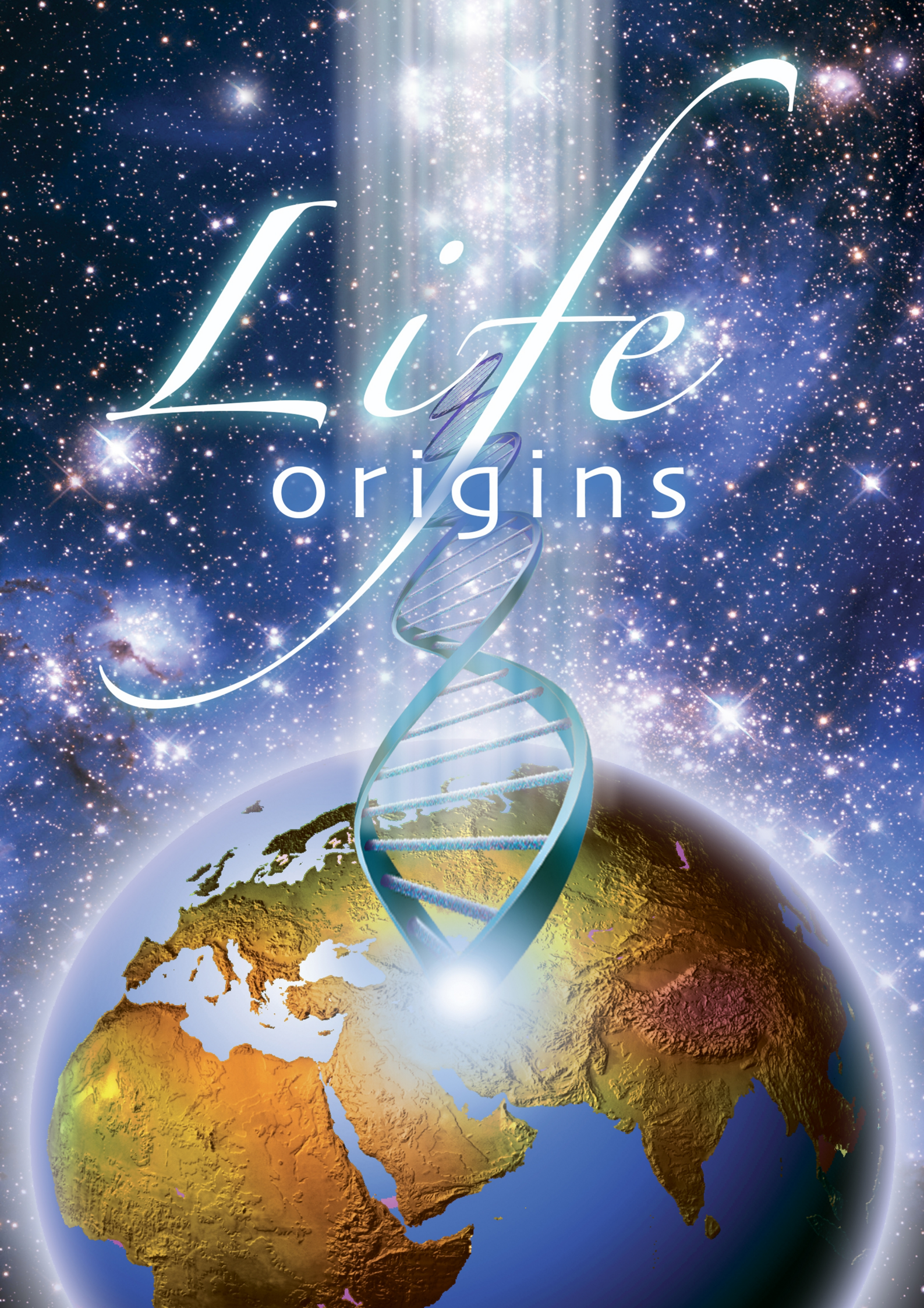

Life
origins

Life Origins

All are in agreement on at least one point in this discussion: atheists, agnostics, evolutionists, creationists, and others, all believe *that life had a beginning*. The details of that beginning, as hypothesized by those who have studied it, include the answers to several fundamental questions:

Where did life begin?

When did life begin?

What were the forces and circumstances which led to the development of life?

What evidence exists to help in answering these questions?

In the following pages we will endeavor to present fundamental aspects of each theory and the responses to these questions by their respective proponents. All answers are taken directly from reputable sources which support the theory under discussion. In some cases, ***bold-italics*** have been added to emphasize key aspects of the information quoted.

