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Essay for the AiG Evolution Exposed
Research Paper Challenge 2007
April 16, 2007

In participating in the Evolution Exposed Research Paper Challenge, I prepared myself for the creation/evolution clash of worldviews. I chose to write about God's design of irreducibly complex cells because I knew it would be enjoyable reviewing what I learned in biology and digging deeper into the science of cells. As I researched, I was overcome with awe and wonder for our Creator God and His creation. He truly is infinitely intelligent and deserves our highest praise! It really strengthened my faith to see God's creativity in a more detailed light, and I was filled with a greater appreciation and love for the Lord.

This paper strengthened my pastors' creationist worldview and faith. My friend was encouraged to know that science supports his personal beliefs. I gave this paper to my chiropractor and discovered that he believes God used the process of evolution to create all things. My hope is that, after reading my paper, he will seriously consider if his view of divine evolution really fits into the Bible.

This contest enabled me to recognize how evolutionists' "worldview glasses" and presuppositions blind them to the truth and keep them from accepting Jesus as Creator of everything, especially irreducibly complex cells. Even though the Bible never specifically says, "God created cells," all the evidence and data is consistent with a Biblical worldview. Since it is impossible that these incredible miniature motors evolved by chance, why do naturalists still look for other ways to explain their hypotheses? I was amazed that many of them realize the problems with evolution but reject creation because they are so determined to live without God. Researching and writing about God's design of cells was a positive experience because I learned more about the creation/evolution conflict, became closer to God, and refined my worldview.

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God's Incredible Design of Irreducibly Complex Cells

by
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Literature in Writing
Mr. Lonsberry
Session 3
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Cells, whether prokaryotes or eukaryotes, are incredibly complex and intricate machines that are engineered with extreme precision. Within each cell, “there are thousands of what can be called ‘biochemical machines.’” (The New Answers Book 16) These machines are irreducibly complex, just like the cell they comprise, and must be *exactly right*, or else they cannot function. Prokaryotes are single-celled bacteria with non-membrane-bounded organelles. Even though they are reputed to be the simplest life forms on earth, they are superbly complex. Eukaryotes, particularly animal cells, are more complex than prokaryotes because they contain numerous membrane-bounded organelles. They are an astonishing orchestration of design. Cells are incredibly complex, and naturalists explain this developing evolution of complexity through two hypotheses, the infolding theory and endosymbiosis. However, there is little support for these hypotheses and much evidence against them. Many evolutionists are recognizing the problems with these theories that attempt to explain cells’ irreducible complexity. An infinitely intelligent Designer must have created these cells. That Creator and Designer is Jesus. Colossians 1:16-17 states, “For by Him all things were created: things in heaven and on earth, visible and invisible, whether thrones or powers or rulers or authorities; all things were created by Him and for Him. He is before all things, and in Him all things hold together.” The irreducible complexity of prokaryotes and eukaryotes cannot be explained by evolutionary processes and can only be understood in light of the Bible.

Despite the fact that they are generally called the “simplest” life forms on earth, prokaryotes are anything but simple. Most prokaryotes have a capsule, which helps them fasten onto surfaces and thwart infection-fighting agents. A cell wall not only holds the bacterium together, but it also keeps the cell’s shape and regulates the amount of water it can absorb. While the plasma membrane controls what substances enter the cell, the cytoplasm suspends the

ribosomes and DNA. The ribosomes produce proteins, while the DNA contains all the information “required to make this mass of chemicals a living entity.” (Wile and Durnell Exploring Creation 38-39) Some bacteria have fibrous bristles called fimbriae that enable them to adhere to surfaces and grasp one another for reproduction. The minute flagellum accomplishes locomotion, is remarkably complex, and is an excellent example of irreducible complexity. If any part of the flagellum were missing, the whole system would be destroyed. Is it scientific to believe that this amazing miniature motor came about through a series of mutations and random chance? Is it logical to think that *all* the vital parts of the bacterium were formed by accident in precisely the correct order and with the much-needed information to work harmoniously together as a microscopic, self-sustaining entity? (Wile and Durnell Exploring Creation 39-41)

