

The Molecular Machine

Biological Evolution's Stumbling Block

“To get a cell by chance would require at least one hundred functional proteins to appear simultaneously in one place. That is one hundred simultaneous events each of an independent probability which could hardly be more than 10^{-20} .”¹

Michael Denton

Night skies showcase multiples of ten million bright lights set against a dark field of infinite space. On a micro scale, invisible to the human eye, the simplest cell imaginable boasts a format of “*supreme technology and bewildering complexity*” built from “*about ten million atoms.*”²



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**Every living cell powering this elegant
Canada Goose flying machine, is infinitely more complex
than any mechanism ever designed by human genius.**

Primitive wisdom envisioned cells as little more than infinitesimal pieces of cytoplasm, “*a relatively disappointing spectacle appearing only as an ever-changing and apparently disordered pattern of blobs and particles.*”³

Biochemist Michael Denton’s vision of a living cell, examined under the probing eye of an electron microscope, opened vistas nineteenth century

evolutionists never imagined. *“There is little doubt that if this molecular evidence had been available one century ago it would have been seized upon with devastating effect by the opponents of evolution theory...and the idea of organic evolution might never have been accepted.”*⁴

The overwhelming discontinuity at nature’s molecular level is highlighted in Denton’s *Evolution: A Theory in Crisis* where he compares the living cell to a *“microminiaturized factory.”*

“The tiniest bacteria cells are incredibly small, weighing less than 10⁻¹² gms, each is in effect a veritable microminiaturized factory containing thousands of exquisitely designed pieces of intricate molecular machinery, made up altogether of one hundred thousand million atoms, far more complicated than any machine built in the non-living world...

“Nor is there the slightest empirical hint of an evolutionary sequence among all the incredibly diverse cells on earth...

*“The complexity of the simplest known type of cell is so great that it is impossible to accept that such an object could have been thrown together suddenly by some kind of freakish, vastly improbable event. Such an occurrence would be indistinguishable from a miracle.”*⁵

Throughout the early post-Darwin era, fossil bones anchored pre-history investigations, providing thin grist for Darwinian conjecture. In one giant leap beyond academia’s near-sighted focus on fossils, intricacies of the complex cell took center stage driven by electron microscope scrutiny. Molecular biologists pulled back the curtain concealing the previously unseen and unknown. Eyes of discovery marvel in wonder at a pulsating package of coordinated microscopic motors driving life’s synchronized system.

The cell has emerged as a vibrant speck of organic life, more complex than any machinery yet designed by human intelligence. What once had been dismissed as bland bits of protoplasm jumped out as genetic treasure troves driving diversified life formats. Insightful discoveries revealed by molecular biology heralded a wake-up call for propagators of the chance hypothesis.

With the advent of molecular biology, the mystery of life’s origin shifted from obsession with bits and pieces of fossils to the microscopic mother lode of information.

Relying on the power of the microscope, only four years after the 1925 Scopes trial, H. G. Wells and Julian S. Huxley spotted *“snakelike threads”* writhing *“slowly through the cell”* which they called *“mitochondria”* while noting they could see nothing *“inside the nucleus but a clear fluid.”*⁶

This imperfect glimpse of a cell’s inner workings proved but a hint of things to come. Once the electron microscope debuted with magnification capability of a million times, researchers devoured an unfolding panorama of knowledge.

Short decades after evolution theory took root, molecular biology surfaced raising eyebrows and temperatures. Investigation of previously invisible life forms turned naturalistic interpretations of the cell's intricate life system upside down. The unfolding of the "*unparalleled complexity*" of a living cell continues to fire the imaginations of sophisticated academics.

The simplest cell consists of nitrogen, hydrogen, carbon and oxygen. It stores an encyclopedia of working knowledge and reproduces copies of itself. This miniscule mechanism of grandeur performs its assigned tasks while acting in concert with other cells in a system sustaining a unique life form.

"To grasp the reality of life as it has been revealed by molecular biology, we must magnify a cell a thousand million times until it is 20 kilometers in diameter and resembles a giant airship large enough to cover a great city like London or New York.

"What we would then see would be an object of unparalleled complexity and adaptive design. On the surface of the cell we would see millions of openings, like the portholes of a vast spaceship, opening and closing to allow a continual stream of materials to flow in and out. If we were to enter one of these openings we would find ourselves in a world of supreme technology and bewildering complexity...

"The simplest of the functional components of the cell, the protein molecules, were astonishingly complex pieces of molecular machinery, each one consisting of about 3,000 atoms...

