

Twilight of Darwinism

Twilight of Darwinism:

**An Information-Age Evaluation of
Unintelligent Evolution**

Archbishop Sean M. Walsh

**Eastern Catholic Church (Aramaic Rite)
Archdiocese of South America**

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Dedication

Dedicated to Emma Dextre Walsh, my wife since 1974. We have shared ministry together to family and others in North and South America, in Africa and Europe. She has been a source of inspiration and an anchor in strong faith in Christ over many decades. In addition to being home and family centered, a great wife, mom and grandmom, she is an adult education specialist who has led many small Bible Study groups from home, and most recently in Internet. And I am grateful for her encouragement and patience with me as I researched and wrote this book.

TWILIGHT OF DARWINISM:
AN INFORMATION-AGE EVALUATION OF
UNINTELLIGENT EVOLUTION

Introduction to the Reader

You may be wondering why, since we now passed the 160th anniversary of Darwin's publication of *The Origin of Species* in 1859, any churchman would still dare to fuss about this generally accepted evolutionary theory of science. After all, did not even Pope John Paul II issue in the name of the Roman Catholic Church not many years back, a belated public apology for its having coerced from Galileo Galilei a statement in which Galileo recanted his teaching that the earth circled around the sun? This was done because churchmen pointed out at the time that the Scriptures stated clearly that the sun circled around the earth. Pope John Paul II in 1996, while referring to the evolution/ creationism controversy, stated through a Vatican Advisory Panel on Science, that the church's role must be more akin to that advised by Galileo, "to tell men how to go to heaven; not how the heavens go."¹

Some years ago, Father Francis MacNutt caught my attention. Here was a Harvard graduate (Pre-Med.) who also holds a Doctorate in Theology saying that for him, as a young priest, it was easy to counsel people to go to psychiatrists for certain problems; the harder part was when those psychiatrists would refer the same persons back to him for his specialized pastoral assistance.²

Similarly, I have been obliged to reassess some of my positions concerning science and religion. For most of my life, I had been believing evolution

was an abundantly established fact, and that we churchmen had to catch up with the times and review the Scriptures accordingly. It was good for my humility to later learn from concerned “laymen,” who are brilliant scientists with earned doctorates, published books and articles in leading scientific publications, that my facile explanations for accepting evolution did not stand up to the latest development in science, much less the philosophy of science. In fact, it is not only the Catholic, Christian, Jewish or Muslim scientists who consider the theory of evolution to be conceptually and evidentially flawed—some very important atheist scientists, some of whom had been called the “high priests of evolution,” are proclaiming that the theory of evolution is “impossible.” Just to name a few,

- ✦ Dr. Paul Lemoine, France’s greatest 20th century scientist. He concluded that “Evolution is a sort of dogma in which the priests {i.e., high priests of evolution} no longer believe, but that they maintain for their people.”³
- ✦ Another was Dr. Karl R. Popper, who was called by some Nobel Laureates “the greatest philosopher of science who ever lived.” He stated that Darwinism was not only not a fact, or theory—it did not even rise to the level of a hypothesis, because it cannot be falsified. “I have come to the conclusion that Darwinism is not a testable scientific theory, but a metaphysical research programme and a possible framework for testable scientific theories.”⁴
- ✦ A more down-to-earth French scientist called evolution a “fairy tales for adults.”⁵
- ✦ More recently in 2005, celebrated evolutionist philosopher and author Anthony Flew, followed the recent scientific evidence where it is leading—to intelligent design.⁶
- ✦ Cambridge University’s Sir Fred Hoyle stated that statistically, the chances of one cell evolving were the same as a tornado passing through a junkyard and giving you a fully functional Boeing 747.⁷
- ✦ A MIT mathematician said there were so many great problems that before we could have any viable theory of evolution, there would

have to be the discovery and elucidation of entirely new natural laws: chemical, chemical-physical, and biological.⁸

I have come to understand that the caricature of opponents of evolution, depicting them as “bible-thumping backwoodsmen,” is both ludicrous and seriously misinformed. It is one thing to question a churchman when he “pounds his pulpit” to cover over the weaknesses of his argument when out of his depth in another area of expertise; it is another thing to question a respected, well-published holder of an earned D.Sc. or Ph.D. who is pointing out the specific failings of evolutionary teachings in his field of: biochemistry, physics, geology, paleontology, astronomy, cosmology, mathematical probabilities, or mind science. Even worse for the proponents of evolution, they are now faced with foundational objections in principle to their “fact of evolution” from a whole *Intelligent Design* Movement, spearheaded by a towering intellectual, Dr. Michael Dembski. Dr. Dembski holds an earned doctorate in Mathematics, in which he specializes in applications of math to communications theory, and another earned doctorate in Philosophy. The communication of coherent intelligence throughout systems, from the submicroscopic biochemical to the telescopic astronomical and cosmological levels, is a key to understanding the solution to this whole controversy.⁹

So why, you may still ask, should it matter to any churchman, or teacher of ethics, whether the abstract fields of science or philosophy of science rely upon one theory of origins of life, or another? The answer is that such notions are formative of one’s worldview (“*Weltanschauung*,” is the international German-based technical word for this overarching point of view through which all of reality is observed and explained), and there are very real consequences of worldviews, or “isms.” Together with the thought of Darwin, the thought of several other most influential 19th century thinkers, particularly Marx, Nietzsche and Freud, combined to support and serve as pillars to the philosophies of “naturalism,” or “secular humanism,” which were taken up by Mussolini, Hitler, *Apartheid’s* Verwoerd, Marx, Stalin, Mao Tse Dong and their minions, and America’s Margaret Higgins

Sanger. Their practical applications of these philosophies resulted in the calamitous 20th century, during which much more bloodshed, warfare and massacres—of hundreds of millions of civilians, mostly—took place than in all previous recorded history, including in all religious wars. This will also be addressed in this book.

Fortunately, by this time in history, the thought of Marx, Nietzsche and Freud have been subjected to very careful—sometimes even scathing—scrutiny and are no longer accepted as paradigmatic. This still leaves, however, the thought of Darwin and the Neo-Darwinists, which still seem to be legally granted “dictatorial powers,” as though they must be above any hint of scrutiny, in academia, the media and entertainment industries, government and elsewhere.

The purpose of this book is to show that the best modern scientific evidence is pointing in the direction opposite to that of evolution; that the applications of evolutionary “science” in such fields as education, science, law, philosophy—particularly ethics—and even in economics, art and literature, have been, and still are, calamitous.¹⁰ Furthermore, it is not that Darwinian thought is somehow being misrepresented or misconstrued when seen as foundational in this ghastly process; rather, these calamities are in fact no more than the logical conclusions and applications of Darwinism in its original or updated variants.¹¹ This too will be addressed in this book.

More often than not, wrong behavior is the result of wrong ideas. By pointing out why and where ideas are erroneous and showing a time-tested alternative that has manifestly produced the greatest freedoms, concepts of human dignity, and prosperity in all human history—this is, I would submit, a positive contribution and a path to return to sanity and rationality in our understanding of moral philosophy, worldview analysis and meaning in life. This has everything to do with my work as a churchman, and everything to do with your foundational search for truth and meaning in life.

It is the intent of this book to offer a review of the origins of Darwinian thought, its achievements and flaws, and the prognosis for the continuation

of Applied Darwinism as the philosophical keystone for the major worldview or “school of thought” into the future. Having passed in 2009 the sesquicentennial (150th) anniversary of the publication of *The Origins of Species*, we should pay careful attention to the lessons learned from the history of science and philosophy, as well as from the more tangible lessons of world history. This type of evaluation is needed to judge the suitability and adequacy of this school of thought, both in terms of its explanatory power in science and philosophy, and also in terms of its known historic consequences in the lives of individuals and nations.

TWILIGHT OF DARWINISM

Part I

Chapter 1: ***The Ecstasy: The Centennial Celebration***

Darwin, the Man.

Historians tell us that Charles Darwin (1809-1882) was a somewhat retiring, private person. His father was a medical doctor and Charles thought first to follow in his profession. He entered university at Edinburgh to study medicine. However, once having witnessed surgery performed without anesthesia (still in its quite primitive stages during his medical studies), he reconsidered and went off instead to Cambridge University to study theology. While in Cambridge, he befriended professor of botany, J..S. Henslow, a naturalist who, like his own grandfather, philosopher Erasmus Darwin, had a strong influence on him. Therefore, after Cambridge, Charles, who had decided against becoming an Anglican clergyman, went off in a sailing ship, *HMS Beagle*, where he served during a five-year voyage (1831-1836) in the southern hemisphere as the ship's naturalist. He had the opportunity to do a number of naturalist studies in the Pacific coast of South America and in the Galapagos Islands.

Upon his return to Britain, his main professional undertaking was research and writing. He lived for the next forty years in the secluded village of Down, in Kent. Although he apparently entertained intellectual guests in his home, he was not a very public person. Some believe he may have suffered from panic disorder.¹² He had suffered the loss of his own mother when he was eight years old and later, as an adult, he grieved terribly when his ten-year-old daughter died of an illness.

His writings include: *The Origins of Species*, *The Preservation of Favored Races in the Struggle for Life*; *The Descent of Man, and Selection in Relation to Sex*, *On Natural Selection*, *Recollections of My Mind and Character* (also titled *Autobiography*), and *Diary of the Voyage of the H.M.S. Beagle*. His grandson, Francis, has also published his *Collected Letters*, some of which are quite interesting to modern day scholars.

Darwin's Thesis.

His books would change human understanding dramatically—some have even said, “forever.” His first published work, *The Origins of Species*, only appeared in 1859 when he was fifty years old, which was hurriedly published in the same year as a book with similar conclusions was about to be published by Alfred Russell Wallace.

Darwin developed his theory of unlimited change from observations of limited change in various species, extrapolating them back into the extremely distant past—which, of course, no scientist has ever observed. Nobody has ever witnessed evolution occurring (referring here to “macro-evolution,” of course, as opposed to “micro-evolution” which no modern scientist, especially not any Creationist scientist, disagrees with). This was of course a rather bold speculation, an extrapolation from contemporary “operational sciences” back into the “historic science” of origins.¹³

While Charles Darwin confined his writings to the Origins of biological species and did not extrapolate to the origins of life itself, the implication of his thinking quickly led to that conclusion. It is agreed by many historians that Darwin, at the time of the publication of *the Origins*, clearly did not believe in a Creator, God.

Darwinism is naturalism. It begins with the fundamental assumption that the forces of nature alone are adequate to explain everything that exists. In the beginning was nature, with its unique ability to support all of life and act through Darwinian mechanisms to evolve ever more complex

life-forms, even finally human beings having the marvels of consciousness and intelligence.¹⁴

Although these ideas of Charles Darwin were not entirely original—his own grandfather Erasmus Darwin was among several who had already formulated some views on this topic—Darwin was evidently aware of their importance and knew that the publication of his views would meet with determined resistance from the orthodox scientific and religious communities. He needed some allies.

Darwin's Ally.

Darwin had a friend, Thomas Huxley, who had also gone to sea (on board the *H.M.S. Rattlesnake*) to do a naturalist expedition. He shared many of Darwin's views and, since he was more of a "public person," he was pleased to engage in the ensuing heated public debates over the teachings of Darwin. Huxley apparently was clever and particularly skillful in rhetoric and debate, to the regret of some more orthodox scientists and clergymen whom he bettered in well-publicized public debates. Huxley was a champion of evolution and a close friend of Darwin, but he did not advocate Darwin's co-discovery of Natural Selection. He was a paleontologist and physiologist and thus he was counting on historical paleontological, homological and archetypal evidence. He was less concerned than Darwin was with the mechanism by which evolution occurred. Like Darwin, he did not believe in God. It was Huxley who introduced the word "agnostic" into common English usage. At that time in history, apparently, the word "atheist" was used by many to mean an unprincipled rebel.

The Centennial.

A century later, in 1959, a weeklong Centennial Celebration was organized at the Museum of Natural History in Chicago to fete the publication of *The Origins*. By this time, Darwinism was not just a theory of biology but also, as Phillip E. Johnson states, "[it] was the most important element in a religion of scientific naturalism, with its own ethical agenda and plan for

salvation through social and genetic engineering.” Sir Julian Huxley, (author and first Director General of the United Nations Educational, Scientific and Cultural Organization [UNESCO], and brother of Aldous Huxley [author of *Brave New World* and various other books], and additionally a grandson of the above-mentioned Thomas Huxley), was a featured speaker and, as P.E. Johnson reports, his triumphalism on this occasion was unrestrained. Huxley stated:

Future historians will perhaps take this Centennial Weeks as epitomizing an important critical period in the history of this earth of ours—the period when the process of evolution, in the person of inquiring man, began to be truly conscious of itself... This is one of the first public occasions on which it has been frankly faced that all aspects of reality are subject to evolution, from atoms and stars to fish and flowers, from fish and flowers to human societies and values—indeed, that all reality is a single process of evolution...

In the evolutionary pattern of thought there is no longer either need or room for the supernatural. The earth was not created, it evolved. So did all the animals and plants that inhabit it, including our human selves, mind and souls as well as brain and body. So did religion...

Finally, the evolutionary vision is enabling us to discern, however incompletely, the lineaments of the new religion that we can be sure will arise to serve the needs of the coming era.¹⁵

It was a proud moment for Sir Julian Huxley to revel in the success of a family multi-generational effort—and cause. From modest beginnings, the Darwinist movement, spearheaded by Thomas Huxley and a relatively small group of like-minded thinkers, had an impact on not only natural sciences, but also was formative in the establishment of Darwinism as the basis of the established and dominant Modernist Worldview on a worldwide basis.

Their triumphalism was a heady brew, but understandable in view of the notable achievements. Even within the several immediately preceding years, and well as a century earlier, science and the philosophy of science had taken them to entirely new thresholds of knowledge, some of which are noted here below.

Artificial Production of the Building Blocks of Life.

There had been speculation about prebiological evolution in Darwin's day. In fact, Darwin's "German Bulldog," Dr. Ernst Haeckel, had a leadership role in this effort. Darwin wrote about this speculation in an 1871 letter:

It is often said that all the conditions for the first production of a living organism are now present, which could ever have been present. But if (and oh!, what a big if!) we could conceive in some warm little pond, with all sorts of ammonia and phosphoric salts, lights, heat, electricity, etc., present, that a protein compound was chemically formed ready to undergo still more complex changes, at the present day such matter would be instantly devoured or absorbed, which would not have been the case before living creatures were formed.¹⁶

Closer to the Centennial of the publications of *The Origins*, The laboratory of the University of Chicago been the venue of the 1953 well-publicized experiment in which (the then) graduate student Stanley Miller artificially produced the building blocks of life. He artificially reproduced what was apparently the atmosphere of the primitive earth, in a scientifically controlled environment, and then shot electric sparks through it to simulate lightning. By so doing, Miller managed to produce a red substance containing several amino acids. Mankind was now apparently able to reproduce and explain the origins, the very building blocks, of life. He had synthesized the building blocks of proteins—amino acids—and inspired evolutionary biologists to enter into a whole new realm of study. The implication of this experiment was that Darwin's cosmological speculation was now on the verge of being proven by taking scientists into the arena of producing prebiotic cells from lifeless chemicals.¹⁷

A variety of other scientists in astronomy, physics and geology were also working away at the development of their own theories to explain the origin and development of the universe. According to Dr. Thomas Woodward,

As Huxley said, it promised to be just a matter of time and effort to fill in the details of the evolution of all human reality as well: consciousness, reason and the entire range of social and cultural phenomena—including morality and religion. If religion is nothing more than a fundamental psychosocial impulse of human nature, then why not take charge of that part of humanity and shape it (along with everything else) in the light of universal evolution? ... Evolution had ascended as the new universal *metanarrative*, and the scientific mindset that had given birth to it seemed to possess the key to unlock any question humanity could ever pose about the observed universe...Scientists assured the public that their account of our origins was based on scientific objectivity, not on subjective belief.¹⁸

Discovery of “The Language of Life.”

Biochemist and spiritual skeptic, Francis Crick, along with James Watson, co-discovered in 1953 the “secret of life” when he discovered the chemical and molecular structure of DNA, where the instructions for building proteins were encoded, for which he and a colleague shared the Nobel prize. He and James D. Watson discovered the now-famous double helix of deoxyribonucleic acid (DNA), where the “language of life” is stored.¹⁹ This made it seem also that the advance of evolutionary science was able to identify “mutations” (instead of Darwin’s label of “variations”) as being the true raw material of evolution.²⁰

Genetic Studies Show Common Heritage.

The Darwinian theory of common descent of man and other animals, the anthropoids, was apparently supported by genetic studies, which show humans and apes share some 98 or 99% of their genes.²¹

Anatomy shows common heritage: It is also implied that we have a common universal ancestry, by the fact that there are similar bone structures in a bat's wing, a porpoise's flipper, a horse's leg and a human hand. Although these limbs have been adapted for different uses, their underlying similarity—or homology—is perhaps additional proof that we all share a common ancestor. Paleontologists and anatomical scholars point this out to us.²²

“Missing Link” found in Darwin’s Day.

Going back further in time, right to Darwin’s era, shortly after the publication of *The Origin of Species*, scientists found the *Archaeopteryx* (Greek for “ancient wing”) fossil, a “missing link” animal dating back an estimated 150 million year, which has the wings, feathers and wishbone of a bird, but with a lizard-like tail and claws on its wings? It was hailed as the missing link between reptiles and modern birds and, to this day, still figures in textbooks as a “Missing link.” Millions of fossil discoveries have been dug up and classified and stored in museums around the world.²³

Comparative Embryology Implies Common Ancestry.

Another contemporary of Darwin’s, German biologist Ernst Haeckel, devised a comparative study of embryos that appeared to have rather compellingly argued for common ancestry of man with other animal life. He had juxtaposed drawings of embryos of: fish, salamander, tortoise, chick, hog, calf, rabbit and human. His graphic juxtaposed drawings all showed extraordinary similarity in their early stages of development. This comparative drawing is still featured in current textbooks as an “icon of evolution.”²⁴

The Paleontological Record of “Missing Links.”

And there were also the well-publicized paleontological finds of “missing links” that fill the missing gaps in the history of human evolution. There were: *Pittdown man*, *Java man*, *Peking man*, *Nebraska man*, *Neanderthal man*, *Ramapithecus*, *Australopithecus africanus*, *Lucy*, and other *Homo habilis* and

Homo erectus fossils. Are these not extraordinary examples of fossil finds that scientifically prove the existence of “missing links” or, at the very least, serve as evidentiary indicators of “missing links” in the evolution of homo sapiens from lower animal forms? In 2006/07, Reuters reported that an international team of scientists discovered 4.1-million-year-old fossils in Eastern Ethiopia.

The teeth and bones belong to a primitive species of *Australopithecus* known as *As. Anamensis*, an ape-man creature that walked on two legs. The *Australopithecus* genus is thought to be an ancestor of modern humans. Seven separate species have been named. *Au. Anamensis* is the most primitive... This new discovery closes the gap between the fully blown *Australopithecines* and earlier forms we call *Ardipithecus*, said Tim White, a leader of the team from the University of California, Berkeley. We now know where *Australopithecus* came from before 4 million years ago.”²⁵

Radiometric Dating Supports Evolution.

It is also noteworthy that science claims to have benefited from radioisotope dating methods, whereby science can accurately date objects going back to millions and billions of years. Methods to determine the “age” of radiometric “ages” now include: Six potassium-argon models to judge ages from 10,000 years to 117 Ma (millions of years); Five rubidium-strontium for ages from 1,270 to 1,390 Ma; Rubidium-strontium isochron for ages from 340 Ma; and Lead-lead isochron for ages back to 2,600 Ma.²⁶

Evolution is Happening before our Eyes.

Some evolutionary scientists state they can see evolution happening all around them, right before their eyes. One example of this was reported on June 3, 2006, by neurobiologist Matt Arnegard of Cornell University, who notes that electronic fish with the same DNA emitting distinctly different signals. They are found in the Ivindo River in Gabon. While the fish can apparently understand each others’ warning signals, they seem to only

choose to mate with other fish having the same signature waveform as their own." Dr. Arnegard say, "We think we are seeing evolution in action."²⁷

Cosmology and Astronomy Favor Evolution.

Furthermore, by the time of the 1959 centennial, the Soviets had already sent a man into space, in orbit around the world. Modern science had moved man to new thresholds even in outer space, from whence he could get a better view of the universe. The views of astronomers and cosmologists were frequently non-biblical. However, many scientists came to the conclusion that there was, surprisingly and perhaps a bit disappointingly at first for materialist philosophers and scientists, a beginning of the universe. This had to be accepted in light of Einstein's Theory of General Relativity and also the Second Laws of Thermodynamics), and it was clear to many scientists that the "Big Bang" reveals how God was inconsequential in the creation process and indicates billions of years since earth began.²⁸

The History of Philosophy of Science Shows that True Scientists Must Use Naturalistic Methodology.

Going back in European history, to the seventeenth and eighteenth centuries at least, some prominent philosophers like Spinoza, Voltaire and other enlightenment thinkers such as John Locke, Thomas Hobbes and Jeremy Bentham in England, Jean-Jacques Rousseau in France, and others, argued *inter alia* that, to properly study natural science, one had to discard any supernaturally revealed data, which are outside of time and space dimensions. Otherwise, one was not studying the data in the light of natural reason alone, but rather, using "supernatural revelation" to stifle true scientific investigation which must be based on the Socratic method of following the facts, "wherever the evidence leads." To invoke the Holy Scriptures was to use what is now known as a "God of the Gaps" argument to end all enquiry, thus serving as an intellectual straitjacket to inhibit legitimate scientific thought and discovery.

The “modern” explanation for some scientists had evolved to the point of declaring that only science is rational; only science achieves and stands as truth. Everything else is mere belief and opinion. If something cannot be quantified or tested by the scientific method, it cannot be true or rational. Harvard geneticist Richard Lewontin went so far as to claim science is ‘the only begetter of truth.’²⁹ Following a modernistic dualistic way of reasoning, science deals with “hard facts;” while the realm of religion is concerned with “soft” matters of moral meaning and value. “You have your faith; I have my facts,” goes the humanist argument. If religion works for you, fine; it may actually provide you with a sense of comfort in times of trial. If not, you can navigate in the real facts of science in the empirical universe. It is understood from this that Judeo-Christian teachings and beliefs are now relegated to the same back shelves of libraries as those of other ancient myths and fairy tales.

