic and biochemical processes functioning in the animal organisms that all this demands a planner and a sustainer of infinite intelligence. The simplest man-made mechanism requires a planner and a maker.

How a mechanism ten thousand times more evolved and intricate can be conceived as self-constructed and self developed, is completely beyond me." (30)

At this point I am compelled to quote the words of the Arabic desert nomad about God, which are although much simpler, but much profound and adequate for this occasion. He said:

"That Camel droppings point to existence of a camel. Footprints on the sand tell of a traveler. The heavens with all its (billions and trillions) of stars, the earth with its mountains and valleys and the seas with all its waves (and other diverse living creatures) – don't they point to the Maker, all-Powering, Knowing, Wise and Caring". (31)

DIFFICULTIES OF DARWIN'S THEORY

Some other problems and difficulties faced by evolutionists in the origin and evolution of life by mere blind chance and natural selection are those which were also mentioned by Darwin.

Although he presented a number of evidence to support his theory, but he was also well aware that his theory faced a lot of problems. He confessed those in chapter 6th of his book "The Origin of Species," as "Difficulties of the Theory".

These difficulties primarily consisted of the fossil record, formation of complex organs of living things such as the eye, and the instinct of living things e.g. the instinct which leads the bee to make precise hexagonal chambers in the hive, and which has practically anticipated the discoveries of profound mathematicians.

Darwin explained those problems and difficulties in different ways, which are not so satisfactory. The American physicist Lipson made the following comments on the "Difficulties" of Darwin.

'On reading the Origin of Species, I found that Darwin was much less sure himself than he is often represented to be; the chapter entitled "Difficulties of the Theory" for example, shows considerable self-doubt. As a physicist, I was particularly intrigued by his comments on how the eye would have arisen.'(32)

Let us discuss those "Difficulties" in detail:

The Fossil Record: According the theory of evolution, every living species has evolved from a predecessor. A previously existing species turned into something else in time and all species have come into being in this way. According to the theory, this transformation proceeds gradually over millions of years.

If this is fact, then numerous intermediary species should have existed and lived within this long transformation period and their remains should be in millions preserved in the fossil record. In the origin of species, Darwin explained: Of the same group together must assuredly have existed is consequently evidence of their former existence could be found only among fossil remains."(33)

Darwin himself was aware of the absence of such transitional forms. It was his hope that they should be found in the future. Despite his hopefulness, he realized that the biggest stumbling-block in his theory was the missing transitional forms. Therefore he wrote the following in the chapter."Difficulties of the theory.

“Why, if species have descended from other species by fine gradations, do we not everywhere see innumerable transitional forms? Why is not all nature in confusion, instead of the species being, as we see them, well defined?But, as by this theory innumerable transitional forms must have existed, why do we not find them embedded in countless numbers in the crust of the earth? ... But in the intermediate region, having intermediate conditions of life, why do we not now find closely-linking intermediate varieties? This difficulty for a long time quite confounded me.”(34)

The single explanation Darwin could come up with to counter this objection was the argument that the fossil record uncovered so far was inadequate. He asserted that when the fossil record had been studied in detail, the missing links would be found.

Believing in Darwin’s prophecy, evolutionists have been searching for fossils and digging for missing links since the middle of the 19th century all over the world. Despite their best efforts, no transitional forms have yet been uncovered. All the fossils unearthed in excavations showed that contrary to the beliefs of evolutionists, life appeared on earth all of a sudden and fully-formed. Trying to prove their theory, the evolutionists have instead unwittingly caused it to collapse.

A famous British paleontologist, Derek V.Ager, admits this fact even though he is an evolutionist:

The point emerges that if we examine the fossil record in detail, whether at the level of orders or of species, we find over and over again not gradual evolution, but the sudden explosion of one group at the expense of another.(35)

Another evolutionist paleontologist Mark Czarnecki comments as follows:

A major problem in proving the theory has been the fossil record; the imprints of vanished species preserved in the Earth’s geological formations. This record has never revealed traces of Darwin’s hypothetical intermediate variants. Instead species appear and disappear abruptly, and this anomaly has fueled the creationist argument that each species was created by God.(36)

They have also had to deal with the futility of waiting for “missing” transitional forms to appear in the future, as explained by a professor of paleontology from Glasgow University, T. Neville George:

There is no need to apologize any longer for the poverty of the fossil record. In some ways, it has become almost unmanageably rich and discovery is outpacing integration ... The fossil record nevertheless continues to be composed mainly of gaps.(37)

Cambrian Explosion: Another constraint to Darwinian gradualism

Due to the scanty of intermediate transitional fossil forms and the presence of gaps between species, biologists and paleontologists were compelled to look for some other explanation for diversity of animal forms. Stephen J. Gould and Nile Eldridge put forth the theory of Punctuated Equilibrium according to which evolution took place in big, discontinuous jumps instead of slow continuous and gradual changes. The course of evolution consisted of long periods of stasis during which a species undergo virtually no change and very short period of explosive evolution when it suddenly gives rise to several species that appear to burst in the fossil record persaltum.(38)

Although there is considerable controversy about Punctuated Equilibrium, but there are many evidence which support this theory. The March 10, 1995, issue of *Science* presented new research on invertebrate paleontology which provided quite unimaginable evidence for the first time that at least in some lineages the evolutionary pattern was one of millions of years of stasis interrupted by periods of no more than 100,000 of rapid and sudden change. After quoting this, Michael Denton beautifully summarizes the Cambrian Explosion :

The most celebrated of all evolutionary explosions is of course the sudden appearance of nearly all the major types of animal life in the early Cambrian seas. It has always been accepted that this explosion was compressed into a very short time span, geologically speaking, about 30 million years. However, recent research drastically reduced this time span to perhaps as little as 5 million years.... Explosive evolution is not only a phenomenon of animal evolution; the same pattern is seen in plants. Most of the modern flowering plants appeared in a few million years in the middle of the Cretaceous era. (39)

Instinct: Evolved blindly or intelligently programmed

Another difficulty of the theory is that, can instinct be acquired and modified through natural selection?

Darwin was himself aware of that difficulty, he wrote, " many instincts are so wonderful that their development will probably appear to the reader a difficulty sufficient to overthrow my whole theory". He further confessed that: I may here premise that I have nothing to do with the origin of the mental powers, any more than I have with that of origin of life". (40)

Scientists today are no closer to explaining instinct than Darwin was. One evolutionist says: "The plain fact is that the genetic mechanism shows the slightest sign of being able to convey specific behaviour patterns When we ask ourselves how any instinctive patterns of behaviour arose in the first place and become hereditarily fixed we are given no answer.(41)

The migration characteristics of animals particularly of birds and fishes show special instinctive behaviour which can not be explained by natural selection but reveal the supreme creative powers of Almighty Allah.

Birds migrate long distances sometimes more than 15000 - 20000 miles in search of food from scarcity areas to food surplus areas due to change in weather conditions.

The arctic terns complete an annual migration of about 22,000 miles from north pole to south pole and back.

White storks spend summer in Europe but fly 8000 miles to winter in south Africa.

Many migrations are made for the first time by young birds without adults. Young long-tailed cuckoo of New Zealand travel 4000 miles to pacific Island to join their parents who had gone earlier. It has been observed that these birds have uncanny sense of direction and are capable of relating the release point to their home area and of determining which direction to take, then maintaining that direction in flight. They travel these long distances, sometimes non-stop with great economy of energy and are highly sensitive "to both the intensity and the direction of the earth's mantic field". This unique compass sense demonstrated by the birds is derived from celestial objects. For those who travel during day time, the sun is the point of orientation during the day. A so-called internal clock mechanism in birds involves their ability to gauge the angle of sun above the Horizons. Those traveling during the

night (cuckoos, fly catchers) obtain their directional orientation with the help of stars.(42)

Similarly how does one dancing honey bee tells others bees where nectar is, how much there is, how far it is, in which direction it is and the kind of flower it is on?

Scientists can not explain such instinctively wise examples. Natural selection can not account for it. Such intelligence demands an intelligent source, that is nothing but an Intelligent, Wise Creator.

Organs of Extreme Perfection and Complication

The main characteristic of evolutionary theory is its reliance on 'chance' as a means of evolution rather than a 'design'. For if it could be proved that there exists no design in the emergence of species and complex organs, and that each species and organ become perfect through gradation, as Darwin proposed, then one can eliminate not only the design, but also the designer. However, if on the contrary, it can be shown that there exists no possibility of chance evolution of perfect organs and species, because of their complexity, and then Darwin's theory will break down. Darwin himself was aware of this fact. He wrote in the origin of species:

"If it could be demonstrated that any complex organs existed, which could not possibly have been formed by numerous successive, slight modifications, my theory would absolutely break down. (43)

There exist in nature thousands of examples of these complex organs as well as complex chemical reactions that could not have been a result of successive modifications. The examples of eye and ear are the most important.