*"What we would be witnessing would be an object resembling an immense automated factory...larger than any city and carrying out almost as many unique functions as all the manufacturing activities of man on earth...a factory which would have one capacity not equaled in any of our own most advanced machines, for it would be capable of replicating its entire structure within a matter of a few hours."*⁷

Beyond a pulsating pack of cytoplasm with its nucleus wrapped in a membrane, the cell contains machinery performing a multitude of actions every split second. *"Life is far more than chemicals, and building life immensely more complex than pasting carbon, hydrogen, oxygen, and nitrogen together in clever ways. Every coffin in the cemetery is filled with those same chemicals, but no one walks out in the morning."*⁸

Not only is the transitional continuity predicted by evolution lacking in fossil fields, the molecular world of living cells shouts discontinuity.

*"We now know not only of the existence of a break between the living and non-living world, but also that it represents the most dramatic and fundamental of all the discontinuities of nature...."*⁹

*“It is well established that the pattern of diversity at a molecular level conforms to a highly ordered hierarchic system. Each class at a molecular level is unique, isolated and unlinked by intermediates. Thus molecules, like fossils have failed to provide the elusive intermediates so long sought by evolutionary biology.”*¹⁰

No scientist has yet successfully synthesized life from inert non-life, nor explained the how, when and where first life originated by accident. *“...The chemical reactions required to form proteins and DNA do not occur readily. In fact, these products haven’t appeared in any simulation experiment to date.”*¹¹

Biochemist Michael Behe, working with an assistant in the NIH lab, *“...analyzed the supposed miracle of the first living cell coming into being by historical accident. ‘What would you need?’ they asked each other. ‘You need a membrane, a power supply, and you need some genetic information. You need a replication system. And we kind of stopped and looked at each other. We said, ‘Nah.’”*¹²

Beyond the over-the-moon odds of a living cell creating itself from non-living inorganic matter, a nagging, unresolved enigma remains: where did the information pre-loaded in the cell come from? A living cell’s treasure trove of microscopic data reflects a level of precision reminiscent of the inorganic atoms depicted in the Periodic Table of the Elements. Instructions essential for life’s functions are built into the cell. This definitive language of life is encoded in every cell in a microscopic, double helix ladder labeled DNA!

Science community proponents of chemical and biological evolution have yet to offer verifiable data explaining how information evolves from inorganic data---without input from any external, intelligent source.

In 1953, Francis Crick and James Dewey Watson earned their figurative spurs in the science hall of fame by uncovering DNA’s delicate, double helix design. Identification of DNA’s intricate design clouded further the *“hopeless muddle”* of evolution’s assumptive imaginings.

Nineteenth century simple cell dogma vanished, existing now only in the lexicon of obsolete, never-was science and in the minds of the misinformed. Academics of Darwin’s day would have been astounded had they been introduced to the invisible intricacies of one-celled Prokaryote organisms, wrapped in a membrane encasing protein and a coded dose of DNA.

Clearly, any change in an organism, however slight, originates in the DNA--not inherited through the physical use or disuse of a body part.

Beyond a pulsating pack of cytoplasm with a nucleus wrapped in a membrane, a cell contains machinery performing a multitude of actions every

second. It absorbs food, discards wastes, repairs, replaces, and reproduces---all actions functioning pursuant to DNA's built-in code of instructions. ¹³

DNA's pre-programmed data looms as an imperative for cell formation, function and reproduction. *"DNA (deoxyribonucleic acid) and RNA (ribonucleic acid) molecules, which are composed of complex arrays of amino acids and are the templates for all living organisms, have yet to be artificially created."* ¹⁴

At a minimum, a living cell requires a system of regulatory mechanisms; a constant supply of energy; an abundance of four nitrogenous bases; ribotide phosphates; twenty aminoacyl nucleotides; deoxyribonucleic acid (DNA); DNA polymerase; and RNA polymerase. ¹⁵ Evolution's postulated radical transition of a life format to a new and entirely different plant or animal can't occur, unless it happens here.

By the year 2,000, the human genome, with its estimated three billion plus base pairs, had been deciphered. This complex system orchestrates 75-trillion human body cells. Ribosomes craft chains of proteins from a smorgasbord of twenty amino acids. Proteins don't form naturally from chemicals. Never has *"one single functional protein molecule"* been discovered resulting from random chance processes.

The twenty amino acid chains that make proteins can't order themselves.

Typically a protein consists of 500 amino acid chains. There are more than 30,000 distinct proteins. ¹⁶ It's a tall order to deliver 100,000 different proteins to the human body by random chance. A smorgasbord of a variety of amino acids provides the raw material from which proteins are built.