Information is presented in the following order:

Evolution

Abiogenesis

Intelligent Design

A Critical Analysis of Each Theory

Summary and Conclusions

Bibliographic Footnotes

Evolution

DEFINITIONS:

Evolution: *Descent with modification from **preexisting** species. Cumulative **inherited** change in a population of organisms through time leading to the appearance of new forms. The process by which new species or populations of living things develop from **preexisting** forms through successive generations.* [1]

Evolution: *Change in the **heritable** characteristics of biological populations over successive generations.* [2]

AUTHORSHIP:

Charles Darwin: His book: *"The Origin of Species"* (1859), is considered to be the foundation of evolutionary biology. [3]

KEY FEATURES AND ASSUMPTIONS:

Darwin's book introduced the scientific theory that populations evolve over the course of generations through a process of natural selection. [4]

Current thinking is that: *"All life on Earth shares a **common ancestor** known as the last universal common ancestor (LUCA), which lived approximately 3.5–3.8 billion years ago."* [5]

*"Evolutionary biology is the subfield of biology that studies the evolutionary processes that produced the diversity of life on Earth, starting from a **single common ancestor**. These processes include natural selection, common descent, and speciation."* [6]

Darwin himself wrote: *"There is grandeur in this view of life, with its several powers, having been **originally breathed by the Creator** into a few forms or into one."* [7]

ANSWERS TO THE FOUR BASIC QUESTIONS:

Where did life begin?

The Evolution theory does not attempt to answer this question. It begins with *the last universal common ancestor (LUCA)* already in existence.

When did life begin?

Proponents suggest a wide range of dates, but 3.5 to 4.5 billion years is the most common.

What were the forces and circumstances which led to the development of life?

Again, the Evolution theory does not attempt to answer the question of life's origins. However, Darwin ascribed the beginnings of life to an intelligent Creator. The Evolution theory is dependent on the Abiogenesis theory as a precursor.

What evidence exists to help in answering these questions?

Evidence used to support the Evolution theory includes:

Natural Selection

The Fossil Record

Common Structures, or Comparative Anatomy

Distribution of Species

Similarities during Embryological Development

Abiogenesis

DEFINITIONS:

Abiogenesis: The origin of life from nonliving matter; specifically: a theory in the evolution of early life on Earth. Organic molecules and subsequent simple life forms first originated from inorganic substances. [8]

Abiogenesis: The natural process by which life arises from non-living matter, such as simple organic compounds. [9]

AUTHORSHIP:

The Oparin-Haldane Theory: *In the 1920s British scientist J.B.S. Haldane and Russian biochemist Aleksandr Oparin independently set forth similar ideas concerning the conditions required for the origin of life on Earth. Both believed that organic molecules could be formed from abiogenic materials in the presence of an external energy source.* [10]

Alexander Ivanovich Oparin: A Soviet biochemist notable for his theories about the origin of life and for his book *The Origin of Life*. [11]

According to Oparin, in the primitive Earth's surface, carbon, hydrogen, water vapour, and ammonia reacted to form the first organic compounds. [12]

EXPERIMENTS, OBSERVATIONS AND ASSUMPTIONS:

The Miller–Urey Experiment *(or Miller Experiment) was a chemical experiment that simulated the conditions thought at the time to be present on the early Earth, and tested the chemical origin of life under those conditions.* [13] *As observed in* ***all subsequent experiments****, both left-handed (L) and right-handed (D) optical isomers were created in a racemic mixture.* ***In biological systems, almost all of the compounds are non-racemic****, or homochiral.* [14]

Optical isomers are mirror images of certain molecules, in this case amino acids. A racemic mixture is one in which there are equal amounts (in this case left-handed and right-handed optical isomers). A non-racemic or homochiral compound is one in which all the molecules are either left-handed or right-handed, meaning they have no mirror image. [15]

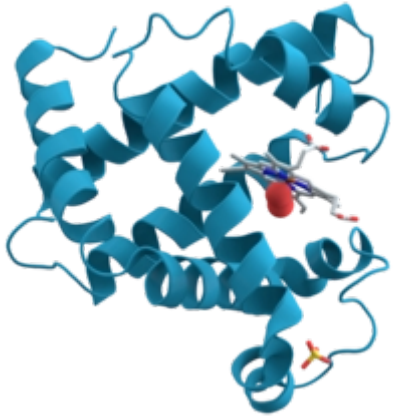
In biological organisms, amino acids appear ***almost exclusively*** *in the* ***left-handed*** *form (L-amino acids)....Since the enzymes catalyze reactions, they* ***enforce homochirality*** *on a great variety of other chemicals, including hormones, toxins, fragrances and food flavors.* [16]

Laboratory experiments to force the production of non-racemic mixtures required the addition of a reaction product with "enantiomeric excess" (a forced imbalance). [17]

Where this “reaction product with enantiomeric excess” came from is a matter of speculation. A popular theory suggests an *extraterrestrial origin* of homochirality. [18]

The Miller-Urey Experiment, and all subsequent experiments of a similar nature, produced a variety of amino-acids in both left-handed and right-handed form. Amino acids are the building-blocks of life, but there are about 500 naturally occurring amino acids, and only 20 of these appear in the genetic code, and they are all of the left-handed variety. [19]

Amino-acids link together to form proteins. Proteins are large biomolecules, or macromolecules, consisting of one or more long chains of from 30 to over 33,000 amino acid residues. [20] *A protein contains at least one long chain, known as a polypeptide. Short polypeptides, containing less than 20–30 residues, are rarely considered to be proteins.* [21]