During the enlightenment some prominent thinkers remained firm believers in Christianity. But at the other extreme, thinkers like Voltaire were openly skeptics. In the middle, some were Deists. Deism held that God created the universe but then, similar to a man that winds up a clock and then lets it run by itself, God then left it to man to run the universe while he hid somewhere behind a star.

Deism was due to the method of reason being applied to religion itself. The product of a search for a natural-rational religion was deism, which, although never an organized culture or movement, conflicted with Christianity, especially in England and France. For the deist, very few religious truths sufficed, and they were truths felt to be manifest to all rational beings. The existence of one God, often conceived of as an architect or mechanic, the existence of a system of rewards and punishments administered by that God, and the obligation of men to virtue and piety, was the sum of their theology. Beyond the scope of natural religion of the deists lay far more radical products of “reason” applied to religion: skepticism, atheism and materialism.³⁰

The Higher Authority of Science.

With the advance of modern “science” into the 19th century, which seemed to show the intrinsic value of true empirically arrived at facts as opposed to mythical, magical or supernatural kinds of reasoning, religious writings such as the Judeo-Christian Scriptures were now being subjected to the purportedly dispassionate scrutiny of modern science. Instead of referring to the Holy Scriptures as the final authority, the Scriptures were now being subjected to the higher authority of such modern facts and sciences as: archaeology, geopaleontology, and secular histories.

Higher Criticism.

This was typified by the German School of “Higher Criticism,” of the Bible, whose principal spokesman was Lutheran Pastor Rudolph Bultmann (1884-1976). While the 16th century German Reformer, Martin Luther, had insisted on *Scriptura Sola* (the Scriptures alone, rather than the hierarchical Roman Catholic interpretations [*magisterium*] of what they thought the scriptures said), this new German school of thought was submitting the Scriptures to the authority of modern science. Christianity itself had to be explained as a product of evolving religious ideas and customs. It imposed an evolutionary schema onto the Bible, a sequence progressing from animism to totemism, to polytheism, and finally to monotheism.

Bultmann’s intended contribution was to “demythologize” the New Testament, meaning to interpret it according to the concepts of Existentialist philosophy, viewing it as a document expressed in mythical terms. His school of thought raised questions, *inter alia*, about the resurrection of Jesus, the most important teaching of the Christian faith. St Paul tells us that, “If Christ is not risen, your faith is in vain...” (1 Corinthians 15:14). This Higher Criticism line of reasoning is retained by a number of “liberal Christian Churches” to this day.³¹

An Evolving God.

Evolution is, for many scientists, more than a theory; they hold that the preponderance of evidence implies that it is a fact. Therefore, the question arises, for pragmatist thinkers among others—“What kind of God is compatible with evolution?” One influential pragmatist was Charles Sanders Pierce, who had made significant contributions to logic and probability theory. He felt strongly about religion but proposed a form of “panpsychism,” which means that everything in the universe has a mind or consciousness. “He envisioned the entire cosmos evolving toward Mind, or the Absolute, or God, in a teleological process he called evolutionary love.”³² Another American pragmatist who held similar views was William James. He also taught there was a finite god, who is neither omnipotent nor omniscient. He came to see God as “a cosmic consciousness, a pooling or weaving together of all individual consciousness.”³³

In the field of theology itself, there arose what is known as Process Theology, which teaches that God and the world are both in a process of constant change and evolution. God is a divine spirit evolving in and with the world, the soul of the world, the evolving cosmic life of which our lives are a part. This is not exactly pantheism (all is God) but rather *panentheism* (God is in all), where the physical world is a concrete emanation of God’s own essence. Process theology holds that as we make the choices that shape our lives and experiences, we also shape God and His experiences, since our lives give concrete form to the divine life. In short, we are not only co-creators with God, but we are also co-creators of God. When we die, the life we have lived merely becomes a past stage in God’s own ongoing life, while we as individuals cease to exist. There is no afterlife.³⁴

Process theology places God within the evolutionary context and holds that God is limited, not knowing in advance what is going to happen (not omniscient) nor does he have the power to prevent evil from happening (not omnipotent). He simply evolves along with the world over the course of history.³⁵

It is apparent from the findings of surveys done in the USA in recent years that many persons in the United States would tend to agree with some mitigated form of evolution, holding a “theistic evolutionary” position. Their position seems to be bolstered by an October 1996 statement from the (then) Pope John Paul II, through the Pontifical Academy of Science, “supporting the cogency of several theories of evolution, while criticizing attempts to posit the naturalistic evolution of the human spirit.”³⁶ The intention of this pronouncement was evidently to make it clear that it is not the church’s role to decide on strictly scientific matters which are metaphysically neutral, while still holding that the Church does have the obligation to speak out on matters concerning “total Truth” and objective morality. In view of criticisms of the Roman Catholic Church for its earlier censure of Galileo and suspicion of Copernicus, the Church understandably wanted to allow ample room for scientists to speculate in their fields with complete academic freedom, while maintaining that there was still a role for philosophy and theology to play in arriving at total truth about mankind and the universe.

The position of theistic evolution, however, has raised numerous objections from naturalistic scientists who are evolutionists. To exemplify, the prestigious evolutionary biologist and historian, Dr. William Provine of Cornell University said: “If Darwinism is true, there are five inescapable conclusions:

- There is no evidence for God.
- there is no life after death.
- there is no absolute foundation for right and wrong.
- there is no ultimate meaning for life, and
- people don’t really have free will.”³⁷

Evolution’s Place in Education.

In the United States, John Dewey’s influence is of primordial importance in the field of education and educational methodology. He was born in 1859, the year in which Darwin published *The Origins*, and had been raised in

an evangelical home. However, in college, he abandoned his earlier beliefs. He took ideas from Darwin and Hegel and developed his notion of an imminent god embodied in matter, similar to Process Theology. He came to see salvation as social process. Naturalism became his religion. He wrote about this in his book titled *A Common Faith*, in which he urged his readers to cultivate a “religious” devotion to social ideals. This was a form of religion consistent with his belief that humans were merely biological organisms seeking to control the environment through scientific inquiry.³⁸

In his educational philosophy, he recast intellectual inquiry as a form of mental evolution and said it should proceed on the same pattern as biological evolution: by posing problems and then letting students construct their own answers based on what works best. Teachers are thus to see themselves not as instructors but “facilitators” guiding students as they try out various pragmatic strategies to discover what works for them.³⁹

This kind of pragmatic and democratic education of course has applicability in the moral sphere also. Values are also relativistic. After all, what works for me may not work for you. In fact, it might not even work for me all the time. Thus, pragmatism inevitably leads to a pluralism of beliefs, all of them transient and none of them eternally or universally true. All values are treated as equally valid, and students simply clarify what they personally value most. Teachers are not to be directive, but rather to coach students in a process of weighing alternatives and making up their own mind. No one can be sure that our values are right for other persons. The underlying assumption of this approach is philosophical naturalism. This approach does not acknowledge any transcendent standard; thus, the only standard is whatever the individual himself values. Dewey argued that we all experience things as good or bad and, since science is supposed to be based on experience, moral enquiry must begin by analyzing our experience. We first clarify what we in fact value, then weigh various courses of action to decide which will lead most reliably to consequences that match our values.⁴⁰

Truth itself, which had been defined during millennia as the adherence of our ideas to objective reality was now, as a consequence of Darwinian

epistemology (epistemology is the philosophy of the nature of knowledge), viewed as a social construction, a product of social forces. Just as we are merely organisms adapting to our environment, so too the final test of an idea is whether it works. “To the constructivist, concepts, models, theories and so on are viable if they prove adequate in the contexts in which they were created.”⁴¹

There is also in the field of education a movement called *constructivist* education. This holds that if knowledge is a social construction, as Dewey suggested, then the goal of education should be to teach students how to construct their own knowledge. “Constructivism does not assume the presence of an outside objective reality that is revealed to the learner, but rather that learners actively construct their own reality.”⁴² In brief, the students’ ideas are not objectively right or wrong, but rather, the students must clarify and articulate their own understandings.

Evolution’s Role in the Study of the Mind and Psychology.

If the mind is a product of Darwinian evolution, then ideas and words are merely tools for controlling the environment, including other people. One neo-pragmatist is Dr. Richard Rorty. Like Dewey, Rorty’s view is that “truth is made, not found.” It is not objective, waiting to be discovered. Rorty bases his philosophy ultimately on Darwinian evolution. He once wrote that “keeping faith with Darwin” means all our beliefs and convictions are as much products of chance as are tectonic plates and mutated viruses.” For Rorty, ideas arise by random variation in the brain, just like Darwin’s random variations in nature. Ideas that have stood the test of time do so, not because they reflect reality, but rather because they help people organize their human experience and get ahead in the struggle for existence. Thus, the human species is not oriented “toward truth,” but only toward its own increased prosperity. The very notion of Truth, he says, is “un-Darwinian.”⁴³

Psychology advanced since the latter part of the 19th century, and it is the systematic study of human and animal behavior. Sigmund Freud (1865-1939) is perhaps the most celebrated pioneer in the field of psychiatry and

psychoanalysis. He developed the study of the unconscious mind, using the methods of free association and interpretation of dreams, and formulated the concepts of *id*, *ego*, and *superego*. While Freud was aware of Darwin, he was more influenced by the earlier evolutionist, Jean Baptiste de Lamarck (1744-1829), whose ideas of evolution are now discredited by most scientists. In any case, Sigmund Freud too was a naturalist and held religion in disrepute, as is noted in his book on religion titled *The Future of an Illusion*.

Darwinism in Economics.

Herbert Spencer was a disciple of Charles Darwin. He invented the phrase “survival of the fittest,” a phrase that would later be used by Darwin himself. He saw the applicability of Darwinism to human society and business. Spencer noted that the fittest not only survived; they prospered. This was so because the criterion of desert was genetic, rather than moral. Spencer and his colleagues came to be known as *Social Darwinists*. According to John W. Whitehead, in “Darwin Descending,” “Science by the later 1800s had become the new religion, with Darwinism being its central tenet...J.D. Rockefeller, who used Darwinian thought to justify industrial monopoly without restraint, said “The growth of large business is merely a survival of the fittest.’ And Andrew Carnegie expressed his conversion to Darwinism by saying, ‘Light came in as a flood and all was clear. Not only had I got rid of theology and the supernatural, but I found the truth of evolution.’”⁴⁴ Their large corporations in oil and steel production would be followed by other large corporations in these same areas, as well as in mining, energy, agriculture, automobile production, supermarkets and megastore chains, and many others.

These are some sample reasons why Sir Julian Huxley and Darwinian thinkers were so very pleased and triumphant on the occasion of the Centennial Celebration in Chicago in 1959. It did seem indeed like a “brave new world” had finally arrived and had freed men and women to follow pure natural reason, become masters of their own destiny and create their future without regard for mythical constraints of religious doctrines, sects or other intellectual straitjackets.

On a Roll but, Can It Last?

But was this a correct assessment, which was being celebrated during that momentous centennial event? In retrospect, it might now seem that the triumphalism of that Chicago Centennial celebration of *The Origins* was perhaps similar to that of the London celebration of Queen Victoria's birthday in the late 19th century, in which soldiers from the many colonies of the British Empire proudly paraded in their various colorful uniforms. That had been an emotionally charged triumphant pageant in the apogee of Empire. However, as onlooker and reporter Rudyard Kipling deeply suspected, the Empire's multinational armies had started to tramp, tramp, tramp their way onward towards oblivion. The Empire's triumphalism was to be short-lived: in view of changing events, it could not last.

In our next chapter, we will look at some of the "limits of scientific inquiry," and how science itself has changed, not only since the days of Charles Darwin and Thomas Huxley, but more importantly, considerably since the 1959 Centennial Celebration, to such an extent that a serious review and scrutiny of Darwinism and its explanatory power and position as the main support of the dominant secular humanistic worldview in academia, the press, Hollywood and the Federal Judicial System, is very much in order.

Chapter 2: *The Limits of Science*

You have heard it said, “You have your faith; I have my facts.” This statement is frequently made to theists and creation scientists by Darwinian or neo-Darwinian materialistic scientists, as though believers in God and creation were not quite up to any modern and scientific standard of knowledge.

According to many modern educators, the universe is a meaningless chain of material causes. This is widely taught in universities and secondary schools, as though it were foundational for all other truth claims. A series of legal decisions in several States of the United States over the past few decades has mandated that materialistic Evolutionary Naturalism be taught exclusively as the only correct method of scientific learning.

The four most influential thinkers who helped to shape the 20th century mind were Darwin, Marx, Freud and Nietzsche. The latter’s proclamation of the Death of God was the foundational event ushering in the Age of Modernism.⁴⁵

In the most widely used college evolutionary biology textbook, author Douglas Futuyma informs biology majors about what made Darwin so important to the modernist metaphysical program:

By coupling indirect, purposeless variation to the blind, uncaring process of natural selection, Darwin made theological or spiritual explanations of the life processes superfluous. Together with Marx’s

materialistic theory of history and society and Freud's attribution of human behavior to influences over which we have little control, Darwin's theory of evolution was a crucial plank in the platform of mechanism and materialism—of much of science, in short—that has since been the stage of most Western thought."⁴⁶

Futuyma's thought resonates with the thinking of biologist Sir Julian Huxley, who strove throughout his lifetime to integrate biological evolution and the Humanist worldview. Huxley stated:

I use the word "humanist" to mean someone who believes that man is just as much a natural phenomenon as an animal or a plant, that his body, his mind and his soul were not supernaturally created but are all products of evolution, and that he is not under the control or guidance of any supernatural Being or beings but has to rely on himself and his own powers.⁴⁷

The influence of Darwinism, along with those of Nietzscheism, Marxism and Freudianism, purportedly intended to liberate mankind, created a revolutionized worldview. Philosopher Daniel Dennett stated, "Darwinism is a universal acid that eats through just about every traditional concept and leaves in its wake a revolutionized worldview."⁴⁸ However, it is debatable whether this liberation amounted to "freedom for," or "freedom from" discovering truth. The consequences have been well described by British atheist and philosopher of science Bertrand Russell:

That man is the product of causes which had no prevision of the end they were achieving; that his origin, his growth, his hopes and fears, his loves and beliefs are but the outcome of accidental collocations of atoms; that no fire, no heroism, no intensity of thought and feeling, can preserve an individual life beyond the grasp beyond the grave; that all the labors of the ages, all the devotion, all the inspiration, all the noonday brightness of human genius are destined to extinction...that the whole temple of man's achievements must inevitably be buried—all these things, if not

quite beyond dispute, are yet so nearly certain, that no philosophy which rejects them can hope to stand. Only within the scaffolding of these truths, only on the firm foundation of unyielding despair can the soul's habitation henceforth be safely built.⁴⁹

For the secular humanist, or orthodox evolutionary scientist, atheistic evolution is not one option among several valid ones, but rather the only option compatible with their worldview.⁵⁰ The outspoken evolutionary scientist from Cornell University, Dr. William Provine, was once asked whether there is “an intellectually honest Christian evolutionist position... or do we simply have to check our brains at the church house door,” and Provine’s answer was right to the point: “You indeed have to check your brains.”⁵¹ Meyer pointed out that Evolutionary biologist George Gaylord Simpson observed that Darwinism teaches “man is the result of a purposeless and natural process that did not have him in mind.”⁵² However, as Meyers says, “To say that God guides an inherently unguided natural process, or that God designed a natural mechanism as a substitute for his design, is clearly contradictory.”⁵³ Nancy Pearcey claims that Darwin himself recognized that “...the presence of an omnipotent deity would actually undermine his theory. ‘If we admit God into the process, then God would ensure that only the right variations occurred...and natural selection would be superfluous.’”⁵⁴ This in part explains the determined insistence of evolutionary scientists to not show any openness to the idea of intelligent design in the universe, much less the concept of a personal God creator as is presented in the Bible.

By the end of the Second World War, however, Nietzsche’s thought had been already largely discredited, leaving the most influential modern Western teachings of Karl Marx, Charles Darwin and Sigmund Freud to dominate the horizon. Along with Nietzsche, over the period 1850-1920, they transformed people’s way of looking at reality. The common strain in their teachings was reductionism, which claims that realities long thought of as in a “higher” realm of existence, could be explained by the lower.

Marx reduced all social reality to class conflict, based on economic self-interest. While Marx announced that religion was the opiate of the people, he also reduced all human interests, including philosophy, justice, love, arts, etc., to economic interest.

Darwin highlighted the need to see that humanity must be understood biologically, as the latest evolution of the animals that had been able to develop skills to dominate nature. His conclusion was that humans have no spiritual nature, and that there is no need for a creation myth and thus, God no longer had a job description.

Freud's teachings disagreed with conventional wisdom that reason is what separates humans from other animals and that, through reason; humans can arrive at objective truth. Freud argued that, far from being free agents, persons are governed by irrational drives rooted in sexuality. His book about religion was titled *The Future of an Illusion*. (As an interesting anecdote, Freud's own analyst, Carl Gustav Jung, wrote a contrary opinion in response, titled, *The Illusion of a Future*).

By the end of the 20th century, two of these three dominant modernist schools of thoughts were being systematically debunked. Freudian thinkers met with strenuous opposition, *inter alia*, from feminists and homosexuals, who felt offended by his thinking. Earlier, Jung, the founder of Analytical Psychiatry, took exception to a number of Freud's teachings, and Viktor Frankl, the founder of the Third Viennese School of Psychiatry (Logotherapy), highlighted some of the fundamental shortcomings in Freudian thought.

Marxian thought was never found to be universally persuasive in democratic and educated societies and when the new French philosophers (of 1968 Student Revolt fame) gave up in the mid-1970s on Communism as "a God that Failed," and as "invariably the road to the concentration camps," this seems to have reverberated throughout much of the world, including the former Soviet Empire. Belated admissions by most communist regimes that their economic philosophy was fatally flawed in principle, contributed

to the massive and much-welcomed collapse of the Soviet Union in 1989. As evidentiary historical documents from the former Soviet Union were published in the West, many western intellectuals, particularly French defenders of Socialism, were embarrassed that implementation of this philosophy, with its deification of the State, resulting in the repressive measures it dictated, resulted in mass murders of hundreds of millions in the former Soviet Union, China and elsewhere. Literary critics, even in the United States, including former convinced Marxists and Freudians, came to the place where they repudiated both schools of thought.

Adherents to Darwinism (including neo-Darwinian variations on the same theme) are still determinedly insisting on the same line of thought, but it has been coming under careful scrutiny by not only philosophers of science but also by a minority of very competent scientists and mathematicians—including some of the former so-called “high priests of evolution,” who insist that their voiced objections ought to be responded to in the same dispassionate way in which they are presented.

One of these “high priests” was French Dr. Paul Lemoine, editor of *L'Encycopédie Française*, and author of its tome on Evolution, who was quoted as having said that Evolution was an impossibility and, quoting another French intellectual (Jean Rostand), “A fairy tale for adults.”

Another was Sir Karl R. Popper, who was acclaimed by some as the greatest philosopher of science before his death in 1994. Popper came to the point of saying that not only is evolution not a fact, but it is not even a theory. Not only is it not a theory, it is not even a scientific hypothesis because it cannot be falsified. It is at best, said Popper, a “metaphysical research program.”⁵⁵ Dr. Popper wrote against logical positivism because it did not take into account the need for a scientific theory to be open to “falsifiability,” the possibility of at least one exception to the proposed hypothesis that would stand in the way of its eventual recognition as a scientific law. Due to impassioned pleas from evolutionists, Dr. Popper later wrote to defend himself in the 1980s, stating, in effect, that although he personally wished that Evolution

would be able to be proven true one day, the evidence did not yet lead in that direction.⁵⁶

Still another was Anthony Flew, the son of a Methodist minister who decided against God at age 15 and went on to become a famous philosopher of science and evolutionary writer. His most recent conclusion, in 2005 at age 81, was that “the most impressive arguments for God’s existence are those that are supported by recent scientific discoveries...the findings of more than fifty years of DNA research have provided materials for a new and enormously powerful argument to design.”⁵⁷ It must be noted that Flew’s conversion was not to Christianity, but to theism. However, it is important to our study because his change was taken in view of the shortcomings of Darwinism and mechanistic natural selection and adaptation, rather than by divine intervention.

It is apparent that modernism itself is now under siege because two of its three main pillars have been either significantly modified or discredited. It is for this reason that some intellectuals refer to their movement as post-modernism, as we will discuss later.

A doctoral candidate in Physics from the prestigious Johns Hopkins University once stated to Dr. J.P. Moreland: “Science is the only discipline which is rational and true. Everything else is a matter of belief and opinion. If something can’t be tested by scientific method, it cannot be true or rational.”⁵⁸ However, as Dr. Moreland responded:

The notion that “only what can be known by science or quantified and empirically tested is rational and true,” is self-refuting. This statement is not so much a statement of science as it is a statement about science. How could this statement itself be quantified and empirically tested? And if it cannot, then by the statement’s own standards, it cannot itself be true or rationally held. Another way of putting this is to say that the aims, methodologies and presuppositions of science cannot be validated by science. One cannot turn to science to justify science. The validation of science is a philosophical issue, not a

scientific one and any claim to the contrary will be a self-refuting philosophical claim.⁵⁹

Ancient Roman philosophers and lawyers had an adage: *Nemo iudex in causa sua* (Nobody is judge in his own case). This is as true for science as it is for any person or other study or discipline. In this chapter, we will review what are some of the “rules of the game” for rational enquiry, including science, which enables one to adequately judge the merits of the different truth claims that are forwarded by, and are expected from, science. There are, in fact, some very strict limits on science and, when not properly adhered to, what is being passed off as science is tantamount to “special pleading” or propagandizing for some school or another of philosophy.