drawn by Megan Whitaker

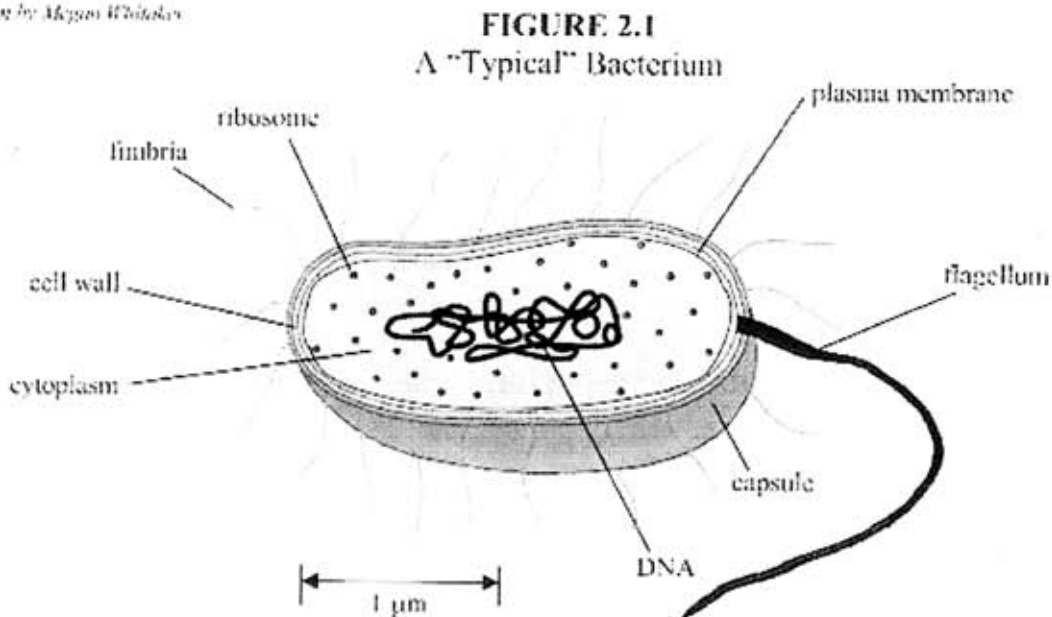


Fig. 1. The Complexity of a Prokaryote. Exploring Creation with Biology, Second Edition (Anderson: Apologia Educational Ministries, Inc., 2005) 38.

Scientists have never produced a single bacterium in the laboratory. Even if one were formed, it “would only demonstrate that highly intelligent scientists had to use state-of-the-art technology to accomplish this feat. This would be the work of intelligent design, not natural selection and random mutations.” (“Bacteria Back Creation”) Tom Wagner comments:

For a cell to live, it must be surrounded by a sophisticated membrane that allows only certain chemicals in and out, according to when they are needed, not just at any time. Inside a cell, the proportions of an element or compound must be just right, otherwise the whole system may be thrown off balance and the organism may die. Furthermore, the entire living mechanism must be controlled by the fantastically complex genetic structure of DNA....It could not possibly happen on its own. (Wagner Why life is impossible)

God has revealed a part of Himself – His glory, His creativity, His intelligence – in the tiny, simple bacterium. However, many people choose to ignore the wonders of God’s creation, as Romans 1:18-21 describes:

The wrath of God is being revealed from heaven against all the godlessness and wickedness of men who suppress the truth by their wickedness, since what may be known about God is plain to them...For since the creation of the world God’s invisible qualities – his eternal power and divine nature – have been clearly seen, being understood from what has been made, so that men are without excuse. For although they knew God, they neither glorified Him as God nor gave thanks to Him, but their thinking became futile and their foolish hearts were darkened.

Even though they may seem simple, prokaryotes are truly complex and are one of the many marvels of God.