A representation of the 3D structure of the protein myoglobin showing turquoise α-helices. This protein was the first to have its structure solved by X-ray crystallography. Towards the right-center among the coils, is a prosthetic group called a heme group (shown in gray) with a bound oxygen molecule (red). [22]

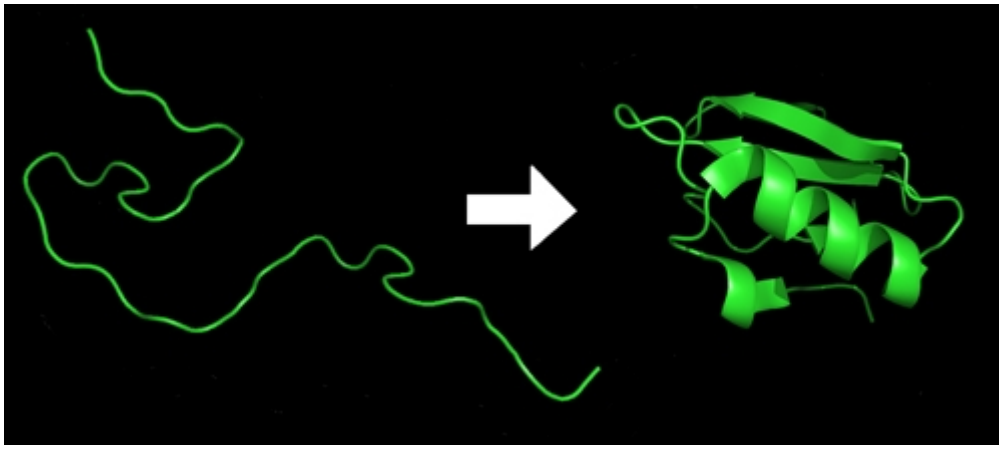
*Once formed, **proteins only exist for a certain period** and are then degraded and recycled by the **cell's machinery** through the process of protein turnover. A protein's lifespan is measured in terms of its half-life and covers a wide range. They can exist for varying lengths of time with **an average lifespan of 1–2 days** in mammalian cells.* [23]

*Proteins differ from one another primarily in their sequence of amino acids, which is dictated by the nucleotide sequence of their genes, and which usually results in protein folding into a **specific three-dimensional structure** that determines its activity.* [24]

To summarize: Amino acids are the building blocks of proteins. Proteins are the building blocks which are ***assembled*** (via protein synthesis) and ***folded*** to create a wide variety of structures. The sequence of amino acids for each protein is specific and exact. These structures work together with other structures to achieve a particular function.

Protein synthesis** is the process whereby biological cells generate new proteins.* This complex process is ***dependent on DNA, RNA, and the Ribosome, which is two chains of RNA composed of more than 50 different proteins. [25]

Protein folding *is the physical process by which a protein chain acquires its native 3-dimensional structure, a conformation that is usually biologically functional, in an expeditious and reproducible manner. It is the physical process by which a polypeptide folds into its characteristic and functional three-dimensional structure from random coil. Each protein exists as an unfolded polypeptide or random coil when* ***translated*** *from a sequence of mRNA to a linear chain of amino acids. This polypeptide* ***lacks any stable*** *(long-lasting)* ***three-dimensional structure*** (the left side of the illustration below).[26]



Failure to fold properly generally produces ***inactive*** proteins, but in some instances misfolded proteins have modified or ***toxic*** functionality. While these macromolecules may be regarded as "folding themselves," the process also depends on other factors, including molecular chaperones. ***Molecular chaperones*** are a class of proteins that aid in the correct folding of other proteins. These chaperones exist in all cellular compartments and interact with the polypeptide chain in order to allow the native three-dimensional structure of the protein to form.

The next step in Abiogenesis theory is the **Protocell**:

"A protocell (or protobiont) is a self-organized, endogenously ordered, spherical collection of lipids proposed as a stepping-stone to the origin of life. ***A central question in evolution is how simple protocells first arose*** *and how they could differ in reproductive output, thus enabling the accumulation of novel biological emergences over time, i.e. biological evolution. Although* ***a functional protocell has not yet been achieved in a laboratory setting****, the goal to understand the process appears well within reach."*[27]

The existence of protocells would have been necessary before unknown processes acted upon them to form single-celled, self-replicating organisms.

"Although ***the origin of life is largely still a mystery****, in the currently prevailing theory, known as the RNA world hypothesis, early RNA molecules would have been the basis for catalyzing organic chemical reactions and self-replication."*[28]

In other words, based on current thinking, RNA had to exist before any of the subsequent theoretical steps would have been possible.

ANSWERS TO THE FOUR BASIC QUESTIONS:

Where did life begin?

Some proponents of Abiogenesis believe that life began on Earth independent of external factors. A growing number believe that an extraterrestrial source was necessary for the "starting material."

When did life begin?

The most common date proposed for the earliest single-celled, self-replicating life-forms is about 3.5 to 4.5 billion years ago. Additional billions of years prior to this are theorized as necessary for the various steps of Abiogenesis to take place.