Phillip E. Johnson tells us that the celebrated 20th century philosopher of science, Alfred North Whitehead, wrote in his acclaimed book, *Science and the Modern World*: “To understand the philosophy of an age, the important thing to note is not what people are explicitly debating, but rather, the underlying presuppositions that are generally taken for granted, because they are considered so obviously true.”⁶⁰ Whitehead held that “these constitute the cultural definition of rationality, the beginning of reason.” Johnson concludes that:

The most important presuppositions in intellectual circles in our time are that science has preeminent authority to describe reality and that science is based on naturalism—or methodological atheism, as it is sometimes called. This starting point necessarily implies, whether everyone understands the implication or not, that room for God exists only in the world of the imagination, or perhaps somewhere back in a ‘big bang singularity’ at the ultimate beginning of time. Belief in God may persist, particularly in people who have only a shallow understanding of science, but the believers can never have more than a tenuous standing in the world of the mind. Science can step forward at any time and employ its prestige to take control of any subject, even subjects inaccessible to empirical investigation

like the ultimate beginning itself. Metaphysical statements by prominent scientists are accepted in the press and throughout public education as advances in scientific knowledge. Contrary statements by theologians or religious leaders are dismissed as 'fundamentalism.' The naturalists hold the cultural power; theists in academic life have to accommodate as best they can."⁶¹

Worldview.

In order to understand these matters of science and its limitations, and their relationship to other studies of reality, it is important to know what is meant by a Worldview. A worldview is a personal and/or societal point of view that has to do with one's most basic assumptions about the origin of life (where we came from and in what condition); the purpose of life; what is right and wrong about life (what went wrong after the beginning or was life always tragic); and what hope there is for the future—either in terms of salvation or utopia. It has to do with the answers to life's searing questions concerning our thoughts, decisions and actions, the physical world, human events, and even each person's mind and heart. There are, therefore, several worldviews, some of which are theistic, while others are atheistic.

In sum, some people equate the word worldview with religion, bearing in mind that there are formally recognized theistic religions, as well as non-theistic religions. Some examples of the latter, as mentioned in the 1961 U.S. Supreme Court Decision, *Torcaso vs. Watkins*, are: Taoism, Buddhism, Secular Humanism, Churches of Atheism, and others. In fact, adherents to these non-theistic religions have their own churches and clergypersons, and some of their adherents were exempted by a subsequent Supreme Court Decision in 1965 from U.S. military conscription on the religious grounds of being "conscientious objectors." There are several fundamental worldviews of Western civilization: Biblical Christianity, Marxism/Leninism, Secular Humanism and Cosmic Humanism (also known as the New Age movement). Whitehead's remarks, noted above, about our most basic presuppositions are important in this regard. T.S. Eliot's apparently

cynical verse that “humankind cannot stand too much reality” speaks to the need to scrutinize our underlying assumptions in order to acquire real truth.

The very definition of truth itself is critically important to our enquiry. What is truth? According to classical philosophers, it is the conformity of our ideas to reality. The Greeks used the word *Aletheia* for truth, and *Aletheia* also means “discovery.” Traditional scientists and philosophers of science have agreed with this definition and fortunately some moderns would agree with it, maintaining that one must hold that the senses are reliable and give accurate information about objective reality, independent of our sense impressions.

However, there is in vogue a notion that truth, as an absolute, is outdated in the age of naturalism. The idea of objective, absolute truth, apart from any popular opinion among the intellectual elite, is fundamentally a theistic concept that is not held by those who believe in modernist metaphysics.

Traditionally in the West, Metaphysics is understood as a branch of philosophy that has to do with ultimate being, the Greek words *meta* meaning “beyond,” and *physis* being “the material world.” It deals with abstract concepts of being (essence and existence), oneness, truth, goodness and beauty. However, over the course of the last century, the school of Logical Positivism confined genuine knowledge within the bounds of science and observation. It rejected any metaphysical world beyond everyday science and common sense. It considers “real truth” to be products of formal logic or mathematics. The related field of Empiricism is the belief that all knowledge is ultimately derived from sense experience. It is skeptical of metaphysical arguments that are based on *a priori* positions, which are claimed to be true irrespective of experience. It is frequently contrasted with rationalism.

The modernists have evolved their own brand of philosophical metaphysics. Although they had staunchly backed at first the idea that the universe always existed, Einstein’s Law of General Relativity, as well as the First and Second Laws of Thermodynamics, obliged them to admit that the universe

had a beginning. Since their starting point is a process that purportedly evolved by itself, entirely unaided, from: non-being into being (the “big bang” purportedly took place in 5 one billionths of a second, exploding into the breath-taking order we find in the constellations—but was not miraculous!!); from inorganic into organic life; then upward to animal life; onwards to rational and sentient human life—they hold that it is outside of our known reality that we could have access to such a thing as an abstract, absolute truth. Instead, the modernists rely on knowledge, which arises from the interpretation of data accessible to our senses by the standards of an authoritative community—the current scientific establishment. In other words, truth is what the elites decide it is. Johnson writes, “Modernists do not often ask whether theism is true; they prefer to ask whether a supernatural Creator is consistent with scientific knowledge. And of course it is not, because they define science to exclude the supernatural.”⁶²

Scientific naturalism tells the history of mankind and the universe is a *mythos* that holds that all reality is ultimately a matter of physical particles and impersonal laws. It sees life as an essentially meaningless competition among organisms intent on surviving and reproducing. It sees the mind as something that is the product of biochemical interactions in the brain. As a result, this reductionist view of rationality has ultimately evolved into firstly, a series of distorted 20th century “modernist” worldviews that resulted in mass murders on a scale that dwarfed all previous murders in history and from there settled more recently into what is known as “postmodernist irrationality,” as the worldview of choice, as people try to navigate their way in a world without such dogmatic absolutes as Truth, Morality and an Ultimate Lawgiver. More will be written on this newest dogmatism later in this book.

J.P. Moreland reports, “there are ... two major philosophical theories of perception: there is perceptual realism which states that objects in the world are the immediate objects of perception, and representative dualism, which holds that the immediate objects of perception are sense images of the world in the minds (perhaps brains) of perceivers.”⁶³

For science to be rational, one must presuppose that the mind is rational, that there is a rational and mind-independent physical universe that causes our sense impressions to occur, that can be studied and understood, and that there is some uniformity of nature to justify induction, which is the drawing of legitimate inferences from examined cases to similar unexamined cases of the same kind. Science must pre-suppose the existence of universals and the uniformity of nature to justify inductive inferences. The justification of inductions is a philosophical matter.

Science must also presuppose that the laws of logic and epistemology are true, that language has objective meaning and relation of scientific hypotheses, theories, and laws, to an objective universe. Logic is defined as the branch of philosophy that studies valid reasoning and argument. It is the way in which one thing may be said to be a consequence of another (deductive logic). Epistemology is the branch of philosophy that examines the nature of knowledge and attempts to determine the limits of human understanding.

However, there are some representative dualists, like George Berkeley, who deny the existence of a mind-independent world. Obviously, if Berkeley's view is correct, rational realism cannot be true.¹⁹ There are some worldviews, for example, that of *Theravada Buddhism*, which denies the existence of an enduring self to know the world, and an enduring real world to be known.⁶⁴

There is also the pre-supposition of the philosophical field of ethics, in science. There must be moral reporting, simplification and accuracy and predictability of testing; disinterestedness and openness to following the evidence wherever it leads; systematic skepticism and openness to "falsifiability" testing; objective and rational standards for methods and measurements of success; evaluations of strengths and weaknesses of tests, hypotheses and theories with a view to assessing the value of replicating such tests and methods and discovering possible laws of science.⁶⁵

While there are a number of cases where most scientists would agree that are representative of good science, there are others that most scientists would agree they do not rise to the level of true science, due to the lack

of observability, empirical testability and repeatability of testing. Some phenomena cannot be observed, e.g., the existence and nature of magnetic fields—only the effects can be observed. However, scientists are in basic agreement concerning these matters.⁶⁶

There is another debate over universals in science (e.g., redness, humanness, or triangularity which can be in more than one place at the same time), between nominalists who deny their existence and realists who affirm their existence. This is an example of a nonscientific, philosophical issue. Realists have appealed to observation in support of their case, but the nominalists' objections make it clear that valid scientific enquiry must take place in the framework of certain philosophical premises and conclusions.⁶⁷

The overlapping of philosophy and science was seen as an important, and even necessary, dialogue and exchange during the earlier formative years of the "scientific revolution." In fact, it is important to recognize that science rests on philosophy as its basis for rational and systematic seeking of truth. Science requires a metaphysical foundation for its necessary presuppositions, and it relies on epistemology for its explanations of *knowability* of the universe (and of knowledge itself), and use of legitimate thought processes to arrive at hypotheses, theories and laws of science. Science also of necessity must assume that the laws of logic are true, and that universals exist and that there is uniformity of nature, in order for there to be a justification of inductive inferences from previously examined cases to as yet unexamined ones. This justification of induction is a philosophical issue.

There are certain boundary conditions for science itself. This is to say, in order to establish any scientific knowledge, there are certain givens that are not conditional upon the formulation of our equations. J.P. Moreland cites as examples the following:

In the equation for Newton's Law of Motion, $v = v_0 + 1/2at$, where "v" is the velocity at time "t," "v₀" is the initial velocity and "a" is the rate of acceleration, the value of "v₀" is a brute given, and is not settled by the equation.

Other examples of brute givens are: the mass of a proton, the rate of expansion of the Big Bang, the existence of the Big Bang itself. There are philosophical assumptions that cannot be accounted for, or verified by, science itself.

These examples are given to illustrate that Science depends on a number of reasonable presuppositions in order to be grounded as a rational discipline.⁶⁸

All legitimate fields of rational enquiry are looking at the same prime matter of reality—the universe, mankind, and truths. While admitting that there are areas of specific concentration that are of no concern to any other field, it is also true that, to the extent that one is commenting on this common same prime matter of our universe and existence, cross referencing and learning from areas as diverse as chemistry, biology, physics, mathematics, anthropology, archaeology, history, psychology, philosophy and even theology, are productive and builds symmetry and harmony in our worldview.

There are boundary conditions of each of these disciplines and sciences, as noted by Galileo's well-known dictum: "The Church's role is not to tell us how the heavens go, but rather, how to go to heaven." However, there has been a concurrent effort in more recent times to establish science as delimitative of philosophy and theology. As the argument goes, science can dictate to theology what its limits must be, but not vice-versa. It would appear that some have awarded to science the position of dictator among the universe of arts, disciplines and sciences.

Building on the tremendous achievements of the great founders of different fields of science in the earlier preceding two centuries, there has been a rapid expansion of science over the past century and a half. Based on the philosophical statements of such fields as rational positivism, etc., there has been a real effort during this period to move away from idealism and to concentrate on mechanistic materialism in the interest of "pure science." According to this view, science now provides the boundaries within which

theology can be formulated; it provides the limits for theology. Scientists, and even religious thinkers, are particularly sensitive about employing what is known as the “god of the gaps” strategy. This appeals to actions by God to explain gaps in our scientific understanding. Not only scientists are anxious to avoid this strategy, on the grounds that it is deficient science; even theologians are very keen to not see this strategy employed because, once it is seen that theology is being used to explain away our scientific ignorance, each time science will eventually come up with a natural explanation for the gap in our knowledge, this casts doubt on the legitimate role of theological enquiry.⁶⁹

“If science and theology make competing and differing truth claims, science must win, as it is foundational, immutable, unchanging and established fact.” But is this statement true? Is science so unquestionable as a basis for knowledge that it is the most fundamental source of truth? Is this what the history of science tells us? Is natural science so foundational for knowledge, rationality and truth that it must override learnings and avenues of enquiry in all other areas that go into our modern worldview? Is it an established historical fact that, when there are competing scientific and theological truth claims, scientific theories have never been falsified while the opposing theological views were confirmed?

Frankly, nothing could be farther from the truth. The history of science shows an extraordinary list of cases where science has changed its views and replaced former theories with significantly different ones.⁷⁰ As is to be expected, some scientific theories are more precisely developed over time and, by careful attention by researchers, they are refined, modified and retained by accurate science. Nonetheless, there are other scientific theories that are eventually found to be lacking; they are seen to be fatally flawed and are eventually discarded. Still again, there are some theories that are discarded at one point in history, but are later researched and found to offer valid truth claims in the light of current scientific enquiries. An example of this latter would be Paley’s “watchmaker” argument, which was discarded by Darwin, and referred to negatively very recently in Dawkin’s *The Blind*

Watchmaker. However, Paley's argument has never been compellingly rebutted, according to the distinguished scientist, Dr. Michael J. Behe.⁷¹

William Dembski points out that "science is an interconnected web of theoretical and factual claims about the world that are constantly being revised and for which changes in one portion of the web can induce radical changes in another. In particular, science regularly confronts the problem of having to retract claims that it once boldly asserted."⁷²

One illustration of this can be seen in the 1960 edition of Thomas Clark and Colin Stearn's *Geological Evolution of North America*, in which the status of the geosynclinal theory was compared favorably with Darwin's theory of Natural Selection:

The geosynclinal theory is one of the great unifying principles in geology. In many ways, its role in geology is similar to that of the theory of evolution that serves to integrate the many branches of the biological sciences... Just as the doctrine of evolution is universally accepted among biologists, so also the geosynclinal origin of the major mountain systems is an established principle in geology.⁷³

Dembski cites this example of an "established scientific principle" as one that was later decisively replaced a decade later by another theory, the theory of plate tectonics, which explained mountain formation through continental drift and seafloor spreading. As he points out, "the geosynclinal theory was completely wrong, [so] that when the theory of plate tectonics came along, the geosynclinal theory was overthrown... The history of science is filled with such turnabouts in which confident claims to knowledge suddenly vanish from the scientific literature."⁷⁴

It would appear that it is the temptation of scientists to have their theories account for as much knowledge as possible but then, over time, it becomes necessary for all concerned to squarely face the limitations of the theory due to further light shed on the matter. As Dembski states, some theories, such as the geosynclinal theory in geology, are ultimately disproved and entirely

replaced by completely new theories. At other times, a theory must, over time, be constrained and reformulated.

One example of this would be in the field of Newtonian mechanics. It used to be that physicists thought that Newton's laws provided a total account of the constitution and dynamics of the universe. James Maxwell, Albert Einstein and Werner Heisenberg each showed that the proper domain of Newtonian mechanics was far more constricted. (Newtonian mechanics works well for medium-sized objects at medium speeds, but for very fast and very small objects, it breaks down, and we need relativity and quantum mechanics, respectively...)

Sometimes, theories must be replaced in their entirety by completely new theories. At other times, as with Newtonian mechanics, theories prove inadequate outside a certain range of phenomena and need to be supplemented. In both cases, defective theories give way to new and improved theories. But that is not always the case. It is also possible for theories to be overthrown or contracted without offering a replacement theory.⁷⁵

To see some of the ebbs and tides in the history of science, we can also look at the case of superconductivity. Kamerlingh Onnes discovered superconductivity in 1911. This refers to the complete disappearance of electrical resistance for materials at low temperatures. However, when Onnes made his discovery in 1911, there was as yet no theory to account for superconductivity. That had to wait until 1957, when John Bardeen, Len Cooper and John Schrieffer proposed their "BCS" theory (names after their surnames' initials). They received the 1972 Nobel Prize in Physics for their work. The first paragraph of the text for the Nobel Prize press release described their BCS theory as providing "a complete theoretical explanation of the phenomenon."⁷⁶ However, the completeness of their well-publicized theory came into question in the 1980s, when Georg Bednorz and Alexander Muller discovered superconductors at much

higher temperatures than previously identified and explained by the BCS theory. Thus, BCS is no longer considered by scientists to be the “complete theoretical explanation;” it is now seen as explanatory of a limited range of superconductors. Dembski concludes:

Science can get things wrong—indeed, massively wrong. What is more, sometimes we can tell that science has gotten something wrong without having to identify what the correct or true explanation is. And, unlike religion, science has no prophets. There are no scientific prophets to tell us what course science must take or avoid taking. Different courses need to be tried and only after they are tried does it become clear what was fruitful and what was fruitless....With increasing scientific knowledge, the numbers we calculate may stay the same, diminish or increase... This is a special case of a much more general feature of science, namely, that the known is not a reliable guide to the unknown. Indeed, the history of science is a history of surprises.”⁷⁷

It is also important to note that a “god of the gaps” strategy is sometimes employed by science itself. Many past scientific theories have been discarded or falsified, so a number of *postmortem* studies of outdated scientific theories appear to imply that many current theories of science will not be permanently successful either. Whereas it is true that God was sometimes inappropriately used to explain gaps in science, (e.g., the example of the Vikings of old seeing lightning and hearing thunder and saying it was the wrath of the gods), it is also true that inappropriate insistence on the applicability of certain specific scientific theories has also been tantamount to the use of a “god of the gaps” strategy within science. This is the case when one is dealing with ultimate boundary conditions, as they are outside the boundaries of science because one is then dealing in research on the origins of life, on historical science, rather than operational science.

There is no real controversy between evolutionist scientists and creationist scientists when dealing in matters of process, or operational, science.

Achievements in space travel, high tech medical care, computer technology, and so forth, are in this domain. They have advanced our civilization because there is a clear methodology involving doing experiments in the present, making inferences for these results, and doing still more experiments to test those ideas. In these instances, the inferences or conclusions are closely related to the experiments and normally there is not much need for speculation.

However, when dealing in historical, or origins, science, our scientific methods cannot be so conclusive about what happened in the distant past because one cannot directly experiment on distant past events. One can make observations in the present to make inferences about the past. However, these inferences require a considerable amount of speculation. As pointed out in *The Answers Book*,

The further back in the past the event being studied, the longer the chain of inferences involved, the more guesswork, and the more room there is for non-scientific factors to influence the conclusions—factors such as the religious belief (or unbelief) of the scientist. In fact, what may be presented as “science” regarding the past may be little more than the scientist’s own personal worldview. The conflicts between science and religion occur in this historical science, not in operational science. Unfortunately, the respect earned by the successes of operational science confounds many into thinking that the conjectural claims arising from origins science carries the same authority. When it comes to historical science, it is not so much the evidence in the present that is debated, but the inferences about the past.⁷⁸

In some instances, the “gaps” in science seem to be getting progressively more challenging with the advances of science, particularly in this matter of origins science. “The more one learns about the complexity of the organic materials necessary for life and their complex interdependence, and the more we learn about conditions on the early earth, the more implausible

a strictly materialistic account becomes. Scientists one hundred years ago were not aware of the immensity of the problems in the spontaneous generation of life from some primordial soup but today, some scientists feel these problems are overwhelming.”⁷⁹ In this regard, scientists Charles B. Thaxton, Walter L. Bradley and Roger L. Olsen note:

One characteristic feature of ... [our] critique needs to be emphasized. We have not simply picked out a number of details within chemical evolution theory that are weak, or without adequate explanation for the moment. For the most part this critique is based on crucial weaknesses intrinsic to the theory itself. Often it is contended that criticism focuses on present ignorance. ‘Give us more time to solve the problems,’ is the plea. After all the pursuit of *abiogenesis* (the [materialistic] origin of life from non-life) is young as a scientific enterprise. It will be claimed that many of these problems are mere state-of-the-art gaps. And surely some of them are. Notice, however, that the sharp edge of this critique is not what we do not know, but what we do know. Many facts have come to light in the past three decades of experimental inquiry into life’s beginning. With each passing year the criticism has gotten stronger. The advance of science itself is what is challenging the notion that life arose on earth by spontaneous (in a thermodynamic sense) chemical reactions.”⁸⁰

Using the “God of the Gaps” argument against creation science and as a “proof” of the validity of a mechanical, materialistic premise for science, is not substantiated by the evidence. In fact, it can be reasonably argued, to the contrary, the expansion of scientific enquiry in Europe increased as the Protestant Reformation, with its great emphasis on the widespread reading of the Bible, was popularized. The Biblical teaching is that the created universe is real, consistent, understandable and possible to investigate. “Even non-Christian historians of science such as Loren Eiseley have acknowledged this.”⁸¹ Consequently, almost every branch of science was

either founded, co-founded, or dramatically advanced, by scientists who believed in the Bible's account of creation and the Flood".⁸²

Henry M. Morris, has listed, with supporting details, hundreds of pioneers in science who were theists and believers in creationism. To illustrate, consider this sampling of the following founders:

Antiseptic surgery;	Joseph Lister
Bacteriology,	Louis Pasteur
Calculus,	Isaac Newton
Celestial Mechanics,	Johannes Kepler
Chemistry,	Robert Boyle
Comparative Anatomy,	Georges Cuvier
Computer Science,	Charles Babbage
Dimensional Analysis,	Lord Rayleigh
Dynamics,	Isaac Newton
Electronics,	John Ambrose Fleming
Electrodynamics,	James Clerk Maxwell
Electromagnetics,	Michael Faraday
Energetics,	Lord Kelvin
Entomology (living insects)	Henri Fabré
Field Theory,	Michael Faraday
Fluid Mechanics,	George Stokes
Galactic Astronomy,	Sir William Herschel
Gas Dynamics,	Robert Boyle
Genetics,	Gregor Mendel
Glacial Geology,	Louis Agassiz
Gynecology,	James Simpson
Hydrography,	Matthew Maury
Hydrostatics,	Blaise Pascal

Ichthyology,	Louis Agassiz
Isotopic Chemistry,	William Ramsay
Model Analysis,	Lord Rayleigh
Natural History,	John Ray
Non-Euclidean Geometry,	Bernhard Riemann
Oceanography,	Matthew Maurey
Optical Mineralogy,	David Brewster. ⁸³

Furthermore, there are many renowned contemporary scientists who believe the Bible.⁸⁴ To cite only one example here, Werner von Braun, who is known as the Father of Space Science, has said: “The vast mysteries of the universe should only confirm our belief in the certainty of its Creator. I find it as difficult to understand a scientist who does not acknowledge the presence of a superior rationality behind the existence of the universe as it is to comprehend a theologian who would deny the advances of science.”⁸⁵

It can be argued that Judeo-Christian theology shares a good metaphysical foundation for science and helps to explain the necessary preconditions of science. This is so because it holds that there is a real objective universe that was made by the same Being who made our sensory and rational faculties and who gave us epistemic and moral values. While philosophy enables science to effectively seek truth by providing the necessary presuppositions for science, it can be argued also that Christian theology holds that the world is rational, that values exist, that the world and the senses are reliably knowable, and supportive of a worldview that affirms why the world is as it is, and that true science is possible. Compared with other religions, Judeo-Christian theology is consistent with true science. Christian Theology would appear to have lent support to science and, looking at the history of science, it may well be that science is most compatible with a Judeo-Christian worldview.⁸⁶

When compared with this theistic worldview, if one accepts fully the theoretically “purely scientific” Darwinist worldview with its underlying philosophy of naturalism, one must believe that:

- ✦ Nothing produces everything.
- ✦ Non-life produces life.
- ✦ Randomness produces fine-tuning.
- ✦ Chaos produces information.
- ✦ Unconsciousness produces consciousness.
- ✦ Non-reason produces reason.⁸⁷

This was the leap of faith that had under-girded the worldview of author Lee Strobel for many years. While Strobel has since come to reject these premises, he is not overstating the current Darwinian case, or the conclusions that Darwinism draws. In fact, one of the world’s foremost Darwinian spokesmen, Dr. William Provine, an evolutionary biologist of Cornell University, argued that, if Darwinism is true, there are five inescapable conclusions:

- ✦ There is no evidence for God.
- ✦ There is no life after death.
- ✦ There is no absolute foundation for right and wrong.
- ✦ There is no ultimate meaning for life.
- ✦ People do not really have free will.⁸⁸

It has been the intent of this chapter to show that science has its limitations. Science must bow to the same rules of rational analysis and philosophical enquiry as every other art and discipline. One of these rules was formulated by Socrates: follow the evidence wherever it leads. In the coming chapters, we will have a look at evidence provided by the various sciences, particularly over the past six decades, to see whether or not they really support the mechanistic and materialistic evolutionary worldview.