"A protein may have many of each kind. A typical protein will have a few hundred amino acids...To make a protein that will do something useful, the cell has to get the right amino acids in the right order." ¹⁷

Protein molecules constitute *"the simplest of the functional components of the cell."* Each of these molecular machines consists of *"about three thousand atoms arranged in highly organized 3-D spatial conformation..."*

"The life of the cell depends on the integrated activities of... probably hundreds of thousands of different protein molecules...It would be a factory which would have one capacity not equaled in any of our own most advanced machines, for it would be capable of replicating its entire structure within a matter of a few hours." ¹⁸

The key to proteins folding into specific, three-dimensional shapes is in the sequence and arrangement of amino acids. After assembling in correct sequence, a protein's *"...long amino acid chain automatically folds into a specific stable 3D configuration...Particular protein functions depend on highly specific 3D shapes...Significant functional modification of a protein*

would require several simultaneous amino acid replacements of a relatively improbable nature.”¹⁹

A protein’s failure to fold correctly, risks disaster. “*The protein’s most widespread role is as a catalyst in biochemical reactions, and in this role it is called an enzyme...Each reaction has its own enzyme...*” which can “*speed up a reaction rate by at least a million...An increase in rate by factors of ten billion to a hundred trillion are not uncommon...A factor of a hundred million means that what takes a thousandth of a second with the enzyme, would take about 3,000 years without it.*”²⁰

Unlike the which-came-first-chicken-or-egg quandary, the living cell debuted on the scene, hitting the ground fully functional, running with all its proteins and DNA information in place. There’s no room for a multi-million-year time gap for all critical raw material to catch up to assure functionality.

Enzymes--protein forms within the cytoplasm--stand guard as catalysts, expediting the life processes of the cell. Without the lightening-like speeds introduced by enzymes, biochemical reactions would take so long that they could fail to function. The odds against the 2,000 enzymes essential to the simplest life form appearing spontaneously from inorganic matter, at one time and in one place, runs at something in the range of $10^{40,000}$ to one.²¹

Drowning in such abysmal odds, no amount of hype can transform wishful thinking into unassailable fact---even in Las Vegas. Tissues, organs, and systems present a composite of living cells, each doing its specialized thing in synchronized concert. Heart cells code for the heart, skin cells for the skin, and brain cells for the brain.

“...200 million variations, ranging from microscopic red blood cells to long, skinny nerve cells that stretch from the base of the spine to the foot...

*“Every cell contains an estimated one billion compounds...and among these compounds are five million different kinds of proteins...These compounds are highly variable in shape, size, electrical charge, and configuration; many can complete a function in a millionth of a second.”*²²

“Organisms consist of a number of subsystems which are all co-adapted to react together in a coherent manner; molecules are assembled into multi-molecular systems,” which combine “*into cells, cells into organs*” resulting in a “*complete organism.*”²³

What prevents a cell from crossing over and performing the wrong service, in the wrong location, for the wrong organ? The cell’s awesome complexity in the context of the fully functional human system might have brought its accidental origin to its knees but for evolution’s entrenched bias.

The invisible living cell has yet another curve to throw evolution's way--- the conundrum of amino acids existing in left-handed and right-handed formats. Living cells build exclusively from left-handed amino acids.

*"Amino acid, when found in nonliving material...comes in two chemically equivalent forms. Half are right-handed and half are left-handed—mirror images of each other."*²⁴ This amino acid reality, doomed human attempts to artificially structure life-from-non-life, to certain failure. Explanation for this built-in biological discrimination mystifies finite minds.

*"Amino acids in life, including plants, animals, bacteria, molds, and even viruses, are essentially all left-handed. No known natural process can isolate either the left-handed or the right-handed variety. The mathematical probability that chance processes could produce merely one tiny protein molecule with only left-handed amino acids is virtually zero."*²⁵

Just as mysteriously, amino acids revert to inorganic matter's left-handed/right-handed status at death of a living system. Even with a laboratory-created reducing atmosphere, without a valid technique for producing left-handed amino acids exclusively, inevitable failure dooms any human attempt to manufacture life from non-life artificially.

*"...Amino acids produced in Miller's apparatus were both right-and left-handed amino acids, but right-handed amino acids are poisonous to living organisms. Right-handed amino acids render proteins nonfunctional."*²⁶

The complexity of the simplest known cell complicates attempts to build a viable theory rooted in chance. So, where does that leave a postulate that a composite of inanimate atoms might have assembled information for living cells from nothingness? And generated designs to be copied by humans? Engineering a system requires input from intelligent design, radically more than the luck-of-the-draw at the core of chemical and biological evolution.

David Coppedge summarizes a wide range of biological designs mimicked by industry, recognizing that *"in order to reverse engineer a system, it had to be engineered in the first place."*²⁷

A Madagascar spider spins silk ten times stronger than Kevlar; jellyfish are being studied in order to build a *"better aquatic pump."* Design of the elephant's trunk is referenced for building robotic arms. Sharkskin suggests a pattern for ship hulls and swimsuits. The optical flow of honeybee eyes provides guidelines for developing navigation systems capable of complex maneuvers.