What were the forces and circumstances which led to the development of life?

The first step assumes a "primordial soup" in which amino acids formed spontaneously. The second step assumes that L-amino acids from step one spontaneously linked together in sophisticated sequences to form proteins. The third step assumes that proteins from step two spontaneously folded into the three-dimensional shapes necessary to create functional protein structures. The fourth step assumes that functional protein structures from step three spontaneously formed protocells. The final step assumes that protocells developed into single-celled, self-replicating organisms.

What evidence exists to help in answering these questions?

The Miller-Urey Experiment of 1952 continues to be the ***only evidence*** cited to support this theory.

John D. Sutherland conducted an experiment in 2009 in which rybocytidine phosphate emerged (a *precursor* to RNA), but the laboratory conditions were not accepted as representative of an early-Earth scenario. His results are not widely recognized as "a plausible pathway to the RNA world".

None of the other steps have been proven in a laboratory setting.

No explanation currently exists for the sequence-specific, information rich qualities of DNA, which is essential to the *RNA world hypothesis.*

Intelligent Design

DEFINITIONS:

Intelligent Design is the view that it is possible to infer from empirical evidence that "certain features of the universe and of living things are best explained by an intelligent cause, not an undirected process such as natural selection." [29]

AUTHORSHIP:

No single individual is credited with being the *author* of this theory. Inferring *design* from nature is at least as old as Plato and Aristotle, and Christian writers have used the inference for centuries to argue for God's existence and attributes. Cosmologist Fred Hoyle is believed to be the first to use the term *"Intelligent Design"* in 1982. [30]

KEY FEATURES AND ASSUMPTIONS:

CSI: Complex and Specified Information in nature and the Universe are evidences of Intelligent Design.

Intelligent Design may be considered to consist only of the minimal assertion that it is possible to infer from verifiable observation that some features of the natural world are best explained by an intelligent agent.

Irreducible Complexity: A single system composed of several well-matched interacting parts that contribute to the basic function, wherein the removal of any one of the parts causes the system to effectively cease functioning, is cited as an example of Intelligent Design. [31]

The Design Inference (1998, William A. Dembski) formalized, quantified and generalized the logic of design inferences: (a) Is the feature contingent (i.e.. not due to natural law or regularity)? (b) Is the feature complex (i.e., highly improbable)? (c) Is the feature specified (i.e., does it conform to an independently given pattern)? [32]

Design in the Cosmos: In *The Privileged Planet*: How Our Place in the Cosmos is Designed for Discovery (2004), astronomer Guillermo Gonzalez and philosopher Jay W. Richards argued that the universe and our place in it are designed not only for life, but also for science. [33]

This paper explains a ***specific variation*** of Intelligent Design that is based, in principle, on the foregoing features and assumptions.

ANSWERS TO THE FOUR BASIC QUESTIONS:

Where did life begin?

Intelligent Design, as herein presented, does not address the question of *where* life began. It postulates an intelligent Creator that is responsible for life on Earth, but does not attempt to assign a starting point to the first form of life.

When did life begin?

Intelligent Design, as herein presented, does not address the question of *when* life began. It is generally in agreement with the idea that life existed on Earth for long periods of time corresponding to the epochs of geology. However, these epoch days are believed to be much shorter in comparison to the estimates of geologists.

What were the forces and circumstances which led to the development of life?

Intelligent Design, as herein presented, theorizes that life on Earth was the result of an intelligent Creator introducing and manipulating the building blocks of life in various stages, gradually resulting in more and more sophisticated forms of life. This could be styled “controlled evolution”.

What evidence exists to help in answering these questions?

Criteria accepted by the scientific community as evidence of intelligent life include:

complex and specified information,

tools, machines and mechanical systems that perform sophisticated functions,

mathematics, numeric sequences and logic systems.

These evidences of intelligence, which therefore support Intelligent Design, are found in abundance in nature and in various features of the Universe.

Critical Analysis

Evolution

Evidence cited:

(a) *Natural Selection*

While selective breeding has resulted in certain adaptations ***within a species***, repeated experiments under carefully controlled conditions have failed to provide any evidence of one species developing into another by this method.

(b) *The Fossil Record*

*"Because of the **incompleteness of the fossil record**, there is usually **no way to know** exactly how close a transitional fossil is to the point of divergence. Therefore, **it cannot be assumed** that transitional fossils are direct ancestors of more recent groups, though they are frequently used as models for such ancestors."* [34]

There is no complete set of fossils currently in existence to prove that any life-forms evolved from earlier life-forms. Proponents of Evolution explain that this lack is due to missing fossils which have yet to be discovered. Such faulty reasoning cannot be used to "prove" any theory.

(c) *Common Structures, or Comparative Anatomy*

Similarities between DNA of *living species* has been given as a proof of Evolution. Such similarities may support certain aspects of the theory, but are not a proof of evolutionary processes in the past. There are other possible explanations, such as "controlled evolution". [See discussion under Intelligent Design.]