TWILIGHT OF DARWINISM

Part II:

*Darwinism's Agony.
150th Anniversary Perspective, Where the
Evidence Leads*

Chapter 3: Geology's Challenge to Darwinism

Geologists enter into discussions of Darwinism because they seek to provide "...a better understanding of the earth's evolution and its present features"⁸⁹ There is a truly important scientific study of the earth, including its composition, structure, physical properties and history. It studies the chemical makeup of the solid Earth, its minerals, rocks and structures. It has many vitally important sub-disciplines in a variety of areas branching from the evolution of planetary bodies and their satellites; economic geology, which touches on mining and petroleum, etc.; marine geology, geodesy, geophysics and geochemistry. They also study seismology, which is of immediate importance to those of us living in earthquake-prone regions. Some of their "tools" are applied physics, chemistry, biology, and mathematics, including specialized statistics.

Geology moreover specifically studies, *inter alia*, landforms and the process that produce them. It delves into geologic history, including the specialized study of fossils and the fossil record, which we will deal with in the next sub-section on Paleontology. However, for now it would be useful to deal with some aspects of Geology concerned with landforms and the processes that produce them, as this has a bearing on our present topic.

The data of geology are important for determining the best possible estimate of the age of the earth. The age of the earth is foundational in discussions of our history and philosophy of life, as these shape our worldviews and moral philosophy. I would like to illustrate this fact with the following

example: Nancy Pierce argues that the person who holds the advantage in discussions of origins, controls the basis of our dominant worldview. She relates a discussion between evolutionist philosopher of science, Dr. Michael Ruse, in which Dr. Duane Gish surprised him:

“The trouble with you evolutionists is that you just don’t play fair... You accuse us of teaching a religious view, but you evolutionists are just as religious in your own way. I defy you to show any difference with evolution. It tells you where you came from, where you are going, and what you should do on the way.” This apparently surprised Ruse but he eventually agreed that Gish was right. “Evolution is more than mere science. Evolution came into being as a kind of secular ideology, an explicit substitute for Christianity.” While Ruse remains an “ardent evolutionist and ex-Christian, he said “I must admit that in this one complaint...the {Biblical} literalists are absolute right. Evolution is a religion. This was true of evolution in the beginning, and it is true of evolution still today.”⁹⁰

Because Ruse and many of his listeners at that meeting of the American Association for the Advancement of Science (AAAS) hold to these “scientifically-supported” views that serve as pillars for materialistic philosophy which “liberates the human spirit,” and “rival the traditional Judeo-Christian teaching,”⁹¹ it is important to see the extent to which their “scientific data” are in reality, incontrovertible scientific facts. As most people do not delve into science in great details, let us serve the truth by “demystifying” the professional jargon. Let’s begin with the alleged age of the earth, and the tools and methods by which this age is determined by the specialists.

In the Oct. 26, 2006 *El Comercio* newspaper here in Lima, Peru, there was a brief article about Ohio State University researchers who have discovered complex organic molecules in fossils of animals that inhabited the earth 350 million years ago. Their findings were presented to the Geology Society of the United States during their meeting in Philadelphia. While not

denying the importance of the work of these researchers, I am justified in questioning the age of their “find,” for reasons that will follow in this chapter.

Just how does one arrive at this date of 350 million years? What are the tools at their disposal, and with what absolute certainty can they make this statement? Or is it rather the best “ballpark” estimate that they can use, by following the current “in vogue” reasoning of our contemporary evolutionary colleagues? The tools are as follows:

Radioisotope dating.

Radiometric dating methods claim to give factual timeline information concerning millions and billions of years. Let's look at the scientific tools that are apparently expected to verify these very large amounts of time.

Carbon 14 (^{14}C) dating.

Carbon is one of the essential chemical elements, and it comes in several forms or isotopes. One rare form has atoms that are 14 times as heavy as hydrogen atoms. This is ^{14}C , also known as radiocarbon, which is produced by cosmic rays that knock neutrons out of atomic nuclei in the upper atmosphere. These fast-moving neutrons hit ordinary nitrogen (^{14}N) at lower altitudes and convert it into ^{14}C . Now, ^{14}C is different from ordinary carbon (^{12}C) because ^{14}C is less stable yet decays slowly. As it decays, it changes back into nitrogen and releases radioactive energy.⁹²

When ^{14}C is formed, it combines with oxygen to give $^{14}\text{CO}_2$ and, in this form, it is able to be cycled through plants and animals. It is possible to come up with $^{14}\text{C}/^{12}\text{C}$ ratios in different hosts—for example, in air, etc. One finds a $^{14}\text{C}/^{12}\text{C}$ ratio in plants and animals and humans also. In living things, ^{14}C atoms are constantly changing back to ^{14}N , but they also exchange carbon with their host surroundings. The interesting thing is that, in a living host, the $^{14}\text{C}/^{12}\text{C}$ mixture remains about the same as in the atmosphere: but “in a plant or animal that died, the ^{14}C atoms which decay are no longer replaced, so the amount of ^{14}C in that once-living thing decreases as time goes on. In

other words, the $^{14}\text{C}/^{12}\text{C}$ ratio gets smaller. So, we have a clock which starts ticking the moment something dies...⁹³ It must be said here, that this ^{14}C testing cannot work for non-living, mineral substances.

Now here is the vitally important thing to know about ^{14}C testing:

The rate of decay of ^{14}C is such that half of an amount will convert back to ^{14}N in $5,730 \pm 40$ years. This is the “half-life.” So, in two half-lives, or 11,460 years, only $\frac{1}{4}$ will be left. Thus, if the amount of ^{14}C relative to ^{12}C in a sample is one-quarter of that in living organisms at present, then it has a theoretical age of 11,460 years. Anything over about 50,000 years should theoretically have no detectable ^{14}C left. That is why radiocarbon dating cannot give millions of years. In fact, if a sample contains ^{14}C , it is good evidence that it is not millions of years old.⁹⁴ Furthermore, scientists are quick to point out some additional limitations and constraints of Carbon 14 testing.

- ✦ Plants discriminate against carbon dioxide containing ^{14}C . That is, they take up less than would be expected and so they test older than they really are. Furthermore, different types of plants discriminate differently. Today a stable carbon isotope, ^{13}C , is measured as an indication of the level of discrimination against ^{14}C .
- ✦ Secondly, the ratio of $^{14}\text{C}/^{12}\text{C}$ in the atmosphere has not been constant—for example it was higher before the industrial era when the massive burning of fossil fuels released a lot of carbon dioxide that was depleted in ^{14}C . This would make things which died at that time appear older in terms of carbon dating. ...
- ✦ Measurement of ^{14}C in historically dated objects (e.g., seeds in the graves of historically dated tombs) enabled the level of ^{14}C in the atmosphere at that time to be estimated, and so partial calibration of the “clock” is possible. Accordingly, carbon dating carefully applied to items from historical times can be useful. However, even with such historical calibration, archaeologists do not regard ^{14}C dates as absolute because of frequent anomalies. They rely more on

dating methods that link into historical records. Outside the range of recorded history, calibration of the “clock” is not possible.⁹⁵

Also according to Dr. Batten and his colleagues,

[There were also] alterations in assessing $^{14}\text{CO}_2$ ratios in the atmosphere due to atmospheric testing of atomic bombs in the 1950s, which made things carbon-dated appear younger than their true age. The amount of cosmic rays entering earth's atmosphere affects the amount of ^{14}C produced; and also, the strength of the earth's magnetic fields affects the amount of cosmic rays entering the atmosphere. Since the energy of the earth's magnetic field has been decreasing, more ^{14}C is being produced now which makes things look older. The Genesis Flood would have also distorted the readability of the carbon balance. Unless all these factors were corrected for, carbon dating can only be skewed. Volcanoes also spew forth CO_2 which is depleted in ^{14}C . The net result of these factors would be that fossils formed in the early post-flood period would give radiocarbon ages older than they really are.⁹⁶

Other Radiometric Dating Methods.

There are several other methods that allegedly give ages of millions or billions of years for rocks. They differ from carbon dating because they use the relative concentrations of parent and daughter products in radioactive decay chains. Examples of these include: “Potassium-40 decays to argon-40; uranium-238 decays to lead-206 via other elements like radium; uranium-235 decays to lead-207; rubidium-87 decays to strontium-87, etc. These techniques are applied to igneous rocks and are normally seen as giving the time since solidification.”⁹⁷

Dr. Batten agrees that “these isotope concentrations can be measured very accurately, but isotope concentrations are not dates... To derive ages from such measurements, improvable assumptions must be made, such as: the starting conditions are known (for example, that there was no daughter

isotope present at the start, or that we know how much was there); decay rates have always been constant; systems were closed or isolated so that no parent or daughter isotopes were lost or added.”⁹⁸

There is scientific evidence that the radioisotope dating methods are far from perfect and cannot be relied upon to measure millions, much less billions, of years. Geologist John Woodmorappe has authored the book titled *The Mythology of Modern Dating Methods*,⁹⁹ which scrutinizes the claims and their deficiencies. Woodmorappe chronicles cases where scientists overlook data that does not favor their claims to great longevity, thus skewing their results to fit “the prevailing paradigm.”¹⁰⁰ This is not to question their integrity; rather, it is to question their basic and unquestioned assumptions.

Dr. Batten *et al* also cite A.E. Williams, “an expert in the environmental fate of radioactive elements, [who] identified 17 flaws in the isotope dating reported in just three widely respected seminal papers that supposedly established the age of the earth at 4.6 billion years.”¹⁰¹ Woodmorappe has “exposed hundreds of myths that have grown up around the techniques. He shows that ‘the few good dates left after the bad dates are filtered out could easily be explained as fortunate coincidences.”¹⁰²

These same scientists point out additional constraints on the efficacy of the diverse radiometric dating methods. *Inter alia*, the wild variances in testing rocks of known historical age—which makes them doubt the reliability of testing rocks of unknown age. Furthermore, it would be helpful if at least different dating techniques would consistently agree; yet they typically do not. There are cases where “wood” was dated by ¹⁴C testing at 45,000 years old, while the surrounding basalt was dated by the potassium-argon method at 45 million years old.¹⁰³ In the Uinkaret Plateau of the Grand Canyon, there are some basalt rocks that most geologists accept as being only thousands of years old, yet these following wildly varying ages were given to the very same rocks by different scientific methods:

Method

Age

Six Potassium-argon model ages

10,000 years to 117 Ma (millions of years)

Five rubidium-strontium ages

1,270- 1,390 Ma

Rubidium-strontium isochron

1,340 Ma

Lead-Lead isochron|

2,600 Ma

As noted above, specimens older than 50,000 years old should have too little ^{14}C to measure. Yet even wood, or coal samples, which are supposedly even hundreds of millions of years old, have been found to have ^{14}C in it. Why this should be, is not able to be explained by the evolutionists, but creationist science is perfectly consistent with these findings.¹⁰⁴

There are other scientific physical evidence data that call into question the millions and billions of years attributable to fossils and rocks. One of them has to do with the evidence for rapid formation of geological strata, as could have been caused by the Genesis flood. Some of these are:

- lack of erosion between rock layers supposedly separated in age by many millions of years; lack of disturbance of rock strata by biological activity (worms, roots, etc.); lack of soil layers; polystrate fossils (which traverse several rock layers vertically—these could not have stood vertically for eons of time while they slowly got buried); thick layers of “rock” bent without fracturing, indicating that the rock was all soft when bent, and more.¹⁰⁵ In this regard, is worthwhile having a look at the photograph of an upright polystrate tree trunk, found in figure 8.1 in Dr. Jonathan Sarfati’s excellent book, *Refuting Compromise*.¹⁰⁶

- ✦ Red blood cells and hemoglobin have been found in some (un-fossilized) dinosaur bones. But these could not last more than a few thousand years—certainly not the 65 million years since the last dinosaurs lived, according to evolutionists.
- ✦ The earth's magnetic field has been decaying so fast that it looks as though it is less than 10,000 years old.
- ✦ Radioactive decay releases helium into the atmosphere, but not much is escaping. The total amount in the atmosphere is only 1/2000th of that expected if the atmosphere were really billions of years old. The helium escapes from rocks. But helium is still found in rocks, which could not be the case if they were billions of years old.
- ✦ Salt is entering the sea much faster than it is escaping. But the sea is not nearly salty enough for this to have been happening for billions of years.¹⁰⁷

Scientists know that all estimates about the age of the earth are tentative until all the data are in. Thus far, they have had to abandon many “proofs” for evolution. The famous evolutionary spokesman, William Provine of Cornell University even said: “Most of what I learned of the field (evolutionary biology) in graduate school (1964-1968) is either wrong or significantly changed.”¹⁰⁸

There are various other dating methodologies mentioned in this excellent source book *The Answers Book*, that would be valuable to any student of this topic. It outlines the strengths and deficiencies of the various methodologies, so as to allow for valid assessments of their merits. All in all, none of these “tools” provide data that are so “water-tight” that believers in the Biblical Creation account must forsake their philosophy of science, or their worldview

Chapter 4: *Paleontology's Challenge to Darwinism*

“*Evolution is a* fact, amply demonstrated by the fossil record,” said Carl Sagan.¹⁰⁹ We can watch on TV or read in *National Geographic* many interesting discoveries of fossils that are claimed to support the theory of evolution. Recently, for example, Dr. Arnegard and colleagues of Cornell University have discovered electric fish that are on a verge of evolutionary split because fish with the same DNA are emitting different electrical signals that result in their mating with others of their own signal waveform and warning off others with different waveform. However, counsels Dr. Argenard, it may be too early to tell because speciation occurs over so many generations, and it perhaps may possibly not result in speciation.¹¹⁰ Even more astonishing and recent was the discovery of “a complete skeleton of a 3-year-old female, ‘Selam,’ from the “ape-man” species represented by ‘Lucy.’ The species is *Australopithecus afarensis*, which lived in Africa some 4 million years ago. It is thought by the researchers that Selam lived some 100,000 years before Lucy.”¹¹¹

The field of paleontology was something that Charles Darwin himself had placed his hopes on, to substantiate in due time his theory of the Origin of Species by providing transitional evidence in the fossil records. Thomas Huxley was equally convinced of the importance of this scientific evidence. Darwin did a sketch to illustrate the tree of life, starting with an ancient ancestor at the bottom and then blossoming upward into limbs, branches and twigs as life evolved with increasing diversity and complexity. It appears in his book titled *The Origin of Species*. Darwin believed that

an early “prototype” of life existed and, due to its offspring’s having been subjected to a set of conditions, and others having been subjected to other conditions, the natural selection could modify the various populations in different ways. Over time, the species could produce divergent varieties and they would eventually become separate species. For this reason, Darwin’s illustration took the form of a tree, with more and more branches spreading out at the top.

A fundamental tenet of Darwin’s theory was that natural selection would act “slowly, by accumulating slight, successive, favorable variations,” and that “no great or sudden modifications” were possible.”¹¹²

During Darwin’s lifetime, he had been encouraged by the discovery of *Archaeopteryx*, a flying bird that has teeth and tiny claws on its wings. This is to say, he was pinning his hopes that evidence of the “missing link” that would clearly demonstrate the transition from one reproductive species to another.

Darwin and his followers, extrapolating such examples of *Microevolution*, are also believing in *Macroevolution*, which means change between species. Examples of this would be the whole chain of uphill required changes from amoebas to fish, birds and land mammals and humans. Yet it is clearly evident that some 98% of such mutations are lethal. As Don Batten, et al., argue, this kind of extrapolation is somewhat like “...arguing that, if an unprofitable business loses only a little money each year, given enough years it will make a profit.”¹¹³

Darwin had expected millions of transitional fossils to be found as paleontology would progress and develop. Given his thesis that the world was millions of years old and that there were many small, gradual changes from one species to another, evidence must surely be found to substantiate his argument. But Darwin himself was troubled during his lifetime because each of the divisions of the biological world (kingdoms, phyla, classes, orders) conformed to a basic structural plan with very few intermediate types. He very much wanted to find links between these discontinuous groups. He

asked, "Why, if species have descended from other species by insensibly 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?"¹¹⁴

Darwin's proposed solution to this problem was his theory of extinction; the appearance of an improved form implied a disadvantage for its parent form. "If we look at each species as descended from some other unknown form, both the parent and all the transitional varieties will generally have been exterminated by the very process of formation and perfection of the new form."¹¹⁵ As this theory implies, appearance will seem to be against a theory of evolution in our present times because we only see distinct and stable species and groupings with only rare intermediate forms. The links between the discontinuous groups that once existed have vanished due to mal adaptation.¹¹⁶

Since this is so, and we cannot see such discontinuous groups and their links in our present times, Darwin's theory would need to be supported by the paleontological record. It was therefore in the fossil record that one could hopefully find clear evidence of the necessary missing links. After all, Darwin held that his theory implied that "the number of intermediate and transitional links, between all living and extinct species, must have been inconceivably great."¹¹⁷ As Phillip Johnson reasonably concludes, "one might therefore suppose that geologists would be continually uncovering fossil evidence of transitional forms."¹¹⁸ However, Darwin had to recognize that the findings of geologists during his lifetime seemed to lead in the opposite direction, with species and groups of species appearing quite suddenly rather than at the end of a chain of evolutionary links. As he admitted, the state of the fossil evidence was "the most obvious and gravest objection which can be urged against my theory,"¹¹⁹ and would appear to maintain the immutability of species. He did not concede, however, that his contemporary fossil record was fatal to his theory; only that more work had to be done in the fossil record, the discovery of which was still in its early stages, and it was for this reason that the fossil record was still misleading.¹²⁰

However, as time passed by, Darwin was progressively more disappointed because evidence of the “missing link” simply was not forthcoming. That there is change within a species is something that Darwin and many other scientists before and after him have correctly noted. This is referred to as *Microevolution*. Examples of this would be the different varieties of dogs, or horses, antibiotic resistance in bacteria and insecticide resistance in insects, and so forth.

Now a century and a half later, with millions of bones found and classified, no transitional fossils have been found, except for a claimed small amount of them, which are debatable. Although some scientists from prestigious universities claim to “see evolution happening all around us,” their arguments fail to distinguish that they are only seeing examples of microevolution. Acting as though they have, as a consequence of these examples of changes within species, scientific proof of macroevolution, is an example of the kind of exaggerated claim that the British refer to as “hurling the elephant.” This imprecise use of the word “evolution” only serves to confuse, not clarify, matters.

Evolutionist Dr. Colin Patterson, Senior Paleontologist of the British Museum of Natural History, responded in his letter of April 10, 1979 to a written question asking why he failed to include illustrations of transitional forms in his book on evolution. His response is as follows:

...I fully agree with your comments on the lack of direct illustration of evolutionary transitions in my book. If I knew of any, fossil or living, I would certainly have included them. You suggest that an artist should be used to visualize such transformations, but where would he get the information from? I could not, honestly, provide it, and if I were to leave it to artistic license, would that not mislead the reader?

I wrote the text of my book four years ago. If I were to write it now, I think the book would be rather different. Gradualism is a concept I believe in, not just because of Darwin’s authority, but because

my understanding of genetics seems to demand it. Yet Gould and the American Museum people are hard to contradict when they say there are no transitional fossils. As a paleontologist myself, I am much occupied with the philosophical problems of identifying ancestral forms in the fossil record. You say that I should at least “show a photo of the fossil from which each type of organism was derived.” I will lay it on the line—there is not one such fossil for which one could make a watertight argument.¹²¹

Darwin's theory predicted not only that fossil transitionals would be found. It implied that a complete fossil record would be mostly transitionals. His theory also holds as a corollary that the pattern of extinction would be even more gradual than the pattern of evolutionary emergence: “There is reason to believe that the complete extinction of the species of a group is generally a slower process than their production...In some cases, however, the extermination of whole groups of beings...has been wonderfully sudden.”¹²²

There have been several fossil successes that would apparently bolster the arguments of the proponents of evolution. There was, as noted, *Archaeopteryx*, an ancient bird with reptilian features, and then a series of other “finds,” such as dinosaurs, ancient mammal-like reptiles, a sequence in the horse line, etc. This sequence, of course, theoretically runs the course from “goo, through the zoo, to you,” as the famous saying goes. The Darwinian (including Neo-Darwinian versions) argument is that life emerged over billions of years, allowing an infinite time frame to allow the “impossible” to happen. While it would not be possible, in a book of this size, to go into infinite detail about the fossil record, it would be helpful to have a look at some select samples of the fossil record, to see the extent to which the fossil evidence supposedly supports evolution, or to which the Darwinian tree of life illustration has been turned upside down.

Dr. Michael J. Denton,¹²³ has this to say about paleontology:

The universal experience of paleontology ... [is that] while the rocks have continually yielded new and exciting and even bizarre forms

of life...what they have never yielded is any of Darwin's myriads of transitional forms. Despite the tremendous increase in geological activity in every corner of the globe and despite the discovery of many strange and hitherto unknown forms, the infinitude of connecting links has still not been discovered and the fossil record is about as discontinuous as it was when Darwin was writing the *Origin*. The intermediates have remained as elusive as ever and their absence remains, a century later, one of the most striking characteristics of the fossil record.¹²⁴

The Biological Big Bang—The Cambrian Explosion.