The “more complex” eukaryote is also an astonishing work of the Designer. Eukaryotes exist as human, animal, and plant cells, as well as single-cell organisms. Animal cells, in particular, are an extraordinary feat of engineering. These cells must perform at least eleven different functions to remain alive, and each organelle in a cell has its own function or functions to complete. The plasma membrane is all that separates an animal cell from its surroundings. It allows nutrients, water, and oxygen to enter the cell, inhibits the entrance of toxins, and permits the waste products of the cell to exit. The cytoplasm is a “jellylike fluid” that suspends the cell’s organelles. Due to ions in the cytoplasm which cause cytoplasmic streaming, the organelles in a cell move in a coordinated way, responding to change. Mitochondria, the “powerhouses of the cell,” provide energy for the cell and contain their own DNA, which works with the nuclear DNA in a way which scientists do not fully understand. With the aid of enzyme catalysts, lysosomes break down proteins into amino acids, lipids into fatty acids, and other substances into their constituent elements through hydrolysis. They also act as the cell’s cleaners, breaking down old organelles and debris in the cell. Ribosomes are non-membrane-bounded organelles that synthesize proteins. Endoplasmic reticulum maintains the shape of the cell and transports complex molecules throughout the cell. Rough endoplasmic reticulum is dotted with ribosomes and aids in the production of proteins, while smooth endoplasmic reticulum produces other chemicals, inactivates harmful byproducts of organelle functions, and ejects them through the plasma membrane. Centrioles not only aid in the asexual reproduction of cells, but they also form cilia or flagella in cells. (Wile and Durnell Exploring Creation 161-168, 172)

FIGURE 6.5
A Less Simplified View of an Animal Cell

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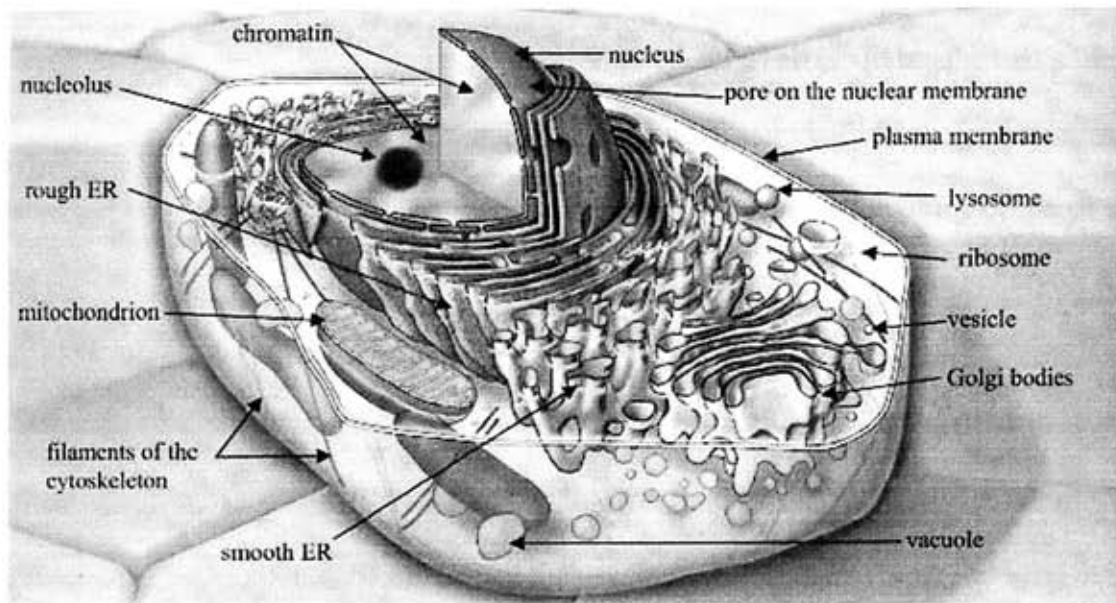


Fig. 2. The Complexity of an Eukaryotic Animal Cell. Exploring Creation with Biology, Second Edition (Anderson: Apologia Educational Ministries, Inc., 2005) 174.