DNA testing can only be used on tissue that has not putrefied. This covers a very small portion of the time-spectrum of life on Earth (a few thousand years). Essentially DNA testing can only be used to prove matters relating to species whose DNA is intact. It cannot be used to *prove* evolutionary processes in the past. The half-life of DNA is 521 years. (Half of the chemical bonds in DNA break down during that time.) After a mere 10 generations (5,210 years) the integrity of DNA is only 0.001 which makes it meaningless for test purposes.

(d) Distribution of Species

Unique species in isolated geographic areas is cited as evidence of Evolution. This uniqueness may support certain aspects of the theory, but there are other possible explanations.

In a previous paper: *The Biblical Flood and Noah's Ark,* evidence is given that would support the post-Flood migration of various species with their human caregivers to specific geographic areas most suitable for their propagation.

(e) Similarities during Embryological Development

Embryological studies showing similarities to other species during development is cited as evidence of Evolution. This concept does not take into consideration that DNA for each species is still unique, and that procreation between species is impossible. There are other possible explanations, such as "controlled evolution". [See discussion under Intelligent Design.]

Further Discussion:

Darwin ascribed the beginnings of life to a Creator. Many proponents of creationism, including Charles T. Russell, in the *"Studies in the Scriptures"*[35] series, allow for the evolution of lower animals as a *possibility*. Nevertheless, there remain serious questions regarding this theory.

Mankind

Based on the Bible, our insistence is that the human race began with the creation of a single man and a single women.

Modern Science supports this thought:

"In human genetics, the Mitochondrial Eve (also mt-Eve, mt-MRCA) is the matrilineal most recent common ancestor (MRCA) of all currently living humans, i.e., the most recent woman from whom all living humans descend in an unbroken line purely through their mothers, and through the mothers of those mothers, back until all lines converge on ***one woman****."*[36]

"The male analog to the Mitochondrial Eve is the Y-chromosomal Adam (or Y-MRCA), the individual from whom all living humans are patrilineally descended."[37]

First Micro-Organisms

The Evolution Theory requires ***hundreds of millions of years*** in order for the first micro-organisms to develop into complex life-forms such as exist today, through "many small changes over long periods of time." However, a recent Evolution research paper presents strong proof that all current life on Earth developed from mitochondria that has its origins ***NO MORE than 200,000 years ago***, so that figure could actually be much lower. The authors of this research paper are strong Evolutionists, and did not expect the results they obtained, but were honest enough to present them regardless of the significant problems their results pose for the Evolution Theory.

"...the extant population, no matter what its current size or similarity to fossils of any age, has expanded from mitochondrial uniformity ***within*** *the past 200,000 years."*[38] The Bible record supports a starting point of approximately 45,000 years ago.

Dating Methods

The "hundreds of millions of years" time frame, as proposed by some, is pure guesswork. Current methods utilized by scientists are primarily ***Carbon-14 Dating, Stratigraphic Superposition Dating, Potassium-argon Dating*** and ***Fossil Record Dating***. All four methods, and others of a similar nature, are far from accurate.

Carbon-14 Dating [39]

Another important atomic clock used for dating purposes is based on the radioactive decay of the isotope carbon-14, which has a half-life of 5,730 years. ***Carbon-14 is produced continuously in the Earth's upper atmosphere as a result of the bombardment of nitrogen by neutrons from cosmic rays.*** *This newly formed radiocarbon becomes uniformly mixed with the nonradioactive carbon in the carbon dioxide of the air, and it eventually finds its way into all living plants and animals. In effect, all carbon in living organisms contains a constant proportion of radiocarbon to nonradioactive carbon. After the death of the organism, the amount of radiocarbon gradually decreases as it reverts to nitrogen-14 by radioactive decay. By measuring the amount of radioactivity remaining in organic materials, the amount of carbon-14 in the materials can be calculated and the time of death can be determined.*

The radiocarbon clock has become an extremely useful and efficient tool in dating the important episodes in the ***recent*** *prehistory and history of man, but because of the relatively short half-life of carbon-14, the clock can be used for dating events that have taken place only within the past 50,000 years.*

In geologic time, 50,000 years is miniscule compared to the hundreds of millions of years required by Evolution and Abiogenesis. Furthermore, the Carbon-14 dating method assumes that the atmospheric conditions which exist today, have been constant for the past 200 million years. This thinking is out of harmony with current theories which combine Catastrophism with Uniformitarianism. [40] It is also out of harmony with strong evidence that the composition of Earth's atmosphere even in the relatively recent past was vastly different from today. [See page 16.]

Stratigraphic Superposition Dating [41]

Between the years of 1785 and 1800, James Hutton and William Smith advanced the concept of geologic time and strengthened the belief in an ancient world. Hutton, a Scottish geologist, first proposed formally the fundamental principle used to classify rocks according to their relative ages. He concluded, after studying rocks at many outcrops, that each layer represented a specific interval of geologic time.