The Darwinian theory of a long history of gradual divergence from a common ancestor, with differences slowly becomes more pronounced has come face to face with the fossil record of the past 150 years, and this record is actually showing the exact opposite of his theory. There was an astonishingly rapid appearance of phyla (Darwin had called them "divisions") in what is now known as "The Cambrian Explosion."

The Cambrian Explosion took its name from the 19th century excavations in Cambria, Great Britain. Many fossils have been unearthed at that level in Britain and later elsewhere, and the extraordinary thing is that paleontologists have found at that level fossils of most of the major animal phyla that are still extant, as well as some others that are now extinct. Because of the seemingly sudden contemporaneous appearance of all these phyla during this geological period that many paleontologists believe began some 540 million years ago—just a short moment in the supposed evolutionary history of billions of years—, this is referred to as the "Cambrian Explosion," and also the "Biological Big Bang."¹²⁵ In Dr. Wells words,

Here is what the record shows: there were some jellyfish, sponges and worms prior to the Cambrian, although there is no evidence to support Darwin's theory of gradual divergence.

Then at the beginning of the Cambrian—boom!—all of a sudden, we see representatives of the arthropods ..., echinoderms...; chordates (the major group to which mammals belong) ...were right there at the beginning of the Cambrian.

This is absolutely contrary to Darwin's Tree of Life. These animals, which are so fundamentally different in their body plans, appear fully developed, all of a sudden, in what paleontologists have called the single most spectacular phenomenon of the fossil record."

...As one evolutionary scientist said, the major animal groups 'appear in the fossil record as Athena did from the head of Zeus—full blown and raring to go.'

...Now, nobody can call that a branching tree! Some {Darwinian} paleontologists call it a lawn rather than a tree because you have these separate blades of grass sprouting up. One paleontologist in China says it actually stands Darwin's tree on its head, because the major groups of animals—instead of coming last, at the top of the tree—come first, when animals make their first appearance.

Either way, the result is the same: the Cambrian explosion has uprooted Darwin's tree.¹²⁶

When queried by Lee Strobel about the possibility that, as Darwin proposed, the fossil record is still incomplete, and that natural history might have to be re-written any day due to a new fossil find somewhere else, adding the point that organisms existing prior to the Biological Big Bang were too small or their bodies too soft to have left any trace in the fossil record, Wells conceded, as a scientist, that he has to leave open:

... the possibility that next year someone will discover a fossil bed...that will suddenly fill in the gaps...However, I sure don't think that is likely. It hasn't happened in all this time, and millions of

fossils have already been dug up. There are certainly enough good sedimentary rocks from before the Cambrian era to have preserved ancestors if there were any...

As for the pre-Cambrian fossils being too tiny or soft to be preserved—well, we have microfossils of bacteria in rocks dating back more than three billion years. And there have been soft-bodied organisms from before the Cambrian that have been found in Australia. In fact, scientists have found soft-bodied animals in the Cambrian explosion itself.

So, I don't think that's a very good explanation, either. Today evolutionists are turning to molecular evidence to try to show there was a common ancestor prior to the Cambrian...But (this) doesn't work very well. Here's the process: you can't get molecular evidence from the fossils themselves; all of it comes from living organisms. You take a molecule that is basic to life—ribosomal RNA—and you examine it in a starfish, and then you study its equivalent in a snail, a worm and a frog. You're looking for similarities. If you compare this one molecule across different categories of animal body plans and find similarities, and if you make the assumption that they came from a common ancestor, then you can construct a theoretical evolutionary tree.

But there are too many problems with this. If you compare the molecular tree with a tree based on anatomy, you get a different tree. You can examine another molecule and come up with another tree altogether. In fact, if you give one molecule to two different laboratories, you can get two different trees. There is no consistency, including with the dating. It is all over the board. Based on all this, I think it is reasonable for me, as a scientist, to say that maybe we should question our assumption that this common ancestor exists."¹²⁷

Dr. Wells of course admits that descent from a common ancestor is true at some levels. Examples would include generations of fruit flies, and other common ancestry within a single species have been well recorded. Different kinds of cats, dogs, horses, etc., would be descended from common ancestors. "However, as one goes up the different levels in the taxonomic hierarchy, through species, genus, family, order class, common ancestry is certainly true at the species level, but is it true at higher levels? It becomes an increasingly uncertain inference the higher we go in the taxonomic hierarchy. When you get to the level of phyla, the major animal groups, it is a very, very shaky hypothesis. In fact, I would say it is disconfirmed. The evidence just doesn't support it."¹²⁸

Lee Strobel points out that "nobody can claim that Darwin's tree is an accurate description of what the fossil record has produced... Yet, when I encountered this drawing as a student, I walked away with the conclusion that it illustrated the success of {Darwin's} revolutionary idea."¹²⁹ When Lee asked Dr. Wells if Darwin's drawing was still featured in textbooks today, Dr. Wells answered: "Not only is it included in the textbooks, but it's called a fact.... What I mind is when textbooks call it a fact that all animals share a common ancestor. Well, it is not a fact... If you consider all of the evidence, Darwin's tree is false as a description of the history of life. I'll even go further than that; it is not even a good hypothesis at this point."¹³⁰

In fact, it is hard to not notice that there has been some equivocating by some the most prestigious spokesmen of the evolutionary movement. For example, P.E. Johnson reports that Stephen Jay Gould in 1980 described as "the most sophisticated of modern American textbooks for introductory biology," a textbook which endorses the synthetic theory based on fossil evidence:

[Can] more extensive evolutionary change, macroevolution, be explained as an outcome of these microevolutionary shifts? Did birds really arise from reptiles by an accumulation of gene substitutions of the kind illustrated by the raspberry eye-color gene?

The answer is that it is entirely plausible, and no one has come up with a better explanation...The fossil record suggests that macroevolution is indeed gradual, paced at a rate that leads to the conclusion that it is based on hundreds or thousands of gene substitutions no different in kind from the ones examined in our case histories.¹³¹

Phillip Johnson made this terse comment about this above statement by Gould:

But that last statement is false and has long been known to paleontologists to be false.

The fossil record was revisited in the 1970s in works by Stephen Jay Gould, Niles Eldredge and Steven Stanley. Gould and Eldredge proposed a new theory they called "*punctuated equilibrium*"...to deal with an embarrassing fact: the fossil record today on the whole looks very much as it did in 1859, despite the fact that an enormous amount of fossil hunting has gone on in the intervening years. In the words of Gould:

The history of most fossil species includes two features particularly inconsistent with gradualism:

Stasis. Most species exhibit no directional change during their tenure on earth. They appear in the fossil record looking pretty much the same as when they disappear; morphological change is usually limited and directionless.

Sudden appearance. In any local area, a species does not arrive gradually by the steady transformation of its ancestors; it appears all at once and "fully formed."

In short, if evolution means the gradual change of one kind of organism into another kind, the outstanding characteristic of the fossil record is the absence of evidence for evolution. Darwinists

can always explain away the sudden appearance of new species by saying that the transitional intermediates were for some reason not fossilized. But stasis—the consistent absence of fundamental directional change—is positively documented. It is also the norm and not the exception.¹³²

There will be more written on the intentional equivocations of evolutionary scientists under the section on Biology in this book. Allow me to state here that, by doing this educational sleight-of-hand, evolutionary authors and publishers cross over the line separating rigorous intellectual honesty in research and go into clever marketing of materialistic propaganda. More than that; the leadership of some scientific associations in the United States have made themselves into a sort of humanistic intellectual Pontificate, enforcing their views by pounding their “bully pulpits” in the universities (where hapless students might be dunned marks for opposing such views). They then have the satisfaction of watching their “intellectual authority” be considered as normative in matters of rationality that subsequently determine judgments on moral behavior. They are in turn dutifully parroted by the powerful and well-financed entertainment and media industries first, and too often even by the American Federal Judiciary, staffed as it frequently is by justices and judges who do not distinguish themselves by any profound knowledge of logic, epistemology, or metaphysics, much less ethics or bioethics. Truly, ideas have consequences. “Culture eventually makes politics,” as Judge Robert H. Bork states.¹³³ He furthermore argues that, in the absence of moral authority in healthy churches and educational systems, the Legal system is necessarily taking on a greater moral educational role. Yet much of what has been decided by Federal Courts, and even the U.S. Supreme Court in recent decades, has been woefully deficient, whimsical, and even self-contradictory. This will be discussed in the chapter discussing Ethics and Law.

Dinosaurs.

Of all the fossils, Dinosaurs rank among the most popular. It seems to be the prevailing paradigm of naturalistic origin and, if evolutionary paleontologists are right, they disappeared some 65 to 70 million years before human beings appeared on this planet. Such important evolutionary scientists as Dr. Stephen Jay Gould of Harvard, Dr. Robert Baker, and Edward O. Wilson, the father of Sociobiology, have said in several ways that dinosaurs were significant in setting them on their lifelong path as evolutionary scientists. When I comment to people that I believe in creationism, they sometimes ask, "You mean you don't believe in dinosaurs?" I tell them that I know they existed, and that there is evidence that they coexisted with people. This may sound far-fetched, but please consider what is found in the following paragraphs.

Discoveries of dinosaurs in recent times seems to have started with Dr. Gideon Mantell and his wife Mary Ann in 1822 in England. She found stones placed along the road (to fill ruts) that seemed to be very large fossil teeth. Her husband was an amateur paleontologist and went to the nearby rock quarry from which they had been extracted. He named the dead owner of the teeth *Iguanodon*, since the teeth were similar to that of an iguana but much larger. Soon after, other varieties were found in other parts of Britain, including *Megalosaurus*. Sir Richard Owen of the British Museum of Natural History saw that there were a number of huge, reptiles from the distant past, whose fossilized remains were being discovered. He gave them the (Greek-derivative) name "*dinosaurs*," meaning "fearfully great lizards." By 1877, American fossil hunters Arthur Lakes and O.W. Lucas came across fossil bones projecting from rocks in different parts of Colorado. Soon paleontologists Othniel Marsh and Edward Cope were identifying and naming respectively, 19 and 9 new genera of dinosaurs. To have done this, these scholars needed to have clear evidence of the specific differences noted in the unique fossil types. But when did they live?

National Geographic has stated unequivocally that “No human being has ever seen a live dinosaur.”¹³⁴ The celebrated Evolutionary Paleontologist George Gaylord Simpson held that “the only mammals that had evolved up to that point in time, ...were supposedly small, mostly about mouse-sized, and rare.”¹³⁵ Stephen Jay Gould says “Mammals evolved at the end of the Triassic, at the same time as dinosaurs, or just a tad later. Mammals spent their first hundred million years—two-thirds of their total history—as small creatures living in the nooks and crannies of a dinosaur’s world. Their sixth million years of success following the demise of the dinosaurs has been something of an afterthought.”¹³⁶ But if this is true, how does one explain the following?

- In the Bernifal Cave, in France, which is famous for Neanderthal artifacts, Dr. Jack Cuozzo has photographed a picture of a dinosaur fighting a mammoth.¹³⁷
- Fran Barnes, an authority on rock art of the American South-West: “In the San Rafael Swell, there is a pictograph that looks very much like a *pterosaur*, a Cretaceous flying reptile.”¹³⁸
- Samuel Hubbard of the Oakland CA Museum of Natural History was on a dig in the ancient Indian dwellings in Hava Supai Canyon in Arizona in the late 1800s. On the walls of the canyon where the Indians lived, “Dr. Hubbard found elegant drawings of an elephant, an ibex, a dinosaur, and other animals...Taken all in all, the proportions {of the dinosaur} are good...and it is depicted in the attitude in which man would be most likely to see it—reared on its hind legs, balancing with the long tail, either feeding or in fighting position, possibly defending itself against a party of men... The fact that some prehistoric man made a pictograph of a dinosaur on the walls of this canyon upsets completely all of our theories regarding the antiquity of man...The fact that the animal is upright and balanced on its tail would seem to indicate that the prehistoric artist must have seen it alive. (Verrill, 1925, pp. 5,7). The dinosaur has been identified as *Edmontosaurus*.¹³⁹

- ✦ Another example is this: “Villagers digging in China’s rich fossil beds have uncovered the preserved remains of a tiny dinosaur in the belly of a mammal, a startling discovery for scientists who have long believed early mammals could not possibly attack and eat a dinosaur,”¹⁴⁰ At this point, science has to concede that large mammals were living with the dinosaurs. The authors discovered two different mammals. One was 50% larger than previous mammal fossils... The other, *Repenomamus robustus* was fully intact—and had a dinosaur in his stomach.
- ✦ In 1994, I had the chance to visit the remains of Babylon, which were then being restored or reconstructed as a sort of historical museum. It is interesting that on the Ishtar Gate, (discovered by German archaeologist Robert Koldewey in 1887) there were paintings commissioned by King Nebuchanezzer in 600 B.C., on where there are rows of animals. There are lions and bulls, but there are also dragons. According to the *Berlin Vorderasiatisches* Museum, these appear to fit a *sauropod* dinosaur.¹⁴¹
- ✦ An urn unearthed in Caria, Turkey, is estimated to be from 530 B.C. It depicts a *Mosasaurus* along with several known sea creatures. Lawyer Mario Tolone found dinosaurian representation in Caria, of a pre-Greek civilization of Calabria, that is at least 3,000 years old There appear to be some clear representations of a *Stegosaurus*.
- ✦ A Mesopotamian cylinder seal dated at 3300 B.C. seems to be very similar to modern artists conceptions from a skeleton of an *Apatosaurus*.
- ✦ An Egyptian seal with the cartouche of Tutmosis III (1400 B.C.) depicts a *Sauropterygia*-like animal, a type of *plesiosaur*.
- ✦ A Roman mosaic from 200 A.D. depicts two long-necked sea dragons, similar to the *Tanytropheus*.
- ✦ The Alexandrian Demetrius was a topographer who worked in Rome. He did a mosaic of Ethiopian warriors hunting a dinosaur-type animal, along with other known animals.

- ✦ In Totonacapan, Veracruz, Mexico, there is an ancient Mayan relief sculpture of a serpent-birds. These artists lived from 1000 to 5000 years ago, thus it is very interesting that they would have known of animals believed to have disappeared 130 million years ago.
- ✦ Australian Aborigines in Queensland, Australia tell of a long-necked animal with a large body and flippers. An ancient painting depicts a creature with features very similar to a *Plesiosar*.
- ✦ Some 5 hours' drive south of my home in Lima, Peru, in the small museum of Dr. Javier Cabrera Darquea, in Ica, Peru, there are some 11,000 burial stones that are dated back to the Incan and even some pre-Incaic cultures from A.D. 500 to A.D. 1500. These had been placed over the graves of their dead. Almost one-third of the stones depicted specific types of dinosaurs such as *Triceratops* and *Stegosaurus* and various *Pterosaurs*. It is interesting that several *Diplodocus*-like dinosaurs on the stones have dermal frills. But in 1992, dermal frills were found by modern paleontologists during an examination of fossilized remains of *Sauropods*.
- ✦ In the Natural Bridges National Monument in Utah, there is a petroglyph with specific resemblance to a *Brontosaurus*. In the San Rafael Swell, there is a pictograph of a *Pterosaur*. There are other extant animals depicted there also, as well as some we thought never existed in the Western Hemisphere.¹⁴²
- ✦ The extraordinary thing is that we must ask ourselves, how could these ancient Babylonians, Incas, South Africans, Asians and others, have done such faithful depictions of dinosaurs, if they—or someone they knew—had not ever seen them?
- ✦ It is also noteworthy that, in 1990, some samples of dinosaur bones were submitted for ¹⁴C testing at the University of Arizona's Department of Geosciences Laboratory of Isotope Geochemistry. It was a blind dating procedure—the technicians did not know that the bones had come from *Allosaurus* and *Acrocanthosaurus* dinosaurs and thus prevented “evolutionary bias.” The official results of the test on the U. of Arizona letterhead paper assigned

the oldest ¹⁴C date was 16,120 years for the *Allosaurus* bones, and 23,760 years for the *Acrocanthosaurus* fossils.¹⁴³

- ✦ How very different all this is, from the scientific claims that such animals predated human beings by millions of years, and the purported evidence for macroevolutionary theory —and how much closer it is to the Biblical accounts!

Dinosaurs are not mentioned by this name in the Bible (it was coined in 1841 by Sir Richard Owen). The King James Version of the bible was translated only in the year 1611. However, the Hebrew Bible uses the words *tan*, *tannin*, *tannim*, *tannoth* some 30 times. Strong's Concordance lists "dinosaur" as one of the meanings of *tanninim*.

- ✦ The book of Job, the oldest book of the *Tanach* ("Old Testament") speaks of a great animal that lived in the sea. It is thought this "dragon" might have been the 17-meter long *Kronosaurus*, or the 25-meter long *Liopleurodon*. Although dinosaurs, strictly speaking are land animals, sea reptiles are often grouped with the dinosaurs.
- ✦ Jeremiah 51:34 states that {Nebuchadnezzar} has swallowed me like a dragon.
- ✦ Malachi 1:3 writes of the "dragons of the wilderness."
- ✦ Isaiah 30:6 writes of the fiery flying serpent, which could have been one of the *Pterodactyls*, which are a sort of flying dinosaurs.
- ✦ Job 40:15ff speaks of "*Behemoth*," who "...eats grass...He moves his tail like a cedar...His bones are like tubes of bronze, his limbs are like bars of iron. He is the chief of the ways of God..." Bible translators did not know of this animal and thus retained the Hebrew name, *Behemoth*. *Brachiosaurus* would fit this description.¹⁴⁴

The dinosaurs disappeared but we find many dinosaur fossils. Mostly, when animals die, "they get eaten or they decay until there is nothing left. To form a fossil, unique conditions are required to preserve the animal and replace it with minerals, etc."¹⁴⁵ Even evolutionists now admit that, to have formed the billions of fossils that are being discovered worldwide, "sometimes in

layers kilometers thick, the organisms, by and large, must have been buried quickly. Many evolutionists now say the fossil record formed quickly, in spurts interspersed by millions of years."¹⁴⁶ If, however, one looks at the Biblical record, there was one worldwide Flood that destroyed all flesh... except for two of every *kind* (not species) that were placed on Noah's Ark.

Why, then, did dinosaurs later become apparently totally extinct? Reasonably one can conclude, for the same reasons that a variety of other animals went extinct since that time, in a harsher post-flood environment. Even in our day, more animals are endangered. If one asks how they fit on Noah's Ark, it is plausible that this could happen because as Michael Crichton states in *The Lost World*,¹⁴⁷ "Dinosaurs were mostly small... People always think they were huge, but the average dinosaur was the size of a sheep, or a small pony." It should also be noted that the biggest dinosaur egg is about the size of a football, and all dinosaurs are quite small when first hatched. Furthermore, the Bible used the Hebrew word *min*, meaning "kind" of animal—not every single species.¹⁴⁸

Archaeopteryx.

Before moving on to the topic concerning fossils of "our heritage," as humans, it is worthwhile to share some scientific information concerning *Archaeopteryx*, which had caused such excitement in Darwin's day. It had been heralded by some—as it still is—as the transition between reptiles and birds, dating back some 150 million years. It has wings, feathers and wishbones of a bird, with a lizard-like tail and claws on its wings. However, modern science has determined that this bird "...shows no sign of the crucial scale-to-feather or leg-to-wing transitions."¹⁴⁹

Dr. Jonathan Wells points out that if you want to use *Archaeopteryx* as an intermediate form, you would still have to know how you got from one animal to another. He states that *Archaeopteryx* is not a half-bird, half-reptile, but rather a bird with modern feathers, with a different breeding system, bone structures, lungs, distribution of weight and muscles. The fact that *Archaeopteryx* is a strange animal is not itself evidence for evolution.

There are other strange animals, like the platypus duckbill, which nobody considers transitional but what has characteristics of different classes. In fact, going back into the fossil records, the ancestors of platypus duckbills are nothing other than platypus duckbills.¹⁵⁰

Another fascinating part of the history of *Archaeopteryx*, pointed out by Dr. Wells, has to do with cladistics, whose proponents define homology, or physical similarities, as being due to common ancestry. In reviewing the fossil record, they assume birds came from reptiles by descent and look for reptiles that are more bird-like in their skeletal structure. However, such reptiles are found allegedly millions of years after *Archaeopteryx*. So, *Archaeopteryx*, which is undeniably a bird, but the fossils that look more like the “reptilian ancestors of birds,” occur theoretically millions of years later in the fossil record. Wells says that paleontologists, since 1985, have generally agreed that *Archaeopteryx* is not an ancestor of modern birds; instead, it is a member of a totally extinct group of birds.¹⁵¹

Lee Strobel concludes that “even if *Archaeopteryx* had turned out to be a transitional creature, it would have been but a whisper of protest to the fossil record’s deafening roar against classical Darwinism. ‘If we are testing Darwinism rather than merely looking for a confirming example or two,’ Phillip Johnson said, ‘then a single good candidate for ancestor status is not enough to save a theory that posits a worldwide history of continual evolutionary transformation.’”¹⁵²

Fossils of Defunct “Ape-Men.”

Neanderthal Man (Homo sapiens neanderthalensis): Lived allegedly 150 million years ago. Because reconstructions were stooped, some scientists speculated, and promoted, that he was an “ape-man.” More recently, many scientists admit that the stooped posture was due to a disease, such as rickets, and that *Neanderthals* were humans, capable of speech, art and religious activities.¹⁵³

Ramapithecus: These fossils, consisting of a jaw and teeth, were once claimed as being early human in origin. However, it is now recognized as an extinct type of orangutan.¹⁵⁴

Eoanthropus (Piltdown Man): This was a deliberate hoax, based on a human skull cap to which an ape jaw had been deliberately attached, and they were stained to appear older.¹⁵⁵ According to Batten, et al., it was widely publicized as the missing link for 40 years, but was not even a competent forgery.¹⁵⁶

Hesperopithecus (Nebraska Man): An entire person and family were supposedly envisioned, on the basis of a single tooth.¹⁵⁷ That tooth was later determined to be from a type of pig now living only in Paraguay.¹⁵⁸

Orce Man: "In 1982, Spanish scientists found an ancient skull, which they claimed to be from a 17-year-old boy. Scientists touted this find as a 'missing link.' Only days before a scheduled symposium, UPI News reported, 'When French experts revealed the fact that *Orce Man* was most likely a skull fragment from a four-month-old donkey, embarrassed Spanish authorities sent out 500 letters canceling invitations to the symposium."¹⁵⁹

Pithecanthropus (Java Man): This supposed 500,000-year-old "ape-man" fossil was later rejected by the discoverer, who stated that a human fossil and an ape fossil were just found in proximity.¹⁶⁰ The Dutch discoverer, Eugene Dubois, did the excavation on an Indonesian Island in 1891/92 and said he "represents a stage in the development of modern man from a smaller-brained ancestor." Dubois stated he was the missing link between apes and humans.¹⁶¹ However the *Java man* human fossils are of interest and have been given the name of *Homo erectus*. This classification, of which remains have been found in different parts of the world, are now regarded as fully human.