Darwin himself wrote:

To suppose that the eye with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light and for the correction of spherical and chromatic aberration could have been formed by natural selection seems, I freely confess, absurd in the highest degree. (44)

But he further argues to defend his theory:

"If numerous gradations from a simple and imperfect eye to one complex and perfect can be shown to exist, each grade being useful to its possessor, and if the eye varies and the variations inherited, then the difficulty of believing that a perfect and complex eye could be formed from natural selection should not be considered as subversive (destructive) to the theory.(45)

The complexity of vertebrates and human eye exclude their emergence just by chance. There are about one million neurons within 2.5 cm diameter of human eye ball that convert light waves into electrochemical impulses that are decoded by the brain. The eyes of vertebrates (including humans) work like camera (rather more complex than a camera) the image being brought to a focus on the sensitive retina. The retina is composed of layers of slender cells, the underneath layer consists of photoreceptors, the rods and cones. There are about 125 million rods and 7 million cones in each human eye. The rod cells, which are not color-sensitive, function mainly in dim light. The cones can see in light and are color sensitive. (46)

Now such a complex organ and its functioning are claimed to be formed by chance. The absurdity of such claim can be explained in this way; if somebody told you that the television or a camera in your room was formed as a result of chance, that all its atoms and parts just happened to come together and make up this device that produces an image, what would you think? The answer will be in negative. So if a device producing a more primitive image than the eye could not have been formed by chance, then it is very evident that the eye and the image seen by the eye could

not have been formed by chance. It requires a much more detailed and wise plan and design than the one in the TV and a camera.

Similarly like human eye, human brain is so complex, that evolution can not account for. Human brain consists of about 100 billion neurons,(each with 10,000 to 100,000 connections with other cells, making a total of 10^{15} connections) which can hold information that would fill some twenty million volumes. (47)

There are also hundreds of such difficulties and problems in the universe and in living things which can not be explained by mere blind physical flux and chance.

The Miraculous Molecule: DNA

Complex systems aside, evolutionists are unable to explain the formation of even the basic units of the cell like DNA and proteins.

While the theory of evolution has been unable to provide a coherent explanation for the existence of molecules that are the basis of the cell structure, developments in the science of genetic and the discovery of nucleic acids (DNA and RNA) have produced brand-new problems for the theory of evolution. The molecule called DNA, which is found in the nucleus of each of the 75 trillion cells in our body, contains the complete construction plan of human body. The information regarding all the characteristics of a person, from the physical appearance to the structure of the inner organs, is recorded in DNA by means of a special coding system. The information in DNA is coded within the sequence of four special bases that make up this molecule. These bases are specified as A,T,G,C according to the initial letters of their names. All the structural differences among people depend on the variations in the sequence of these letters. This is a sort of a **data-bank** composed of four letters.

The sequential order of the letters in DNA determines the structure of a human being down to its slightest details. In addition to features like height, eye, hair and skin colors, DNA of a single cell also contains the design of 206 bones, 600 muscles, a network of 10,000 auditory muscles, a network of 2 million optic nerves, 100 billion nerve cells, many thousand meters long blood vessels and 75 trillion cells in the body. If we were to write down the information coded in DNA, then we would mean to compile a giant library consisting 900 volumes of encyclopedias of 500 pages each. This incredibly voluminous information is encoded in the components of DNA called "genes". (48)

The System of storing information is immense. According to Gerald Schroeder "*if all the information in all the libraries in all languages were transcribed into the language of DNA , it could be recorded within a volume equivalent to 1 percent of the head of a pin.*" (49) According to some other scientists *a DNA chain small enough to fill a teaspoon has the capacity to store all the information contained in all the books ever written .* (50)

What is the source of Information in DNA?