However, unlike tree-ring dating (in which each ring is a measure of 1 year's growth) no precise rate of deposition can be determined for most of the rock layers. Therefore, ***the***

actual length of geologic time represented by any given layer is usually unknown or, at best, a matter of opinion.

Stratigraphic Superposition, still commonly used today, is merely guesswork and carries no weight in proving dates.

Potassium-argon Dating (K-Ar Radiometric dating)

Potassium–argon dating, abbreviated K–Ar dating, is a radiometric dating method used in geochronology and archaeology. It is based on measurement of the product of the radioactive decay of an isotope of potassium (K) into argon (Ar). [42]

However, K-Ar Radiometric dating does not yield accurate results under test conditions. Rock from the Mount St. Helens lava flow (1986) was dated by this method in 1996. This ***ten year old sample*** was assigned an age of between 350,000 years and 2.8 million years. [43] Many other examples of ***false*** readings can be cited, as shown in the table below.

SITE	ROCK TYPE	DATE OF FORMATION	K-Ar ASSESSED AGE
Haualalai (Hawaii)	Basalt	AD 1800-1801	1.6 million years old
Mt Etna (Sicily)	Basalt	122 BC	0.25 million years old
Mt Etna (Sicily)	Basalt	AD 1792	0.35 million years old
Mt Lassen (California)	Plagioclase	AD 1915	0.11 million years old
Sunset Crater (Arizona)	Basalt	AD 1064-1065	0.27 million years old

[G.B. Dalrymple, *Earth and Planetary Sciences Letters*, Vol. 6, p:47-55 1969]

Fossil Record Dating

Dating and sequencing of fossils using Stratigraphic Superposition is *at best*, a matter of opinion. Potassium-argon dating is highly inaccurate as proven in laboratory tests.

Critical Analysis

Abiogenesis

Evidence cited:

The Miller-Urey Experiment

As previously stated, this experiment continues to be the ***only evidence*** cited to support this theory. However, it is admitted that the conditions in the laboratory did not correctly simulate the atmospheric conditions in the early Earth. Also the basic question of the necessity for Left-handed amino acids in all life-forms is admitted by proponents of Abiogenesis as a major flaw in this theory. They do not have an answer for this objection.

It has been demonstrated in laboratory experiments similar to the *Miller-Urey Experiment* that it is ***theoretically possible*** for amino acids to form under ***assumed conditions*** which ***may*** have been present on the early Earth. However, in every case, the amino acids which formed were of both right-handed and left-handed varieties, in relatively equal proportions, while amino acids which create proteins necessary for life are all left-handed, and have enforced homochirality, or "left-handedness."

It has been demonstrated in laboratory experiments that it is possible to achieve enforced homochirality in amino acids. (Such dominant left-handedness is necessary in order to explain life as we know it.) However, this state could only be achieved by introducing a "reaction product with enantiomeric excess" (something that already possessed enforced homochirality, or left-handedness). ***The origin of this reaction product is unknown.***

Amino acids had to form into sequence-rich, complex and massive macromolecules called proteins. Laboratory experiments have proven that the proteins necessary for life are not "self-sequencing."

These proteins had to be folded, by means of other proteins called molecular chaperones. Without folding, such proteins are useless, and even toxic to life.

These folded proteins had to form into sophisticated structures which interacted with other folded proteins to form systems which performed specific functions.

These systems had to eventually form into protocells.

Protocells had to eventually evolve into self-replicating single-celled organisms.

Proteins have ***an average lifespan of 1–2 days*** in mammalian cells. Each protein exists as an unfolded polypeptide or random coil when ***translated*** from a sequence of mRNA to a linear chain of amino acids. *"The average lifetime of mRNA is between **3 and 8 minutes**."*[44] Therefore all the steps of "evolution" from the initial formation of unfolded proteins, to the existence of self-replicating single-celled organisms would have had to be accomplished within a very short span of time, measured in days rather than millions of years.

None of these various steps has been proven in a laboratory setting. This process is still an ***open question.***

All of these steps require sequence-specific, information rich DNA as a starting point. But DNA is not self-organizing. There are no chemical forces which can explain the origin of DNA base sequencing. These principles are true of RNA as well.

Proponents of Abiogenesis argue that 4.28 billion years would have been sufficient time for the foregoing ***unproven*** steps to occur. But long periods of time work ***against*** this theory, as shown in the short lifespan of proteins and mRNA along with other destructive processes.

Even if we remove the short lifespan of proteins and mRNA from the equation, careful statistical analysis disputes Abiogenesis. Consider just one example: A minimally complex cell needs at least 250 proteins with an average of 150 amino acids each. To randomly produce all the necessary proteins to service ***one*** minimally complex cell is one chance in $10^{41,861}$. By contrast: There have been roughly 10^{16} seconds since the Big Bang. There are 10^{80} subatomic particles in the observable Universe. The shortest amount of time in which any event can take place is called the Planck time, which is $1/10^{43}$ seconds. Mathematically, this means that the maximum number of consecutive events which could have taken place since the Big Bang is less than 10^{140}.