Also in this *Homo erectus* classification is *Peking Man (Sinanthropus)*. *Peking man* was also touted as a "missing link" because "tools and human bones were found near the apes whose brains they were eating (monkey brains are still eaten in China)."¹⁶² However, "their skulls indicate the brain

size is within the range of people today, and studies of the inner ear have shown that *Homo erectus* walked like us. Both morphology and associated archaeological/cultural findings in association suggest that *Homo erectus* was fully human. Even some evolutionists now agree that *Erectus* is fully human and should be included in *Homo sapiens*."¹⁶³ Lee Strobel had been believing as a teenager all of the *Java man* story and, on the strength of this and other "proofs," as a teenager came to accept Darwinism as truth and reject the Christian faith. He later learned that:

... What is not so well known is that *Java man* consists of nothing more than a skullcap, a femur, three teeth and a great deal of imagination...In other words, the lifelike depiction of *Java man*, which had so gripped me when I was young, was little more than speculation of what he should have looked like if Darwinism were true.

As a youngster beginning to form my opinions about human evolution, I wasn't aware of what I have more recently discovered: that Dubois' shoddy excavation would have disqualified the fossil from consideration by today's standards. Or that the femur apparently did not really belong with the skullcap. Or that the skullcap, according to prominent Cambridge University anatomist Sir Arthur Keith, was distinctly human and reflected a brain capacity well within the range of humans living today. Or that a 342-page scientific report from a fact-finding expedition of nineteen evolutionists demolished Dubois' claims and concluded that *Java man* played no part in human evolution.

In short, *Java man* was not an ape-man as I had been led to believe, but he was a "true member of the human family." This was a fact apparently lost on *Time* magazine, which as recently as 1994 treated *Java man* as a legitimate evolutionary ancestor.¹⁶⁴

Australopithecus africanus: Although this was at one time promoted as the missing link, it is in fact quite ape-like and not even evolutionists are willing to consider it as transitional.¹⁶⁵

Homo habilis: This was formerly touted as the clear link between apes and humans, but recent scholarship is saying that it is a “junk category, comprised of bits and pieces of other types. It is therefore an ‘invalid taxon. Such a creature never existed.’”¹⁶⁶

Australopithecus: Some of these species have been proclaimed human ancestors at times. Lucy (*Australopithecus afarensis*) is one that still comes into the spotlight. It should be noted that recent “detailed studies of the inner ear, skull, and human bones indicate that Lucy and her like are not part-human transitions. For example, they may have walked differently than most apes, but not in the human manner. *Australopithecus afarensis* is very similar to the pygmy chimpanzee, or bonobo.”¹⁶⁷

There is of course no compelling reason to believe that paleontologists have come up with any fossil parts that would constitute scientific evidence that man has evolved from apes. There have been many thousands, even millions of fossils detected since Darwin's time, and none of them can be called missing links—for the very good reason that they never existed. Paleontologists, or laymen, come up with a fossil or two, and then scientists and artists spin a story from their collective imaginations that are only constrained by their own Darwinist and materialistic worldview. Jonathan Wells explains how this works:

Often, {the fossils} are just skull fragments or teeth. So this gives a lot of elasticity in reconstructing the specimens to fit evolutionary theory. For example, when *National Geographic* hired four artists to reconstruct a female figure from several fossil bones found in Kenya, they came up with quite different interpretations. One looked like a modern African-American woman; another like a werewolf; another had a heavy, gorilla-like brow; and another had a missing forehead and jaws that looked a bit like a beaked dinosaur.

Of course, this lack of fossil evidence also makes it virtually impossible to reconstruct supposed relationships between ancestors and descendants. One anthropologist likened the task to trying to reconstruct the plot of *War and Peace* by using just thirteen random pages from the book.¹⁶⁸

Jonathan Wells also quoted Henry Gee, the chief science writer for *Nature Magazine*. In 1999 Gee wrote:

The intervals of time that separate fossils are so huge that we cannot say anything definite about their possible connection through ancestry and descent... All the fossil evidence for human evolution between ten and five million years ago—several thousand generations of living creatures—can be fitted into a small box. ... Consequently, {human evolution} is a completely human invention created after the fact, shaped to accord with human prejudices... To take a line of fossils and claim that they represent a lineage is not a scientific hypothesis that can be tested, but an assertion that carries the same validity as a bedtime story—amusing, perhaps even instructive, but not scientific.¹⁶⁹

Wells concludes that “the only reason anyone thinks the evidence supports human evolution is because Darwinism is assumed to be true on other grounds. If it is, then it makes perfect sense to extrapolate that to human history, which is what Darwin did in his book *The Descent of Man*.”¹⁷⁰

Punctuated equilibrium.

Because of the lack of transitional fossils, this resulted in evolutionists proposing a new mode of evolution in the 1970s (Neo-Darwinism) that was given the high-sounding name of *punctuated equilibrium*. Basically, this states that the evolutionary changes occurred so quickly, in the geological calendar, that no fossils were preserved to show them. The fact that the Soviets trumpeted this should have been grounds enough to make everyone suspicious. This whole wrinkle seems somewhat reminiscent to me of St.

Augustine's wry remark about the Roman soldiers who were suborned to say they were asleep and so the disciples were able to take away Christ's dead body: "Sleeping witnesses are no witnesses at all."

To evaluate the claims made on behalf of evolution, consider this also. In 1980, there was a landmark conference titled "Macroevolution," held at Chicago's Field Museum of Natural History. This was reported on in *Newsweek magazine* in the November 3, 1980 edition, in an article titled "Is Man a Subtle Accident?" by Jerry Adler and John Carey. Science writer Nancy Pearcey comments on this:

What made the conference such a watershed was that the paleontologists bravely told the biologists what they least wanted to hear: that the fossil record does not, and never will, support the Darwinian scenario of a smooth, continuous progress of life forms, nicely graded from simple to complex. Instead, the rocks show a pervasive pattern of gaps. New life forms appear suddenly, with no transitional forms leading to them, followed by long periods of stability during which they show little or no change at all. The late Stephen Jay Gould of Harvard dubbed this "the trade secret of paleontology"—revealing, perhaps inadvertently, how powerful the peer pressure can be among scientists. (Why did they need to keep it secret?)

What made the Macroevolution conference so significant was that many paleontologists finally seemed to be throwing in the towel. ...

Given this consistent pattern in the rocks, the paleontologists at the macroevolution conference announced that it is irrational to keep hoping that the gaps will one day be filled in. It is time to recognize that they are here to stay..."Most species exhibit no directional change during their tenure on earth," Gould explained. "They appear in the fossil record looking much the same as when they disappear."

This is a far cry from classic Darwinian gradualism, and it sent biologists scurrying to identify some new mechanism capable of generating sudden, large-scale, systemic changes—a system that continues to this day...Yet there seems to be no generic mechanism capable of producing such a herky-jerky pattern. Large-scale mutations are usually deleterious, and often fatal. (Think: birth defects.) Thus, evolution is, as the title of one influential book puts it, *A Theory in Crisis*. Darwinian gradualism has been discredited, but there is as yet no broadly accepted alternative mechanism to replace it.¹⁷¹

It is hard to not give the last word to such a fine intellectual as Nancy Pearcey, but I would like to include in this chapter two further statements by world-class scientists:

Dr. David M. Raup, Curator of Geology, Museum of Natural History, Chicago: “We are about 120 years after Darwin and the knowledge of the fossil record has been greatly expanded. We now have a quarter of a million species, but the situation hasn’t changed much. The record of evolution is still surprisingly jerky and, ironically, we have fewer examples of evolutionary transition than we had in Darwin’s time.”¹⁷²

Dr. Colin Paterson, Senior Paleontologist at the British Museum of Natural History, in the Keynote address at the American Museum of Natural History, New York, 1981, said : “I had been working on this stuff for 20 years and there was not one thing I knew about it. That’s a shock to learn that one can be so misled so long...Question is: Can you tell me anything you know about evolution, any one thing, that is true? ...I tried that question on the geology staff at the Field Museum of Natural History and the only answer I got was silence.”¹⁷³

This leaves us with the question: if the evidence for Darwinism is faulty, what is the overriding reason for demanding that it be taught as though it were true science, while another alternative (creationism) which has been hugely successful for centuries, is discarded from our school systems as

though it were fatally flawed? Historian Jacques Barzun says, "The so-called warfare between science and religion should be seen as the warfare between two philosophies and perhaps two faiths."¹⁷⁴ We will go into these reasons later in this book. For now, however, we will continue with the so-called evidence for evolution in other fields of science.

Chapter 5: *Biology's Challenge to Darwinism*

A leading evolutionist (and former Dominican priest!), Francisco Ayala, stated not too long ago that “Darwin’s greatest accomplishment was to show that living beings can be explained as the result of a natural process, natural selection, without any need to resort to a Creator or other external agent.”¹⁷⁵

Genome mapper Dr. Francis Collins wants to integrate both scientific and spiritual perspectives in his book titled *The Language of God*. As a *theistic evolutionist*, he states that, “from a biologist’s standpoint, the evidence in favor of evolution is utterly compelling.”¹⁷⁶ However, according to historian Peter Bowler, “substantive scientific critiques of natural selection were started so early that, by 1900, its opponents were convinced it would never recover.”¹⁷⁷

Dr. Paul Lemoine, regarded by many as the greatest man of science in France in this past century, was an Editor of the prestigious *Encyclopédie Française* and writer of its volume on “Evolution.” He stated: “Evolution is a sort of dogma in which the priests {i.e., the high priests of evolution} no longer believe, but that they maintain for the people.”¹⁷⁸ Curiously enough, he was not a believer in God, but had earlier been a believer in evolution for some years.

This position, stated by Dr. Lemoine, seems to be inversely analogous to the great 20th Century Spanish philosopher, Miguel de Unamuno, whose novel *San Manuel Bueno, Martir*, spoke of the agony of a modern parish

priest who had ceased believing in God, but pretended he had not, as the impact on his parishioners would have been too devastating. Fortunately, Unamuno, who had lost faith in God, recovered his Christian faith and joy later in life. He was a great intellectual and educator (Rector of the University of Salamanca). His adherence to truth and principle was so pure that he wound up being first exiled by the Republicans and then later placed under house arrest by their adversaries—Franco’s fascists—until he died, not much later.

America too has an educator, Doctor of Science Dr. Jonathan Wells, whose adherence to truth and principle cost him dearly. He served for some years in the US Army but, once he concluded that the Vietnam war was immoral, he chose jail instead of serving in that war and instead of going the easier route of falsely declaring that he was a conscientious objector, categorically against all warfare. He is a man who can be counted on to speak the truth at the right time and take the heat from adversaries. Dr. Wells holds a PhD in molecular and cell biology and enjoys prestige as a teacher, researcher and author of books. His articles have been featured in prominent scientific journals, including: *the Proceedings of the National Academy of Sciences USA*, *Development and BioSystems*. Dr. Wells is also the author of an important book about the teaching of science in the United States. It is called: *Icons of Evolution; Why Much of What We Teach about Evolution is Wrong*.¹⁷⁹ The short version of his view of Evolutionary science is as follows:

The case for Darwinian evolution is bankrupt... The evidence for Darwinism is not only grossly inadequate; it’s systematically distorted. I’m convinced that sometime in the not-too-distant future—I don’t know, maybe twenty or thirty years from now—people will look back in amazement and say, “How could anyone have believed this?” Darwinism is merely materialistic philosophy masquerading as science, and people are recognizing it for what it is... I still see room for some evolutionary processes in limited instances. But saying evolution works in some cases is far from showing that it accounts for everything.¹⁸⁰

While Dr. Wells agrees that there has been biological change over time (all organisms within a single species are related through descent with modification), he also holds that:

Darwinism claims much more than that—it's the theory that all living creatures are modified descendants of a common ancestor that lived long ago. You and I, for example, are descendants of ape-like ancestors—in fact, we share a common ancestor with fruit flies. Darwinism claims that every new species that has ever appeared can be explained by descent with modification. Neo-Darwinism claims these modifications are the result of natural selection acting on random genetic mutations.¹⁸¹

Icons of Evolution is Dr. Wells' masterful exposé of what is happening in the legally endorsed and mandated teaching of science in American schools and universities. He says, "If you ask almost any scientist to describe the evidence for Darwinism, time after time they give these same examples. 'They're in our textbooks. They're what we teach our students.' For many scientists, they are the evidence for evolution." The Icons he writes about are textbook examples of the following: the Miller Experiment; Darwin's Tree of Life; Haeckel's embryos; the *Archaeopteryx* missing link, the Galapagos finches; the similarity of bone structure in a bat's wing, a porpoise's flipper, a horse's leg, and a human hand; and the most famous icon—the march of ape-like creatures as they slowly evolve into human beings, which "suggests that we're merely animals that evolved by purposeless natural causes."¹⁸²

When asked what he found as he examined the Icons of Evolution in detail, he responded: "That they're either false or misleading....Much of what science teachers have been telling students is simply wrong. A lot of what you personally were told about the icons is probably false."¹⁸³ When Lee Strobel asked Wells if these icons are cited by scientists so often because they're among the best evidence for Darwinism..., Wells continued the thought: "—And if they're either false or misleading...then what does that tell us about evolutionary theory? That's my point. The question

I'm raising is whether all of this is really science—is it actually a kind of mythology?"¹⁸⁴ Let us follow Wells' evaluation of some of these well-known Icons of Evolution, plus a few others, that have not been mentioned in the preceding chapter.

Galapagos Finches' Beaks.

This is one of the most widely used examples of evolution. Darwin had traveled by sailing ship, on *HMS Beagle*, to the Galapagos Islands, some 600 miles west of Ecuador, in the Pacific Ocean and on the equator. In more recent years, some contemporary biologists have gone back there to reconfirm Darwin's theory. According to one study, during a period of drought, the average beak size among the finches increased slightly, which enabled them to adapt to changing conditions—the longer-beaked birds could find seeds that were tougher to find and extract from clefts in rocks, or bigger seeds more resistant to drought. These birds had better chances of surviving the drought periods. Although this beak-change was measured in tenths of a millimeter, it was touted as confirmation of Darwinism. The National Academy of Sciences (NAS) did a booklet on evolution for teachers, carrying this finch beak story—but they specifically did not mention that the average beak size returned to normal when the drought seasons were over. Rather, NAS speculated on what would happen if the change were to continue for hundreds of years, possibly resulting in a "new species of finch."¹⁸⁵

Phillip E. Johnson remarked about this in his article "The Church of Darwin," which was carried in the *Wall Street Journal* on August 16, 1999: "When our leading scientists have to resort to the sort of distortion that would land a stock promoter in jail, you know they are in trouble."¹⁸⁶ Nancy Pearcey, a science writer, also points out that scientists have used other examples of minor, reversible diversification as though they were clear scientific evidence of evolution into new kinds. She cites one example, which was run on the PBS "Evolution" series, concerning how:

The HIV virus became resistant to the drug used in treatment, due apparently to a mutation. Once again, this was hailed as evolution in action. But once again, as soon as the drug was removed, the change was reversed and the virus returned to normal. (It became drug sensitive again.) The reason is that the mutated form is less fit, so that the unmutated viruses quickly take over again... The PBS program does mention that drug resistance is completely reversible, but presents it misleadingly as evidence for evolution, rather than as evidence against it. Such limited, reversible change is hardly evidence for a theory that requires unlimited, directional change.¹⁸⁷

Four-Winged Fruit Flies.

Experimenting with nature in laboratories, scientists managed to produce mutations in fruit flies. They expose the flies to radiation or toxic chemicals. As fruit flies reproduce in days, the researchers can soon see the resulting mutations over several generations. Among the mutations produced, there are flies with larger wings, smaller wings, deformed wings or even no wings, or legs growing out of their heads. This has been going on for some 50 years now and they have come up with no new and improved flies. One interesting mutation was a four-winged fruit fly, but the extra wings have no muscles so the flies, with extra weight to support, cannot fly very well.

Geneticist Richard Goldschmidt said that even if you could accumulate a thousand mutations in single fruit fly, it would still be nothing but an extremely odd fruit fly. To produce a new species, you cannot simply accumulate changes in the details; instead, you need a new overall design. In sum, "research has cast virtually no light on the really important questions, like how there came to be fruit flies in the first place. Darwinism might explain the survival of the fittest, but not the arrival of the fittest."¹⁸⁸

Peppered Moths.

Another biology textbook example is that of peppered moths in England. Some are lighter-colored gray, and others are a darker gray. It had been

speculated that the air contamination from factories darkened the tree trunks where the moths perched. The moths therefore turned a darker color, which acts as a camouflage to hide from predatory birds.

However, it was later learned that these moths do not really perch on tree trunks; they perch in the upper canopy of trees. The textbook photos were staged—the scientists finally admitted they had glued dead moths onto the tree trunks. This example of peppered moths had been hailed by the evolutionist's camp, as it was apparently evolutionary change in a brief enough time to be observed. It was called "...a prize horse in our stable of examples. Learning the truth was like learning that it was my father and not Santa Claus who brought the presents on Christmas Eve."¹⁸⁹

Nonetheless, in case you are wondering if science textbook writers discontinued this example since this revelation, the answer is no. In fact, one textbook writer admitted he knew the photos were faked but used them all the same: "The advantage of this example is that it is extremely visual. Later on, students can look at the work critically."¹⁹⁰

Haeckel's Embryos.

19th Century German scientist Ernst Haeckel was keen on supporting his theory of science with a slogan called "ontogeny recapitulates phylogeny," according to which each individual embryo replays all prior stages of evolution. To exemplify his theory, he sketched an illustration of vertebrate embryos lined up, side by side—fish, salamander, tortoise, chick, hog, calf, rabbit, and human. Darwin had seen this and stated this was "by far the strongest single class of facts in favor of..." his theory.¹⁹¹

However, even in his own times, this illustration was detected to be a fraud; the first stages look considerably different from those in Haeckel's illustration. Within months of Haeckel's work's publication in 1868, Professor L. Rüttimeyer, professor of zoology and comparative anatomy at the University of Basel gave his reasons for believing Haeckel's work was a fraud, and Professor William His, Sr., professor of anatomy at the

University of Leipzig and a famous comparative embryologist, corroborated Rüttimeyer's findings.¹⁹² This is one of the most famous frauds in biology.

Haeckel's principle of recapitulation (that the human embryo replays the steps of evolution) has likewise been debunked, yet it continues to live a kind of postmortem zombie existence—often in arguments used to justify abortion. (“After all, at that stage, it is only a fish or a reptile.”) Columnist Michael Kinsley even used it in an attempt to support embryonic stem cell research.¹⁹³

Technically, Kinsley acknowledged the principle of ontogeny recapitulates phylogeny has been discredited. Nevertheless, he argued, it contains a kernel of truth: Restated in ordinary language, in the development of the individual human being, “something similar” to evolution really does happen—namely, “that we each start out as something less than human, that the transformation takes place gradually.” But, as Nancy Pearcey argues,

If a principle is false, then restating it in the vernacular does not make it true. Biologically speaking, it is simply incorrect to say that we all start out as something less than human. The embryo is human from day one—a self-integrating organization whose unity, distinctness and identity remain intact as it develops. It is no coincidence that Haeckel, with his low view of life in the womb, supported race-based eugenics, and is often considered a progenitor of German National Socialism. But it is odd that a contemporary liberal like Kinsley would resurrect the long-defunct argument of a racist German scientist.¹⁹⁴

To show that this debunked myth of a “biogenic law” is not just occasionally used after its exposé as a fraud, it was still being used in textbooks in the 1990s in university introductory biology textbooks in the United States. P.H. Raven's and G.B. Johnson's textbook states: “In many cases the evolutionary history of an organism can be seen to unfold during its development, with the embryo exhibiting characteristics of the embryos of its ancestors. For

example, early in their development, human embryos possess gill slits like a fish...”¹⁹⁵

Also in the 1990s, the great television spokesman for evolutionary science, Carl Sagan published an article titled “Is it Possible to Be Pro-Life and Pro-Choice?” in *Parade Magazine*, April 20, 1990. In it he described the development of the human embryo:

By the third week...it looks a little like a segmented worm....By the end of the fourth week...something like the gill arches of a fish or an amphibian have become conspicuous... It looks something like a newt or a tadpole... By the sixth week...reptilian face... By the end of the seventh week...the face is mammalian, but somewhat pig-like... By the end of the eighth week, the face resembles a primate, but is still not quite human.¹⁹⁶

By the 1990s however, Sagan, as a scientist, must surely have known that these ideas taken directly from Haeckel, were discarded by serious science a century and a half earlier, and also by more recent evolutionists like George Gaylord Simpson since 1965: “It is now firmly established that ontogeny does not repeat phylogeny.”¹⁹⁷

It should be noted that a human embryo does not at any point look reptilian or pig-like. Furthermore, the human embryo does not ever have gill slits. It has pharyngeal clefts, but they do not have breathing functions or openings. They develop into the thymus gland, parathyroid glands and middle ear canals—and these have nothing to do with breathing air or water. “However, most evolutionists still use the term ‘gill slits,’ especially in public presentations and when teaching students. The term prevails in school and university textbooks.”¹⁹⁸ In 1996, *Life* magazine described how “human embryos grow ‘something very much like gills,’ which is some of the most compelling evidence for evolution.”¹⁹⁹ Surely this must convince unbiased scientists of the legitimacy of the claim made by Jonathan Wells, that the evidence for evolution is systematically distorted.

The March of the Ape-Men.