This is only the beginning of the complexity of an animal cell. As Golgi bodies store and modify proteins and lipids to meet the needs of the cell, they “take in molecules, package and address them, and then send them to wherever they are needed.” (Wile and Durnell Exploring Creation 171) The cytoskeleton, made up of three different types of protein fibers, keeps the cell shape intact and aids in movement. Since the nucleus is the “control center of the cell” and contains the cell’s main DNA, it “tells the cell everything it needs to know about its structure and functions.” (Wile and Durnell Exploring Creation 172-173) The nucleus is surrounded by the nuclear membrane, a porous membrane that separates the nucleus from the cytoplasm. Inside the nucleus is chromatin, which consists of clusters of DNA, RNA, and proteins, as well as the nucleolus, which produces RNA and ribosomes. Vacuoles and vesicles aid in many tasks of the

cell. An eukaryotic animal cell is an irreducibly complex structure comprised of many other irreducibly complex structures, in which thousands of parts work together to perform myriads of functions. The cell must support itself by producing and storing energy through a *very* complicated process. Each function of each organelle in a cell is vital to the cell's life. The complexity of the cell causes one to question the evolutionary belief that these amazing microorganisms developed by chance. The more logical explanation of the origin of the eukaryote is that God, in His infinite wisdom and intelligence, created the eukaryote to glorify Himself. (Wile and Durnell Exploring Creation 169-170, 172-173)

The infolding hypothesis of the formation of cells has many difficulties in explaining the origin of eukaryotic organelles. According to evolutionists, the “extinct ancestor of archaeobacteria and eubacteria developed the necessary biologic machinery to survive in diverse situations. There is no evidence for this transformation other than the interpretation of molecular studies extrapolated backwards for billions of years.” (Evolution Exposed 153) The premise of the infolding theory suggests that the plasma membrane of an “ancestral prokaryote” folded inward to envelop the DNA in a nuclear membrane with specific proteins. Internal membranes and organelles such as the endoplasmic reticulum slowly developed, forming a structured cell with irreducible complexity. This process supposedly happened over millions of years.

(Evolution Exposed 153-154) “Despite the fact that evolution can accommodate explanations of the usefulness of certain features, it cannot explain – with supporting evidence – how these features came into existence.” (Evolution Exposed 150) Royal Truman comments:

The chances that a hypothetical sequence of unguided events would lead to ever more complex structures, which will culminate in a cell complete with DNA which now could undergo Darwinian-type competition and selection is *not* better

than that such a cell should appear in one miraculous unguided jump. The individual steps must *all* occur, before the duplication apparatus and correction mechanisms can work. During the whole process, the intermediates can undergo countless undesirable processes, destroying any progress made towards our target. The chances that *every* step would occur, for even one cell, given the total time and material available makes this proposal implausible. (Truman Divining design)

There is no evidence that prokaryotes turned into eukaryotes through the inward folding of the plasma membrane. Molecules-to-man evolution requires the addition of material to the genetic code, most frequently through mutations. However, scientists have yet to find a mutation that adds information to the genetic code. Though some mutations can produce beneficial outcomes, they all cause the modification, and ultimately the loss, of information from the genetic code. Evolution is an unfocused process that has no goal because it cannot see millions of years into the future. It only works for the organism's immediate benefit. If mutations cannot add information to the genetic code, no matter how much time is allotted, how is it possible that the infolding of the plasma membrane produced internal membranes and structures? (Evolution Exposed, Chapters 3 and 6; War of the Worldviews, Chapter 3; and The New Answers Book, Chapter 22) The origin of prokaryotes and eukaryotes can be explained most easily in light of the Bible, that God created them according to their own kinds (Genesis 1).