To put the question into a different context, if all the oceans, of all the potential earthlike planets in the entire Universe, were composed only of L-amino acids, and they recombined every second for 10 billion years, the odds of the *proteins* necessary for the simplest possible self-replicating entity forming spontaneously is one chance in $10^{64,390}$. Even if there were billions of so-called parallel Universes, the probability of these proteins forming spontaneously is zero. Additionally, these proteins then had to be folded, assembled, etc., by information-rich DNA.

Geochemical studies show that significant amounts of free oxygen existed in the early Earth, which would have been hostile to the production of amino acids, etc. [45] When adding in destructive processes like this one, which have been proven to have existed in the early Earth, the mathematical possibility for random processes to have generated the necessary proteins for life becomes an ***absolute impossibility***.

Critical Analysis

Intelligent Design

The scientific method is commonly described as a four-step process involving observations, hypothesis, experiments, and conclusion. Intelligent Design begins with the observation that intelligent agents produce complex and specified information (CSI). Design theorists hypothesize that if a natural object was designed, it will contain high levels of CSI. Scientists then perform experimental tests upon natural objects to determine if they contain complex and specified information. One easily testable form of CSI is irreducible complexity, which can be discovered by experimentally reverse-engineering biological structures to see if they require all of their parts to function. When ID researchers find irreducible complexity in biology, they conclude that such structures were designed. [46]

(a) Intelligent agents produce complex and specified information.

DNA is the most complex and condensed form of information known to exist in the Universe. Human DNA is comprised of more than 3 billion base pairs, containing complete design and structural specifications for the individual. [47]

Intelligent Design, as herein presented, attributes the complexity of DNA to an intelligent agent. Similarities between DNA of lower animals and humans is considered efficient reuse and enhancement of the genetic code under "controlled evolution" to produce new species.

Original human DNA was devoid of "coding errors." Mutations of DNA in various species have never been proven to be beneficial in detailed studies, and therefore go against the idea of *"natural selection"* proposed by Evolutionists. *"Considering both theory and data, I conclude that, while considerable theoretical progress has been made, we still lack sufficient data to draw confident conclusions about the distribution of effects or the dominance of beneficial mutations."* [48]

(b) Intelligent agents make tools, machines and mechanical systems that perform sophisticated functions.

DNA is merely the programming code for the organism. Various tools, machines and mechanical systems within the cell are necessary to use this information to perform various sophisticated functions. The number of such systems is large and varied, numbering in the tens of thousands. A detailed consideration is beyond the scope of this paper.

A 35 minute video is available at this link:

https://www.youtube.com/watch?v=UXpbEm11Urk

Intelligent Design, as herein presented, attributes the existence of such tools, machines and mechanical systems as evidence of an intelligent agent.

(c) Intelligent agents utilize mathematics, numeric sequences and logic systems.

Every cell of every living organism contains higher mathematics, elaborate numeric sequences, and sophisticated logic systems. Without these the cell could not exist. DNA provides the instructions which are used by the machinery of the cell. The actions of these molecular machines must conform to the logic of the DNA. Furthermore, these molecular machines follow complex rules of logic in carrying out their various functions.
Intelligent Design, as herein presented, attributes the existence of higher mathematics, elaborate numeric sequences, and sophisticated logic systems within the cell as evidence of an intelligent agent.

(d) Irreducible Complexity

Systems within the cells of all living organisms contain well-matched interacting parts, the removal of any one of the parts causing the system to effectively cease functioning. This is evidence of Intelligent Design. The video cited previously gives detailed examples. [49]

* * *

The unanswered questions associated with abiogenesis can be easily answered by the "controlled evolution" concept within Intelligent Design. All time-constraints encountered under abiogenesis are thereby removed. The source of a "reaction product with enantiomeric excess" and all other unexplained steps in Abiogenesis are attributed to an intelligent Creator manipulating and controlling all the factors necessary for life to develop.

Summary and Conclusions

The foregoing demonstrates clearly that there are major problems with the Abiogenesis theory and with the Evolution theory that can be solved by Intelligent Design.

- Even under *generous assumptions,* spontaneous generation of all the proteins necessary for even the simplest forms of life is a *mathematical impossibility*. That is only the first link in a supposed chain of events.

- How proteins formed into protocells is *unknown*.

- In spite of repeated attempts, scientists have *not* generated proteins from amino acids in laboratory experiments.

- Likewise, scientists have *not* succeeded in generating protocells from proteins in laboratory experiments.

- Furthermore, it is still *unknown* how protocells developed into self-replicating organisms.

- Protein synthesis in single-celled, self-replicating organisms requires RNA as a minimum. The origin of RNA is *unknown*.

- RNA is useless without the Ribosome, which is itself a complex structure containing more than 50 proteins. The origin of Ribosomes is *unknown*.

- The steps necessary to progress from unfolded proteins to self-replicating, single-celled organisms, within the short lifespan of both proteins and the mRNA which folds them, are *unknown*.