This particular icon of a procession of varying varieties of chimps and apes, upwards and onwards to a fully evolved human being, is rather striking. Physical similarities, or *homogenies*, are illustrated, as in Haeckel's illustration of embryos, in close proximity, one after another, in profile, so as to "prove" this ascent of man. This argument is allegedly bolstered by claims that DNA in chimps and humans is near 100% similar. Some say 97%, while others claim even 98 or 99%. The claim is that we are slightly evolved apes; that humans evolved from an ape-like creature that in its turn had finally evolved from a single-celled organism that happened to arise from non-living matter that, in its turn, evolved from non-being. But is this a valid, or even logical argument?

In the first place, it is not evident that similarity is due to a common ancestry but can plausibly be argued to be due to a common designer (creator). Batten *et al.* draw an analogy with automobiles, a Porsche or Volkswagen. While they both have air-cooled, flat, horizontally opposed 4-cylinder engines in the rear and many other similarities, one did not evolve from the other. They have so many similarities because "they had the same designer! Whether similarity is morphological (shape, form) or biochemical is of no consequence to the lack of logic in this argument for evolution."²⁰⁰ To illustrate further with a similar analogy, consider "Berra's Blunder." Phillip Johnson coined that term based on a book written by biologist Tim Berra, titled *Evolution and the Myth of Creationism*.²⁰¹ Wells says:

Berra compared the fossil record to a series of automobile models, saying that if you compare a 1953 and 1954 Corvette side by side, and then a 1954 and 1955 Corvette and so on, then it becomes obvious that there has been descent with modification. He said this is what paleontologists do with fossils and the "evidence is so solid and comprehensive that it cannot be denied by reasonable people."

Far from demonstrating his point, the illustration shows that a designer could have been involved... These successive models of

the Corvette are based on plans drawn up by engineers, so there's more intelligence at work to guide and implement the process. If you wanted to demonstrate that the similar features resulted from a Darwinian process, you would have to show that once you somehow got an automobile, the natural forces of rust, wind, water and gravity would turn one model into its successor. ... Quite unintentionally, Berra has illustrated the fact that merely having a succession of similar forms does not provide its own explanation. A mechanism is needed. With the Corvette, that mechanism is human manufacturing...²⁰²

With Darwinism, two mechanisms are proposed. "One is called 'common developmental pathways,' which means if you have two different animals with homologous features and you trace them back to the embryo, they would come from similar cells and processes. This happens to be mostly untrue"²⁰³

A more common explanation nowadays is that the homologies come from similar genes that are found in their embryos. However, there are numerous cases where similar genes give rise to different features. Wells cites the example of eyes:

There's a gene that is similar in mice, octopuses and fruit flies. If you look at a mouse eye and an octopus eye, there is a superficial similarity, which is odd because nobody thinks their common ancestor had an eye like that. What's more striking is if you look at a fruit fly's eye—a compound eye with multiple facets—it's totally different. Yet all three of these eyes depend on the same or very similar gene. In fact, it is so similar that you can put the mouse gene into a fruit fly that's missing the gene and you can get the fruit fly to develop its eyes as it normally would. The genes are that similar. So, neither the developmental pathway explanation nor the similar gene explanation really accounts for homogeny."²⁰⁴

It is not necessary for humans to be entirely different from all other living things. The fact that there is unity in all of creation can plausibly argue for the unity of all creation as a testimony to the one true Creator. As Batten *et al.* state,

If humans were entirely different from all other living things, then what would we eat? If we are to eat food to gain nutrients and energy to live, what would we eat if every other organism on earth were fundamentally different biochemically? ... Even in an unfallen world where animals and people ate only plants, if animals and humans did not share similar biochemistry, there would have to be separate plant kingdoms for animals and humans to eat.²⁰⁵

Wings 'n Things.

Now, about the homology in vertebrate limbs, such as a bat's wings, a porpoise's flipper, a horse's leg and a human hand, Wells points out that these homologies were described and named by anatomists even before Darwin's time, and they were definitely not evolutionists. "Richard Owen, who was the most famous anatomist of Darwin's time, said they pointed toward a common archetype or design, not toward descent with modification."²⁰⁶ This is not at all *prima facie* or compelling evidence for the so-called "science of evolution."

Wishful Thinking Replaces Scientific Precision.

National Geographic is a magazine that publishes many wonderful articles about this planet, with excellent photography, and has been doing so for a century or more. However, it sometimes gives in to excesses of enthusiasm in its predilection for the topic of evolution. I once read on the Internet the feature article of their November 2006 Issue, concerning "Dikika Baby," the "3.3-million-year-old-baby." In view of what is written above about dating of fossils, their statement can hardly be accepted as a foregone scientific conclusion. And this is not the first time *National Geographic* has suffered from an excess of enthusiasm about evolutionary topics. For example:

A few years ago, the National Geographic Society announced that a fossil had been purchased at an Arizona mineral show that turned out to be 'the missing link between terrestrial dinosaurs and birds that could actually fly'... They called it the *Archaeoraptor*, and it had the tail of a dinosaur and the forelimbs of a bird. *National Geographic* magazine published an article in 1999 that said there's now evidence that feathered dinosaurs were ancestor of the first bird... Well, the problem was that it was a fake. A Chinese paleontologist proved that someone had glued a dinosaur tail to a primitive bird. He created it to resemble just what the scientists had been looking for... There was a firestorm of criticism—the curator of birds at the Smithsonian charged that the Society had become aligned with 'zealous scientists' who were 'highly biased proselytizers of the faith' that birds evolved from dinosaurs."²⁰⁷

In response to this incident, evolutionary ornithologist Alan Feduccia stated to *Discover* magazine:

Archaeoraptor is just the tip of the iceberg. There are scores of fake fossils out there, and they have cast a dark shadow over the whole field. When you go to these fossils shows, it's difficult to tell which ones are faked, and which ones are not. I have heard there is a fake-fossil factory in northeast China, in Liaoning Province, near the deposits where many of these recent alleged feathered dinosaurs were found.²⁰⁸

There are other famous frauds, such as *Bambiraptor*, a small dinosaur that had feathers actually glued to it to prove it was a missing link. Or, there was the report in *Science* magazine of the molecular biologists who reported finding DNA in dinosaur bones that were 65 million years old. Wells points out that the bones from which the DNA was supposedly extracted are from a branch of dinosaurs that no one claims has anything to do with bird ancestry. Furthermore, the DNA produced was one-hundred-percent turkey DNA, having nothing to do with dinosaurs.²⁰⁹

I am tempted to ask the reader at this point—Isn't this "science" hilarious? But down deep, I know that these represent desperate, painful efforts by many secular humanists to keep evolution, the final underpinning and pillar of their non-theistic "religion," or "worldview," from collapsing. (As noted above, the other pillars were those of Marx, Nietzsche and Freud, which are no longer uncritically believed). It is so because, as T.S. Eliot wrote, "Humankind cannot bear very much reality."²¹⁰

To invite someone to question the very foundations of his religion, or worldview, is to have him depart quite a bit from his comfort zone—to burst his bubble. But it is better for one to leave his comfort zone to be enabled to base his judgments on absolute truth: not baseless, politically correct mythologies. Because of the pain involved, however, one must proceed with great personal respect and concern for all in pointing out these anomalies.

Dinosaur Feathers.

Before leaving the topic of Dinosaurs and dinosaur feathers, Reuters reported on March 15, 2006 that a chicken-size dinosaur named *Juraveator*, allegedly 150 million years old, was found in southern Germany. But, according to an article in *Nature* magazine, it is unlike other members of the group of two-legged meat-eating predators known as *Coelurosarus*, because it had no feathers. All representatives of this group *Coelurosaurus* were apparently thought to have feathers. But now they found one that does not. So, what to do? Scientists say that feathers evolved. This is a problem for them.²¹¹ A word on feathers and their supposed evolution is in order:

A sign at the entrance of the bird exhibit at the Cincinnati zoo in Ohio read: "Dinosaurs went extinct millions of years ago—or did they? No, birds are essentially modern short-tailed feathered dinosaurs."²¹² According to Batten *et al.*, Yale University's Dr. John Ostrom started to popularize in the mid-1960s that dinosaurs evolved into birds. However, not all evolutionists agree. For example, University of North Carolina ornithologist Alan

Feduccia says, “They so much want to see living dinosaurs that they now think they can study them vicariously at the backyard bird feeder.”²¹³

A 2004 report from China led to a report of a feathered dinosaur as well, similar to an Oct. 19, 1996 article in the *Cincinnati Enquirer*, p. A13, of a “Downy Dinosaur Reported.” In response, the Philadelphia Academy of Natural Sciences sent a mission to have a look. They concluded that what they saw were not feathers. One of the scientists reported, “...he saw ‘hair-like’ structures—not hairs—that could have supported a frill, or crest, like those on other iguanas.”²¹⁴

The essential problem with the dinosaur-to-birds evolution theory is that birds are warm-blooded while reptiles are cold-blooded. According to Dr. Larry Martin of the University of Kansas, “Recent research has shown the microscopic structure of dinosaur bones was characteristic of cold-blooded animals, so we’re back to cold-blooded dinosaurs.”²¹⁵

In addition to the warm-blooded vs. cold-blooded dichotomy, it defies logic that a common hair-like structure can find within itself the capacity to create infinitely greater complexity. The structure of a feather includes the *Rachis* (shaft), the *calamus* or quill, the barb, the anterior and posterior barbules and their “hooklets,” sometimes called “*Hamuli*.” This too leaves the evolutionists with the need to explain, to claim that a common hair-like structure evolved into such complexity allowing birds to fly, exactly how they know this is true, or how they can plausibly argue it can in fact happen.

When the M*A*S*H TV series’ fictional Col. Potter, was presented with extremely far-fetched stories when he urgently needed to have solid information upon which to take immediate crisis health management decisions, he would sometimes, out of politeness, cry out, “Horse Feathers!” From the evidence so far, “Horse Feathers!” is nowhere near as far-fetched as “Dinosaur Feathers!” At least horses are warm-blooded.

Although Darwinists still seem to allow themselves to be trapped into the claim that evolution took the path from reptiles evolving into mammals,

their position seems highly improbable because, to do so, some of these transformations would have to happen:

- ✦ Scales had to have mutated into hair.
- ✦ Breasts had to have evolved from nothing.
- ✦ Externally laid eggs had to evolve into soft-shelled eggs that were nourished by an umbilical cord and placenta in a womb.²¹⁶

There is no solid laboratory evidence that can back up that claim that these things happened. It is one thing to note that damaged DNA in an embryo will result in a mutant child that differs in some ways from the parent. Most mutations produce offspring that are inferior. However, for the theory of evolution to be true, there would have to have been an absolutely fantastic number of positive mutations resulting in new kinds of offspring that are superior to their parents, and of course better suited for survival—that are favored by natural selection. If so, we should be able to verify this. The “party line” of evolutionists is that although such changes are extremely improbable, the world is so old that in fact, there has been time enough for all these improbable things to happen. This point will be further addressed under the section on Mathematical Probabilities.

Useless “Vestigial” Organs.

One supposed bit of evidence for evolution are such supposedly useless and outdated things as: flightless birds’ small wings, pigs’ toes, male nipples, legless lizards, the rabbit’s digestive system, the human appendix and hip bones and teeth in whales. However:

It is impossible to prove that an organ is useless. The function may simply be unknown and its use may be discovered in the future. This has happened with more than 100 formerly alleged useless vestigial organs in humans that are now known to be essential. Furthermore, even if the alleged vestigial organ were no longer needed, it would prove “devolution,” not evolution. The creation model allows for deterioration of a perfect creation since the Fall.

However, the particles-to-people evolution model needs to find examples of nascent organs, i.e., those which are increasing in complexity.²¹⁷

To further exemplify this point, Dr. D. James Kennedy pointed out that “at the beginning of this (past) century, evolutionists said that the entire endocrine system of man, including the pituitary, the thyroid, and all of the other glands of the endocrine system, were without present function and were vestigial remains of some previous ancestry. Today we know that they simply run the entire chemical process of the body.”²¹⁸

I would invite readers to also refer to *The Answers Book*, pp. 123-128, for clear, precise and very interesting details on these alleged vestigial organs, and why one cannot conclude they constitute evidence for evolution.

Another “Icon of Evolution” that Dr. Wells scrutinizes is that of the world-famous Stanley Miller Experiment, in which Miller set about creating the Building Blocks of Life. Since this is more a topic of microbiology and biochemistry, Wells’ points will be discussed in the following chapter.

Chapter 6:
***Microbiology's and Biochemistry's
Challenges to Darwinism***

Back in Darwin's day, the scientific community knew almost nothing about biochemistry. They had some suppositions about “how fins turned into legs, or legs into wings, since no one had a clue as to how limbs and organs actually worked from the inside.”²¹⁹ Writing about these significant gaps, Professor Michael J. Behe, a professor of biochemistry, titled his 1996 book *Darwin's Black Box; The Biochemical Challenge to Evolution*.²²⁰ It went on to become a bestseller. Living things were “black boxes,” as their internal workings were profoundly mysterious—much as the internal workings of automobiles and computers unfortunately are for most of us. According to R.O. Muncaster, “David Hume and contemporaries of Darwin thought cells were just ‘blobs’ of protoplasm.”²²¹ In their pre-electrical world, the best microscopes were nowhere near as effective as they are now.

Galileo had put together one of the first primitive microscopes, and several other 17th and 18th century scientists were able to view the body parts of insects, or closely inspect plants to the point of seeing cells. For a number of the early scientists users, however, the importance and implications of cells still escaped their attention. As more discoveries of this “Lilliputian” world progressed, conventional notions of what living things are, were overturned.²²²

Charles Singer, the historian of science noted that “the infinite complexity of living things thus revealed was as philosophically disturbing as the ordered majesty of the astronomical world which Galileo had unveiled to

the previous generation, though it took far longer for its implications to sink into men's minds."²²³ In other words, sometimes the new boxes demand that we revise all our theories. In such cases, great unwillingness can arise.

Matthias Schleiden and Theodor Schwann advanced the cell theory of life in the early 19th century and continued writing until the mid-1800s, the same time as Darwin's travels and writing of *The Origin of Species*. Darwin and most of his contemporary scientists were unfortunately not at all up-to-date on Schleiden's and Schwann's new science of cell biology. Even for the cognoscenti, the technology to view cells was still somewhat primitive and limited.²²⁴

The investigation of the cell pushed the microscope to its limits, which are set by the wavelength of light. For physical reasons, a microscope cannot resolve two points that are closer together than approximately one-half of the wavelength of the light that is illuminating them. Since the wavelength of visible light is roughly one-tenth the diameter of a bacterial cell, many small, critical details of cell structure simply cannot be seen with a light microscope. The "black box" of the cell could not be opened without further technological improvements.²²⁵

In the late nineteenth century, as physics progressed rapidly, J.J. Thompson discovered the electron; the invention of the electron microscope would not follow until several decades later. Because the wavelength of the electron is shorter than the wavelength of visible light, much smaller objects can be resolved if they are illuminated with electrons. Electron microscopy has a number of practical difficulties, not least of which is the tendency to fry the sample. But ways were found to get around the problems and, after World War II, electron microscopy came into its own. New sub-cellular structures were discovered: holes were seen in the nucleus, and double membranes detected around mitochondria (a cell's power plants). The same cell that looked so simple under a light microscope now looked much different. The same wonder that the early light microscopists felt when they saw the detailed structure

of insects was again felt by twentieth-century scientists when they saw the complexity of the cell.²²⁶

These whole new thresholds of discovery have encouraged biologists to look into a much bigger question—how does life work. Now scientists are able with the help of much more powerful microscopes to see into much smaller components that can tell us what they look like and how they function. As often as not, these questions take one into the realm of biochemistry.²²⁷

However, it would be good to first have a look at this matter of the complexity of cells. According to Bruce Alberts, President of the National Academy of Sciences,

We have always underestimated the cell... The entire cell can be viewed as a factory that contains an elaborate network of interlocking assembly lines, each of which is composed of a set of large protein machines... Why do we call [them] machines? Precisely because, like machines invented by humans to deal efficiently with the macroscopic world, these protein assemblies contain highly coordinated moving parts.²²⁸

A typical cell takes ten million-million atoms to build. Franklin M. Harold describes a single-cell organism as a high-tech factory, complete with

Artificial languages and their decoding systems, memory banks for information storage and retrieval, elegant control systems regulating the automated assembly of parts and components, error fail-safe and proof-reading devices utilized for quality control, assembly processes involving the principle of prefabrication and modular construction ... [and] a 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.²²⁹

Michael Behe further elucidates on biological machines at the cellular level:

Life is actually based on molecular machines. They haul cargo from one place in the cell to another; they turn cellular switches on and off; they act as pulleys and cables; electrical machines let current flow through nerves; manufacturing machines build other machines; solar-powered machines capture the energy from light and store it in chemicals. Molecular machinery lets cells move, reproduce, and process food. In fact, every part of the cell's function is controlled by complex, highly calibrated machines.²³⁰

Back to the Basics and Systematic Reviews.

Darwin gave his theory a test. He stated: “If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down.”²³¹

The first modern intellectual to weigh in heavily on this challenge was geneticist Michael Denton in his book *Evolution: A Theory in Crisis*.²³² This book was to be a clarion call to many other intellectuals to have a good look at their as yet unchallenged assumptions. Denton is a British-educated biochemist, working in Australia. Denton wrote:

Neither of the two fundamental axioms of Darwin's macroevolutionary theory—the concept of the continuity of nature...and the belief that all the adaptive design of life has resulted from a blind random process—has been validated by one single empirical discovery or scientific advance since 1859.²³³

One of Denton's inspired readers was Phillip E. Johnson, a professor of Law at Berkeley University. While on a sabbatical in England from Berkeley, looking for a topic to study, he happened to find Denton's *Evolution: A Theory in Crisis* in a bookstore, side-by-side with *The Blind Watchmaker* by Richard Dawkins,²³⁴ Oxford's champion of evolution. Realizing that

two such mutually opposite views could not both be true at the same time and under the same circumstances, Johnson bought both books, devoured them and concluded that, despite Dawkins' rhetorical brilliance, Denton's reasoning was far more persuasive in arguing that macroevolution by natural selection was more mythological than empirical.²³⁵ Johnson dedicated his sabbatical year in London (1987-88) to researching the topic, developed a lengthy research paper on Darwinism and in 1988 defended this paper at a Berkeley faculty seminar. He did substantial enquiry with scientists, particularly with evolutionary scientists, and wrote in 1991 *Darwin On Trial*²³⁶ which became a bestseller. This was the first of a half-dozen or more books on this topic by Johnson. Even his most prestigious evolutionist adversaries admit that he knows very well about 99% of the science involved in these discussions.²³⁷ Johnson has since become known as "the Father of the Intelligent Design Movement," which shall be discussed later in this book.

In his books, Johnson argues convincingly that every area of relevant scientific evidence tends to falsify Darwinism rather than confirm it—and this despite all the textbooks that dogmatically state that Darwinism is a fact. Johnson decries that "metaphysical naturalism" underlies evolutionary biology and insulates it from systematic scientific questioning. This fundamentalist metaphysical naturalism serves, therefore, as an intellectual straitjacket. Johnson defines naturalism as "the belief that the universe is a 'closed system' of material causes and effects that cannot be influenced by any 'outside entity,' like God."²³⁸ Johnson, as a dedicated seeker of truth, has legitimized well-informed dissent to Darwinism. Although met on occasions with nervous skepticism by evolutionist fundamentalists, Johnson is a man of towering intellect²³⁹ who would never resort to foisting religious fundamentalism on biology students.

Another reader was biochemist Michael J. Behe, author of *Darwin's Black Box*, mentioned above. Having been brought up in a Roman Catholic school system, he had come to believe in what is called "theistic evolution," and accepted Darwinism as fundamental to science. He states that, when

studying biochemistry, he would “frequently encounter enormously complicated biological systems [and] his response was to scratch his head and say, ‘Gee, I wonder how evolution created that? Well, somebody must know!’ He always moved on, assuming someone did.” However, after being awarded his Ph.D. degree, while doing some work on DNA at the National Institutes of Health, Behe and a colleague once “were pondering what it would take for life to begin by naturalistic processes. As they enumerated the components that would be needed—proteins, a genetic code, a membrane, and so on—they looked at each other and said, “Naaaaahhhhh!” They knew there was no way life could have sprung into existence unaided. Seeds of skepticism were planted.²⁴⁰

Behe later read *Evolution: A Theory in Crisis* and was impressed by this weighty scientific critique of Darwinism. “Until then, [Behe] only knew of ‘religious nuts’ who doubted Darwin. Now, here was a thoughtful, agnostic scientist who was powerfully challenging whether Darwin’s mechanism of natural selection could really explain how life started and developed through the ages.”²⁴¹ Following his study of Denton’s work Behe started systematically scrutinizing science literature, looking carefully for coherent Darwinian explanations that he had been assuming were there. However, on the contrary, he only found “scientists describing complex, interlocking biological systems and basically saying ‘Isn’t it wonderful how natural selection put this together?’ The *how* was always missing.”²⁴² Taking all this into consideration, Behe realized that,

...as a biochemist, he was perfectly situated to investigate whether the evidence points towards Darwinism or God as the source for living organisms. If Darwinian evolution is going to work, it has to succeed at the microscopic level of amino acids, proteins, and DNA. On the other hand, if there really was a designer of the world, then his fingerprints were going to be all over the cell.²⁴³

Behe’s conclusions concerning the molecular evidence were published in his book *Darwin’s Black Box*. The *National Review* called this book one of

the most important non-fiction books of the twentieth century.²⁴⁴ David Berlinski, author of *A Tour of the Calculus*, states that “No one can propose to defend Darwin without meeting the challenges set out in this superbly written and compelling book... Behe makes an overwhelming case against Darwin on the biochemical level... For readers who have been persuaded that biologists have long since demonstrated the validity of Darwinian theory, [Behe's] observations are apt to be a source of astonishment.”²⁴⁵ As we know, Behe's challenge to Darwinism is weighty, because his case for the scientific consideration of design was built out of recent discoveries in his specialized field of biochemistry.