There are 30-40 thousand genes in each cell of human body containing about 3.5 billion base pairs, It becomes more evident how impossible it is for millions of nucleotides making up these genes to be formed by coincidence in the right sequence. Enormity of information stored in DNA chain is not due to the letters (Bases A, T, G, C) but due to the triplet sequence of these bases - codons- along the DNA chain – genetic code. Our alphabet is a clear example of a code. Its twenty-six component letters can be arranged into an endless variety of patterns containing meaning or information. The information resides not in the letters themselves but in

the specific sequence that is given to the letters in a piece of writing. Same is the case with DNA

It is not the nucleic acids themselves that contain the information in DNA. Rather it is the *specific sequence* of base pairs that bears the "meaning." So we must ask whether chemistry (or any physical science) can specify the overall sequence of nucleic acids that determines the kinds and shapes of organisms existing in the biosphere. (51)

Based on Polanyi's Model, John Haught argues that the sequence of base pairs in DNA is in fact *extraneous* to the chemistry underlying the life process. Chemical activity is of course a necessary condition for the emergence and existence of life; But it is not a sufficient condition. Materialism founders on the logical confusion of necessary with sufficient conditions.

The letters on the page before you have a very specific *sequence*. (*Sequence* is the most important term in our discussion.) Does chemistry determine the sequence of letters on this page? Or is there not something *extraneous* to chemistry that gives the specific sequence? Again, chemical reactions or properties are a *necessary* condition for my communicating information, but are they a *sufficient* condition? Is not something else involved here?

It is clear that the meaning or information you are receiving now is primarily a result of the specific sequence of letters on this page and not of the chemistry of ink and paper. And while you the reader and I the writer are both *relying on* the workings of invariant chemical processes, the *meaning is extraneous to the chemistry*. You do not go to the chemist as such to discern the meaning of a chapter in this book. The meaning of this chapter has been made "incarnate" by the author in a *specific sequence of letters of a code* whose variability has allowed him to arrange them in the pattern you see before you. And while he is relying on the stability of chemical processes to inform you, he would no doubt be insulted if someone told him that an analysis of the chemistry of ink and paper would yield an adequate understanding of this chapter.

Now are we sure that the case of DNA's information-bearing ability is completely different from this example? Granted, there are obvious disparities. Still is it not possible that the *specific sequence* of base-pairs in a DNA molecule is extraneous to the chemistry which bonds the nucleic acids to one another? (52) Is it not legitimate to go beyond the chemical factors involved and to ask what factors may be involved in determining the *specific sequence* in the code of life? Can the answer possibly be chance alone? Or the Word of God based on His infinite Wisdom and knowledge,(52) is the main source of immense information throughout the cosmos and in living things. (The word of) Wisdom is the building block, the substrate, from which all the time and space, matter and life were created. Wisdom is the interface between the physics of the world and the metaphysics of creation.

To search out the link between the two will take more than results from laboratories of physics and molecular biology.(54) That link can be discerned by those who live at the level of Understanding and can see beyond all existence Unity which has been named as *Sacred, Intelligence, Nous*(Mind), *Logos*(Reason),

Brahma, Tao, Torah, (55) Allah , Rahman, Raheem and Khaliq(Almighty Creator)
by different traditions of the world.(56)

That Cosmic Mind –Almighty Creator– has been (is) communicating to us through verbal and non-verbal sources, (57) i.e. through Scriptures of all ages and through the book of nature. The former is called Revelation through which God presents His will in an articulate manner and the latter is cosmos (and all diverse life in it) through which God is showing Himself globally without any discrimination. In the Holy Quran God employs the word *ayat* (signs) not only for the verses of the scripture but for all phenomena of nature . Just as the Quran is God's book displaying His Signs, so also the cosmos is His book, and there is no difference at this basic level between linguistic and non-linguistic (verbal and non-verbal) Signs , both types are equally Divine *ayat* (Signs) for those who reflect and understand. In this context, A single cell of any organism with all its complex matchless machinery with immense system of information storage, a tiniest atom with all its wonders, hundreds of complex organ and systems in living things and man, more than billion galaxies each with more than hundred billion stars, precision and accuracy in mechanisms from the tiniest part of the cosmos to its biggest spheres, all are non-verbal global communication from the Almighty Creator to manifest Himself . In the Quran , God declares:

We shall show them our Signs (ayat) in the universe and in themselves until it becomes clear to them that He (Allah) is Real (41: 53)

In the words of Bible:

The Eternal said [to Moses and to us to-day]: *I will make all my goodness [wonders of creation] pass before you.... You shall see my back [as one finds, in the wake left by a boat, evidence of boat's passage], but my face shall not be seen.*

(Exodus 33:20, 23)

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