Energy alone cannot assemble a group of components into a functionally specified system. At best you might have something like crystals, but nothing resembling *information* or *function*. Events that occur predictably, of necessity do not generate information; though they may generate complexity, they do not possess function. Even the simplest DNA contains massive amounts of information. The theory of natural selection requires sequence-specific, information rich DNA, and proteins. The laws of nature create order, but not information.

The origin of life has not been explained or proven by Modern Science. Scientists themselves admit that the origin of life is ***"largely still a mystery"***.

Additionally, there are no current dating methods that can be used to support either the Evolution or Abiogenesis theories.

Intelligent Design combines certain aspects of Abiogenesis and Evolution, and answers the questions that remain unanswered by both.

[1] https://www.merriam-webster.com/dictionary/evolution
[2] https://en.wikipedia.org/wiki/Evolution
[3] https://en.wikipedia.org/wiki/On_the_Origin_of_Species
[4] Ibid.
[5] https://en.wikipedia.org/wiki/Last_universal_common_ancestor
[6] https://en.wikipedia.org/wiki/Evolutionary_biology
[7] http://darwin-online.org.uk/converted/pdf/1861_OriginNY_F382.pdf#page=450
[8] https://www.merriam-webster.com/dictionary/abiogenesis
[9] https://en.wikipedia.org/wiki/Abiogenesis
[10] https://www.britannica.com/science/abiogenesis#ref1118862
[11] https://en.wikipedia.org/wiki/Alexander_Oparin
[12] https://en.wikipedia.org/wiki/Primordial_soup
[13] https://en.wikipedia.org/wiki/Miller–Urey_experiment
[14] https://en.wikipedia.org/wiki/Miller–Urey_experiment#Experiment
[15] https://en.wikipedia.org/wiki/Homochirality
[16] https://en.wikipedia.org/wiki/Homochirality#In_biology
[17] https://en.wikipedia.org/wiki/Homochirality#Experiments
[18] https://en.wikipedia.org/wiki/Homochirality#Symmetry_breaking
[19] https://en.wikipedia.org/wiki/Amino_acid
[20] https://en.wikipedia.org/wiki/Titin
[21] https://en.wikipedia.org/wiki/Protein
[22] Ibid.
[23] Ibid.
[24] Ibid.
[25] https://en.wikipedia.org/wiki/Protein_biosynthesis
[26] https://en.wikipedia.org/wiki/Protein_folding
[27] https://en.wikipedia.org/wiki/Protocell
[28] https://en.wikipedia.org/wiki/Unicellular_organism#Evolutionary_hypothesis
[29] http://www.newworldencyclopedia.org/entry/Intelligent_design
[30] http://www.newworldencyclopedia.org/entry/Intelligent_design#History
[31] http://www.newworldencyclopedia.org/entry/Intelligent_design#Michael_J._Behe
[32] http://www.newworldencyclopedia.org/entry/Intelligent_design#William_A._Dembski
[33] http://www.newworldencyclopedia.org/entry/Intelligent_design#Guillermo_Gonzalez_and_Jay_W._Richards
[34] https://en.wikipedia.org/wiki/Transitional_fossil
[35] http://www.agsconsulting.com/docs/V1.pdf#page=35
[36] https://en.wikipedia.org/wiki/Mitochondrial_Eve
[37] Ibid.
[38] https://phe.rockefeller.edu/news/wp-content/uploads/2018/05/Stoeckle-Thaler-Final-reduced.pdf#page=23
[39] http://www.dnr.louisiana.gov/assets/TAD/education/BGBB/1/rad_measuring.html
[40] https://en.wikipedia.org/wiki/Uniformitarianism
[41] http://www.dnr.louisiana.gov/assets/TAD/education/BGBB/1/strat_measuring.html
[42] https://en.wikipedia.org/wiki/K-Ar_dating
[43] https://www.unmaskingevolution.com/3-k_ar.htm

[44] http://book.bionumbers.org/how-fast-do-rnas-and-proteins-degrade/
[45] Towe, "Environmental Oxygen Conditions";
Berkner and Marshall, "On the Origin and Rise of Oxygen Concentration", 225;
Kasting, "Earth's Early Atmosphere";
Brinkman, "Dissociation of Water Vapor and Evolution of Oxygen," 5355;
Dimroth and Kimberly, "PreCambrian Atmospheric Oxygen," 1161;
Carver, "Prebiotic Atmospheric Oxygen Levels", 136;
Holland, Lazar, and McCaffrey, "Evolution of the Atmosphere and Oceans";
Kasting, Liu, and Donahue, "Oxygen Levels in the Prebiological Atmosphere";
Kerr, "Origin of Life"
[46] http://www.intelligentdesign.org/whatisid.php
[47] https://bitesizebio.com/8378/how-much-information-is-stored-in-the-human-genome/
[48] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2871816/
[49] https://www.youtube.com/watch?v=UXpbEm11Urk

Essential reading:
Signature in the Cell by Stephen C. Meyer
http://www.signatureinthecell.com

Interesting reading:
https://www.universetoday.com/139467/new-model-predicts-that-were-probably-the-only-advanced-civilization-in-the-observable-universe/