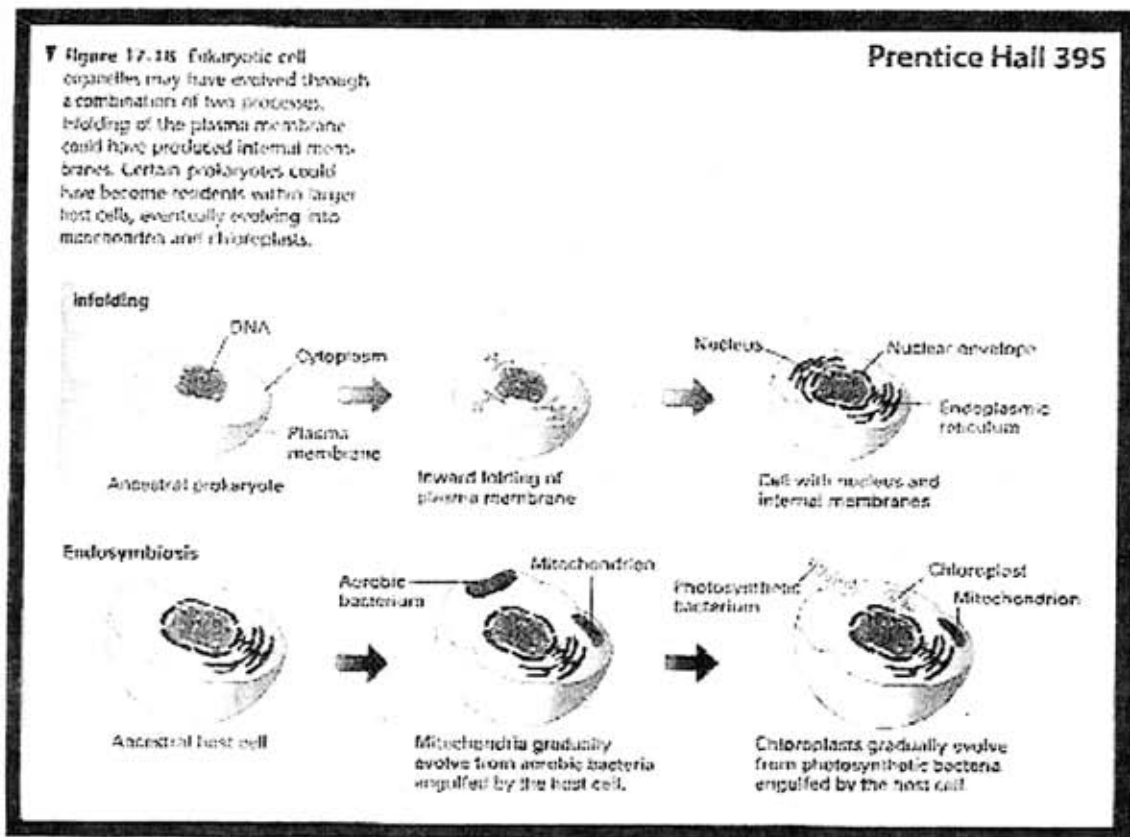


Fig. 3. The Infolding and Endosymbiont Hypotheses. *Evolution Exposed* (Hebron: Answers in Genesis, 2006) 154.

The endosymbiont hypothesis builds on the infolding hypothesis as it attempts to describe a process through which organelles might have been produced in an ancestral host cell. Through a process known as endocytosis, a host swallowed aerobic and photosynthetic bacteria but did not digest them. These engulfed bacteria gained the information to evolve into mitochondria and chloroplasts because the host cell and the ingested cells reproduced in synchronization with one another. Over the course of millions of years, the DNA of the host cell and the engulfed cells fused to provide long-lasting benefits for each cell. Evolutionists use molecular data to support this hypothesis, but there is no evidence that seems to confirm it. (*Evolution Exposed* 150-154) Because of their conflicting worldviews, creationists and evolutionists cannot agree on the origin

of cells. John Rennie, the editor of Scientific American, writes, "Simple organisms can fuel their rise toward complexity by consuming other forms of life and nonliving materials." (Sarfati 15 ways) In contrast, Dr. Don Batten remarks, "Problems abound with this scenario. For example, how could the engulfed cells reproduce in close synchronicity? ... If DNA were passed between the engulfed cell and the host cell, would not the host respond by degrading the foreign DNA, because it would detect it as a virus?" (Batten Did cells acquire organelles?) Roger Patterson states, "Evidence against the theory is ignored because there is no other accepted naturalistic explanation that accounts for the presence of these organelles." (Evolution Exposed 154)