The Modern Evolutionary Synthesis has yet to be verified in laboratory tests. The chance hypothesis lacks the rationality inherent in the design inference. Has it not evolved to be viewed as the "no-chance hypothesis?"

*"The Darwinian theory of descent has not a single fact to confirm it in the realm of nature. It is not the result of scientific research, but purely the product of imagination."*²⁸

Exploring the micro world of the living cell has done nothing to advance the flawed idea that life can create itself from non-life nor that the chance hypothesis explains the transition of the first living cell into a *Homo sapiens* if given mega-millions of years to complete the process.

Assertions built on assumptions neither manufacture nor equate fact. Superstitious nonsense blossoms when the assumption virus invades reasoning. Science, like religion, can be vulnerable to distortion by assumption. Redundant propaganda, touting unproven assumptions as scientific "fact," camouflages congenital defects plaguing the chance hypothesis.

Free society media champions free speech in pursuit of truth. Still, subtle enticements beckoning from evolution's "working hypothesis," can scramble fact with fiction. *USA Today* fell prey to the trap. In its August 9, 2005 edition, it exalted evolution, taking a swipe at "Intelligent Design."

*"It [evolution] is the cornerstone of modern biology. Though there are various 'missing links' in the evolutionary chain, it has never been refuted on a scientific basis."*²⁹

Its strange irony that a team of intelligent media minds composed phrases, designed a layout, printed and distributed thousands of copies while believing their own human brains created themselves, by random accident, from some undetermined, unintelligent source---without design or designer.

What precisely did Darwin postulate that "*scientists have confirmed?*"

British scientist Gerald A. Kerkut has made the point that evolution is riddled with unproven assumptions that "...by their nature are not capable of experimental verification." Topping the list is the assumption "*non-living things gave rise to living material, i.e. spontaneous generation occurred.*"³⁰

Kerkut's six other eye-popping assumptions do nothing to fortify evolution's credibility as "*confirmed*" science.

"The second assumption is that spontaneous generation occurred only once...The third assumption is that viruses, bacteria, plants and animals are all interrelated. The fourth assumption is that the Protozoa gave rise to the Metazoa.

*"The fifth assumption is that the various invertebrate phyla are interrelated. The sixth assumption is that the invertebrates gave rise to the vertebrates. The seventh assumption is that within the vertebrates the fish gave rise to the amphibia, the amphibia to the reptiles, and the reptiles to the birds and mammals..."*³⁰

Kerkut's seven-item roster threatens the fabric of evolution's grand scheme, nagging at the fringes of Darwinian thought. His candid blockbuster assessment concludes, "*The 'General Theory of Evolution' and the evidence that supports it is not sufficiently strong to allow us to consider it as anything more than a working hypothesis.*"³¹

Evolution's legacy teeters on the edge of Kerkut's bridge of sand!

Imaginative assumptions are inadequate substitutes for verifiable evidence. Assumptions become presumptuous, cosmetic cover for conjecture. Until verified by evidence, assumptions melt like wax caressed by the probing rays of the noonday sun.

Nothing significant has changed since Kerkut's reality checks.

Michael Denton characterizes spontaneous generation of a living cell as both "*freakish*" and "*vastly improbable.*" Infinitely more complex than the simplistic blob perceived in Darwin's day, Denton saw a mechanism more complex than any man-made machine. He reasoned it would be "*indistinguishable from a miracle*" if a cell had been "*thrown together suddenly by some kind of freakish...event.*"³²

*"It is the sheer universality of perfection, the fact that everywhere we look, to whatever depth we look, we find an elegance and ingenuity of an absolutely transcending quality, which so mitigates against the idea of chance."*³³

Mathematically, the odds against life by "chance" surpass impossible.

Regardless, media patrons of the chance hypothesis tend to flak, hype, and shill evolution's obsolete myths in a blizzard of clichés, confusing the public by awarding sham "science" an undeserved place of honor in the pantheon of academic respectability.

Richard Hutton, Executive Producer of the controversial PBS TV series, "*Evolution,*" was asked, "What are some of the larger questions still unanswered by evolutionary theory?"

He replied: "*The origin of life. There is no consensus at all here---lots of theories, little science. That's one of the reasons we didn't cover it in the series.*"

*"The evidence wasn't very good."*³⁴

Mark Twain's tongue-in-cheek humor resonates: "*There is something fascinating about science. One gets such wholesale returns of conjecture out of such a trifling investment of fact.*"³⁵

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