The cell is an extremely complex and interwoven system in which all parts play a vital role as they work together. The first cell parts would not survive waiting for other parts to evolve because they would deteriorate from environmental causes, and natural selection would dispose of them. (Jerry R. Bergman) Natural selection and mutations cannot generate the information necessary to turn cells without organelles into cells with organelles. (Purdum "Non-evolution") There is also a lack of evidence that prokaryotes can ingest other cells, keep them alive, and interchange DNA with them. As Dr. Batten observes, "the pattern of similarity between eukaryote and prokaryote is not what would be expected from the endosymbiont hypothesis." (Batten Did cells acquire organelles?) There is no evidence that endosymbiosis could have produced organelles. Instead, the incredibly complex engineering of these organelles points to a Designer.

Many evolutionists realize the problems regarding their theories concerning the origin of cells. Professor Richard Lewontin, one of the world's leading evolutionary biologists, states:

We take the side of science *in spite* of the patent absurdity of some of its constructs, *in spite* of its failure to fulfill many of its extravagant promises of health and life, *in spite* of the tolerance of the scientific community for unsubstantiated just-so stories, because we have a prior commitment, a commitment to materialism. It is not that the methods and institutions of science somehow compel us to accept a material explanation of the phenomenal world, but, on the contrary, that we are forced by our *a priori* adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counter-intuitive, no matter how mystifying to the uninitiated. Moreover, that materialism is an absolute, for we cannot allow a Divine Foot in the door.” (Amazing admission)

Dr. Scott Todd, an immunologist, confesses, “Even if all the data point to an intelligent designer, such an hypothesis is excluded from science because it is not naturalistic.” (A designer is unscientific) The scientist Robert Jastrow says:

For the scientist who has lived by his faith in the power of reason, the story [of the quest for the answers about the origin of life and the universe] ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries.” (Jerry R. Bergman)

Evolutionary hypotheses cannot explain the incredible, irreducible complexity of prokaryotes and eukaryotes, which becomes clear when one realizes the amazing, creative power and design of God. Nobel laureate research molecular biologist E.C. Komfield testifies to the great glory of God:

While laboring among the intricacies and definitely minute particles in a laboratory, I frequently have been overwhelmed by a sense of the infinite wisdom of God ... one is rather amazed that a mechanism of such intricacy could ever function properly at all ... the simplest man-made mechanism requires a planner and a maker; how a mechanism ten times more involved and intricate can be conceived as self-constructed and self-developed is completely beyond me.”

(Jerry R. Bergman)

Even the simplest organisms, prokaryotes, are incredibly complex, and they point to a marvelously intelligent Designer. Whether it be the DNA or the ribosomes, each part of the prokaryote is crucial to the life of the cell. Eukaryotes, too, reflect the creativity and wonder of God. In both prokaryotes and eukaryotes, there are many irreducibly complex structures within these irreducibly complex cells. If just one part of any organelle were missing or one organelle's job were performed incorrectly, the cell might die. The infolding theory suggests that the plasma membrane of an ancestral prokaryote folded inward and enveloped the DNA in a membrane, causing the evolution of membranes and a few organelles. There are many problems with this hypothesis, especially since natural selection and mutations cannot produce new information. The other supposition, the endosymbiont hypothesis, proposes that an ancient host cell engulfed different types of prokaryotes, which then evolved into organelles. As with the infolding hypothesis, there is much evidence against this belief, which many evolutionists have recognized. God created prokaryotes and eukaryotes, each according to their kind. The Bible says, “In the beginning, God created the heavens and the earth.” (Genesis 1:1) “Simple” prokaryotes did not develop from nonliving chemicals that somehow arranged themselves into an ordered life form; neither did “more complex” eukaryotes evolve from bacteria. Prokaryotes and

eukaryotes did not evolve through purely naturalistic means: God created them to glorify Himself. The infolding and endosymbiont hypotheses cannot explain God's incredible design of irreducibly complex cells. As Revelation 4:11 says, "You are worthy, our Lord and God, to receive glory and honor and power, for You created all things, and by Your will they were created and have their being."

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