Behe points out that, although scientists could see cells under a microscope in Darwin's day, and could even see them divide, they did not know how the cell did these things. Their assumption was, the deeper they delved into the cell, the more simplicity they would find. But the opposite has happened. Modern science allows us to see at the level of molecules and there is magnificent complexity all the way through. They found “Black Boxes within Black Boxes, within Black Boxes.” The cell is surprisingly complicated and is operated by “micromachines” of the right shape, the right strength, and the right interactions. The existence of these machines challenges [the] test that Darwin himself provided. (See above). This was to become the basis for Behe's concept of irreducible complexity:

A system or device is irreducibly complex if it has a number of different components that all work together to accomplish the task of the system, and if you were to remove one of the components, the system would no longer function. An irreducibly complex system is highly unlikely to be build piece-by-piece through Darwinian processes, because the system must be fully present in order for it to function.²⁴⁶

In a deceptively simple-looking illustration, the mousetrap, Professor Behe shows that, for the mousetrap to work, all its essential parts must be there at the same time. “Now, if you take away any of these parts ... then it's

not like the mousetrap becomes half as efficient as it used to be or it only catches half as many mice. Instead, it doesn't catch any mice. It's broken. It doesn't work at all."²⁴⁷ The parts have to be attached to each other in the right special relationship. "An intelligent agent does that for a mousetrap. But in the cell, who tells the parts where they should go? ... Nobody. They have to do it on their own. You have to have the information resident in the system to tell the components to get together in the right orientation, otherwise, it's useless."²⁴⁸ Behe explains:

So the mousetrap does a good job of illustrating how irreducibly complex biological systems defy a Darwinian explanation. Evolution can't produce an irreducibly complex biological machine suddenly, all at once, because it is much too complicated. The odds against that would be prohibitive. And you can't produce it directly by numerous, successive, slight modifications of a precursor system, because any precursor system would be missing a part and consequently couldn't function. There would be no reason for it to exist. And natural selection chooses systems that are already working.²⁴⁹

While Behe admits that one cannot absolutely rule out all theoretical possibilities of a gradual circuitous route but, "the more complex the interacting system, the far less likely an indirect route can account for it. And as we discover more and more of these irreducibly complex biological systems, we can be more and more confident that we've met Darwin's criterion of failure."²⁵⁰

Some of Behe's critics, such as John McDonald of the University of Delaware, argue that one can build a mousetrap with fewer parts than Behe's. Behe responds that although he agrees that one can build a mousetrap with fewer parts,

the point of irreducible complexity is not that one cannot make some other system that could work in a different way with fewer parts. The point is that the trap we're considering right now needs all its parts to function. The challenge to Darwinian gradualism to get

to my trap by means of numerous, successive, slight modifications. You can't do it. Besides, you're using your intelligence as you try. Remember, the audacious claim of Darwinian evolution is that it can put together complex systems with no intelligence at all.²⁵¹

Another critic, Kenneth Miller of Brown University, came up with the idea that perhaps an irreducibly complex system could develop gradually over time because each of its components could have another function that natural selection would preserve on the way toward developing a more complex machine.²⁵² To this, Behe responds that

the issue remains—can you use numerous, slight, successive modifications to get from those other functions to where we are? ... The question for evolutionists is to start with a less complex system and build a more complex system. Even if every component could theoretically have a useful function prior to its assembly into the mousetrap, you still have the problem of how the mousetrap becomes assembled. ... If you just had the components themselves without the ability to bring the other pieces into position, you would be far from having a functioning mousetrap.²⁵³

Nobody ever addresses in the evolutionary literature how, in molecular machines, components have portions of their shape that are complementary to each other, so they connect with each other in the right way. A positive charge can attract a negative charge, and an oily region can attract another oily region, etc. So, to use the mousetrap as an analogy, one end of the spring would have to have a certain shape or magnetism that just happened to attract and fit with another component of the trap. They would all have to fit together that way until you had the whole trap assembled by itself. "If you do any calculations about how likely this could occur by itself, you find it's very improbable. Even with small machines, you wouldn't expect them to self-assemble during the entire lifetime of the earth. That's a severe problem that evolutionists don't like to address."²⁵⁴

The Cilium: A specimen illustrating irreducibly complex cellular systems. Behe cites the case of the cilium. Cilia are whiplike hairs on the surface of cells, one example of which are the cilia on the cells in our throats. Cilia have multiple uses, one of them being, for example, to help eliminate foreign particles from the throat. The cilia also assist in mobility of mobile cells. Under a light microscope, they look like little hairs but, thanks to electron microscopy, we now know they are complex molecular machines that are able to beat back-and-forth because they are comprised of some two hundred protein parts. Behe's simplified explanation of how it works is as follows:

There are nine pairs of microtubules, which are long, thin, flexible rods, which encircle two single microtubules. The outer microtubules are connected to each other by ... nexin linkers. And each microtubule has a motor protein called dynein. The motor protein attaches to one microtubule and has an arm that reaches over, grabs the other one, and pushes it down. So the two rods start to slide lengthwise with respect to each other. As they start to slide, the nexin linkers, which were originally like loose rope, get stretched and become taut. As the dynein pushes farther and farther, it starts to bend the apparatus; then it pushes the other way and bends it back. That's how you get the rowing motion... But this does not begin to do justice to the complexity of the cilium... The rods, linkers, and motors, are necessary to convert a sliding motion into a bending motion so the cilium can move. If it weren't for the linkers, everything would fall apart when the sliding motion began. If it weren't for the motor protein, it wouldn't move at all. If it weren't for the rods, there would be nothing to move. So, like the mousetrap, the cilium is irreducibly complex... You only get the motion of the cilium when you've got everything together. None of the individual parts can do the trick by themselves. You need to have them all in place. For evolution to account for that, you would have to imagine how this could develop gradually—but nobody has been able to do that.²⁵⁵

When queried by Lee Strobel as to whether microtubules were used in the structure of primitive cells, or formed the cellular highways along which the motor proteins moved material within the cell, Behe answered that

a motor protein that had been transporting cargo along a cellular highway might not have the strength necessary to push two microtubules relative to each other. A nexin linker would have to be exactly the right size before it was useful at all. Creating the cilium inside the cell would be counter-productive; it would need to extend from the cell. The necessary components would have to come together at the right place and at the right time, even assuming they were all pre-existing in the cell. In the cell, the mutation rate is extremely low. How long would it take...? It would take...a prohibitive amount of time...even to get three proteins together.²⁵⁶

If one adds to this that very few of the proteins in cilia, and elsewhere, such as in simple yeast cells, function alone, but rather normally as specific complexes of several proteins—from three up to fifty, this all argues compellingly against random chance arrangements.

One objection raised to Behe's argument is that some cilia have fewer components and thus casts doubt on the irreducibly complex argument. Behe responds to that:

If you could point to a series of less complex structures that progress from one to the other in order to create the cilia I've described, then, yes, that would refute me. But that isn't the case ... The cilium has got some redundant components. You can take one of the microtubules away and it will still function, though maybe not as well. But evolution does not start with the complicated...cilium and take parts away; it has to build things up from the bottom. And all cilia have the three critical components... There have been experiments where scientists have removed one of the three and the cilium doesn't work. It's broken—just like if you'd expect it to be, since it's an irreducibly complex machine.²⁵⁷

Flagellum.

Even more illustrative of irreducible complexity is the flagellum's ultra-efficient "rotary propeller." The bacterial "flagellum" (from the Latin word for whip), has a kind of cilium that, instead of "rowing" the cell, works as it were an extremely efficient rotary propeller. This propeller is made from

a protein called flagellin. This is attached to a drive shaft by hook protein, which acts as a universal joint, allowing the propeller and drive shaft to rotate freely. Several types of proteins act as bushing material to allow the drive shaft to penetrate the bacterial wall and attach to the rotary motor.²⁵⁸

While other biological systems that generate movement, like muscles, uses energy that have been stored in a 'carrier molecule,' the flagellum uses energy generated by a flow of acid through the bacterial membrane. So efficient is this system that the flagellum's propeller can spin at ten thousand revolutions per minute. As Lee Strobel points out, some of the best state-of-the-art automobiles have a redline of only 9,000 rpm. Incredibly, the flagellum's propeller can stop spinning within a quarter turn and immediately start spinning in the reverse direction at 10,000 rpm. Harvard University's Howard Berg has called the flagellum "the most efficient motor in the universe... way beyond anything we can make, especially when you consider its size."²⁵⁹ To give an idea of the size,

a flagellum is on the order of a couple of microns. A micron is about 1/20,000 of an inch. Most of its length is the propeller. The motor itself would be maybe 1/100,000th of an inch. Even with all of our technology, we can't even begin to create something like this. ... It looks like something from NASA. If you think about it, we're discovered machines inside ourselves. On Star Trek, they had a creature called the Borg, which has tiny machines inside. Well, it turns out everybody does!²⁶⁰

Another remarkable thing about the flagellum is that it has guidance sensory systems that tell it when to turn on or off, and guides it to light, or food, or to avoid obstacles.

What is so very remarkable about the flagellum is that it looks very much like a machine that man would devise and build, like an outboard motor for a boat, but complete with a remote guidance system. It is irreducibly complex because some thirty-five proteins are needed to create a healthy flagellum. Behe argues:

At a minimum, you need at least three parts—a paddle, a rotor and a motor—that are made up of various proteins. Eliminate one of those parts and you don't get a flagellum that only spins at five thousand rpms; you get a flagellum that simply doesn't work at all. So it's irreducibly complex—and a huge stumbling block to Darwinian theory.²⁶¹

Darwinists can only say that the flagellum has components that look like components of other simpler systems, so there might be a relationship. They can offer no ideas where this system or subsystem originated to evolve into a flagellum. To argue that these systems evolved gradually, so that the complex components would match each other precisely is, in terms of mathematical probabilities, very far-fetched indeed. To think that science will, over time, explain how this could have happened gradually is not a foregone conclusion. It takes intelligence to create components and integrate complex working systems. It even takes considerable intelligence to discover and describe adequately the ever-increasing amount of inter-dependent complexity in sub-microscopic systems. Recognizing that Darwinism holds that things build up from the simple to the more complex, the increasing complexity scientists are finding at the microbiological level puts Darwinism in the position of needing to provide reasoned explanations that Darwinists are simply not able to come up with, not even in principle.

Intra-Cellular Transport Systems.

Behe's considered view is that there are other discoveries in the cell that demonstrate how inadequately simplistic Darwinian views are for explaining the irreducible complexities found therein. To illustrate, he states that, in eukaryotic cells (all cells except bacteriae) there are a number of compartments, or "rooms:"

There's the nucleus, where the DNA resides; the mitochondria, which produce energy; the endoplasmic reticulum, which processes proteins; the Golgi apparatus, which is a way-station for proteins that are being transported elsewhere; the lysosome, which is a garbage disposal unit; secretory vesicles, which store cargo before it's sent out of the cell; and the peroxisome, which helps metabolize fats. Each compartment is sealed off by a membrane, just like a room has walls and a door. In fact, the mitochondrion has four separate sections. Counting everything, there are more than twenty different sections in each cell. Cells are constantly getting rid of old stuff and manufacturing new components, and these components are designed to work in one room but not others. Most new components are made at a central location in the cell on things called ribosomes.²⁶²

The ribosomes are remarkable things also, a collection of some fifty large molecules containing more than one million atoms, working as an automated factory that can synthesize any protein that it is instructed to produce by DNA. When given the correct genetic information, it can construct any protein-based biological machine, including another ribosome, regardless of the complexity, and can do all this in a matter of minutes. Most surprisingly, ribosome is several thousand million-million times smaller than the smallest machine constructed by man.²⁶³

Thereafter comes another new appreciation of the order of complexity at these sub-microscopic cellular levels. Once you find the ribosomes producing new components, there has to be a way to get them to the

exact, right “room” in the cell, in which they can operate. This is where Behe observes what is analogous to enclosed motorized molecular trucks that have tiny highways to travel along. Furthermore, there are systems identifying what components are to go in which trucks. There are “signals” attached to the protein to enable the protein to be hauled by the right molecular truck. The “truck” has to have a signal enabling it to match up to the right compartment into which it must discharge its cargo. Then there is another “gangplank” of sorts, that allows only the right component to be offloaded into the right compartment. Other components are needed to allow for recognition of one another, opening the compartments, and allowing the right component to enter in. Lacking any of these numerous components for signaling, hauling, offloading, opening, sliding into the right compartment, closing it afterwards, systems would malfunction.²⁶⁴

If we, in our modern world, recognize the brilliance and design of systems for: airlines, bus and truck transport, train systems, space travel, maritime shipping, and sea containers, packaging, communications systems of signaling and bar codes could not ever happen by pure random chance, we must ask ourselves how it is at all credible, plausible, or even conceivable, that even greater levels of design, transmission and efficient rational interdependence now observable at the submicroscopic level, could come about by random chance, progressing from the vastly simpler to the ever increasingly complex. True science must concern itself with explanatory power of the observable, the *how* of the matter. It is no longer adequately intellectually satisfying to have our professional scientists simply recite a mantra that “random chance evolution made this happen somehow and we will undoubtedly find this out one day.” The mathematical probabilities of this coming about in such an unplanned and unintelligent way are null. And, as the biochemists know, the degree of complexity does not diminish as science progresses. It can only get more complicated and 19th century Darwinian simplicity simply is inadequate to explain these “stubborn factual” discoveries of irreducible complexity in modern systematic science. But the irreducible complexity is present in other biological systems, of course.

The Example of Blood Clotting.

Blood clotting saves our lives regularly, because it makes the blood clot in the right amounts in the right place, and at the precisely right time. But it is an extremely complex operation involved in “a highly choreographed cascade of ten steps that use about twenty different molecular components. Without the whole system in place, it doesn’t work.”²⁶⁵ This system calls for a great deal of regulation. Otherwise, a clot in the wrong place, such as the lung, brain, or heart, can cause irreparable damage and death. If the clotting happens at the wrong time, the person dies; or the wrong place; or if the clotting does not seamlessly cover the entire length of the cut. Behe points out: “To create a perfectly balanced blood-clotting system, clusters of protein components have to be inserted all at once. That rules out a gradualistic Darwinian approach...”²⁶⁶

Lee Strobel questioned Behe concerning the possibility of a process of “gene duplication,” which might account for creation of new components for complex biological systems, such as blood clotting. Gene duplication “... can happen during the process of cell division when DNA is being copied from the original cell for use in the new cell. Occasionally, the process goes awry and a piece of DNA, perhaps a gene, is copied twice. This creates an extra gene. While the original gene can go about its pre-assigned role, the extra gene can drift and perhaps create a new function. Some scientists have theorized that this is how new components might be created for irreducible systems.”²⁶⁷

To this, Behe answered that when you get a duplicated gene, you don’t get a new protein with new properties. You get the same protein as before, which is a problem for the proponents of this theory.

There is a conceptual disconnect in the sense that you would now have, to continue with the mousetrap analogy, ...two metal springs, not a metal spring with a wooden base. To have gene duplication developing a step-by-step scenario of how blood-clotting could have developed ... over time, when in the meantime the animal

has no effective way to stop from bleeding to death whenever it's cut...and when you've only got part of a system in place and the system does not {yet} work, ... {while} you've got the components sitting around doing nothing—and natural selection only works if there is something useful right now, not in the future”²⁶⁸

Another fundamental flaw in the Darwinist position is that science is supposed to back up its theories with formal experimentation to demonstrate how their theory can be true. To date, according to Behe, nobody has done experiments to show how blood-clotting could have developed gradually, or how a duplicated gene can develop a new function capable of making a new and irreducibly complex pathway.

The Stanley Miller Experiment: Creating the Building Blocks of Life.

There has been speculation about prebiological evolution ever since Darwin's *Origin of Species* was popularized and started making an impact. “Prebiological” evolution means chemical evolution, which seeks to explain how life first evolved from non-living chemicals. As noted above, Darwin wrote in an 1871 letter:

It is often said that all the conditions for the first production of a living organism are new present, which could ever have been present. But if (and oh! What a big if!) We could conceive in some warm little pond, with all sorts of ammonia and phosphoric salts, lights, heat, electricity, etc., present, that a protein compound was chemically formed ready to undergo still more complex changes, at the present day such matter would be instantly devoured or absorbed, which would not have been the case before living creatures were formed.²⁶⁹

Scientists use the term “evolution” to include biological and prebiological chemical evolution as one major part of a grand naturalistic project, which seeks to explain the origin of everything from “the Big Bang” to

the present without allowing any role for the Creator. “If Darwinists are to keep the Creator out of the picture, they have to provide a naturalistic explanation for the origin of life.”²⁷⁰ As Johnson points out, the evidence for prebiological evolution is even more difficult to produce than is the evidence for biological evolution:

A Darwinist can imagine that a mutant rodent might appear with a web between its toes, and thereby gain some advantage in the struggle for survival, with the result that the new characteristic could spread through the population to await the arrival of further mutations leading eventually to winged flight. The trouble is that the scenario depends upon the rodent having offspring that inherit the mutant characteristic, and chemicals do not produce offspring. The challenge of chemical evolution is to find a way to get some chemical combination to the point where reproduction and selection could get started.²⁷¹

But the temptation to create evidence was irresistible and thus the famous Stanley Miller experiment took place in 1953 in the laboratories of the University of Chicago, under the supervision of his doctoral advisor, Nobel laureate Harold Urey. It was the subject of considerable media hype that year—I was 11 years old and wondered what the final word would be on this scientific enquiry that claimed to create the “building blocks of life.” In fact, it was such a splash that, according to R.O. Muncaster, it was still contained in many textbooks in 1997.²⁷² Let us have a look at what was done, and what were the true achievements of this experiment:

Stanley Miller obtained small amounts of two amino acids by sending a spark through a mixture of gases thought to simulate the atmosphere of the early earth. Because amino acids are used in building proteins, they are sometimes called the “building blocks of life.” Subsequent experiments based on the Miller-Urey model produced a variety of amino acids and other complex compounds employed in the genetic process, with the result that the more

optimistic researchers concluded that the chemicals needed to construct life could have been present in sufficient abundance on the early earth.²⁷³

It is noteworthy that this Miller-Urey experiment was undertaken to validate a theoretical model proposed by Alexander Oparin and J.B.S. Haldane some thirty years earlier, in the 1920s. The Oparin-Haldane model postulated:

1. that the early earth had a “reducing” atmosphere made up of gases like methane, hydrogen and ammonia, with little or no free oxygen.
2. into this atmosphere came various forms of energy, like the electric sparks in the Miller-Urey apparatus, forming the essential organic compounds.
3. in Haldane’s words, these compounds “must have accumulated until the primitive oceans reached the consistency of hot diluted soup.”
4. Haldane’s metaphor caught the journalistic imagination, and “prebiotic soup” has become an element of scientific folklore, presented to the public in books and museum exhibits as the known source of early life; the fourth element in the theory was the most important and also the most mysterious: somehow life emerged from the prebiotic soup.²⁷⁴

We must bear in mind that, at that moment in history, along with the entrance of the international scientific community into whole new and/or improved fields such as: atomic energy; computer technology; greater microscopic and telescopic capabilities; expanded medical technology; television; jet and space travel; it seemed that we had entered into a “Brave New World.”

Much has happened since then. But let us look first at where the Miller-Urey experiment has gotten the scientific community. “Miller had chosen a hydrogen-rich mixture of methane, ammonia, and water vapor, which was consistent with what many scientists thought back then. But scientists don’t believe that anymore.” As early as the 1960s, a geophysicist with the

Carnegie Institution said: "What is the evidence for a primitive methane-ammonia atmosphere on earth? The answer is that there is no evidence for it, but much against it."²⁷⁵

By the mid-1970s, Belgian biochemist Marcel Florin was declaring that the concept behind Miller's theory of the early atmosphere 'has been abandoned.'²⁷⁶ By the 1980s, there was a whole reassessment that called into question all four elements in the Oparin-Haldane scenario. There is reason to believe that the atmosphere of the early earth was not at all "of the strongly reducing nature required for the Miller-Urey apparatus to give the desired results."²⁷⁷

Even under ideal and probably unrealistic conditions, the experiments failed to produce some of the necessary chemical components of life. Perhaps the most discouraging criticism has come from chemists, who have spoiled the "prebiotic soup" by showing that organic compounds produced on the early earth would be subject to chemical reactions making them unsuitable for constructing life. In all probability, the prebiotic soup could never have existed, and without it there is no reason to believe that the production of small amounts of some amino acids by electrical charge in a reducing atmosphere had anything to do with the origin of life.²⁷⁸

Two of the leading origin-of-life researchers, Klaus Dose and Sidney Fox, confirmed that Miller had used the wrong gas mixture. *Science* magazine said in 1995 that experts now dismiss Miller's experiment because 'the early atmosphere looked nothing like the Miller-Urey simulation.'²⁷⁹

Phillip Johnson takes the point a bit further. Supposing that all the required chemical components were present on the early earth,

That still leaves us at a dead end because there is no reason to believe that life has a tendency to emerge when the right chemicals are sloshing about in a soup. Although some components of living systems can be duplicated with very advanced techniques, scientists employing the full power of their intelligence cannot manufacture

living organisms from amino acids, sugars and the like. How, then, was the trick done before scientific intelligence was in existence?²⁸⁰

In discussing what could have evolved in the more likely scenario of an early atmosphere comprised on carbon dioxide, nitrogen and water vapor, some textbooks still postulate that you still get organic molecules. But does that solve the problem? Could they possibly be precursors to life? Wells says, "What you would get are formaldehyde, and cyanide....But to suggest that formaldehyde and cyanide give you the right substrate for the origin of life! Do you know what you get? Embalming fluid!"²⁸¹

Did Amino Acids Come to Earth in a Comet, or Some Other Way?

As far-fetched as this argument is, one must still answer it. Although there is no evidence yet of even any very far-off planet from whence they might theoretically have come to earth, in the event that they did somehow arrive to earth, there would still be the formidable task of getting the amino acids to link up in very complex and specific sequences to create a protein molecule.

And that would still be a long way from a living cell...Then you would need dozens of protein molecules, again in the right sequence, to create a living cell. The odds against this are astonishing. The gap between non-living chemicals and even the most primitive living organism is absolutely tremendous...The problem of assembling the right parts in the right way at the right time and place, while keeping out the wrong material, is simply insurmountable. "Frankly," says Wells, "the idea that we are on the verge of explaining the origin of life naturalistically is just silly to me."²⁸²

RNA World.

Another popular theory was that RNA, a close relation of DNA, could have been a molecular cradle from which early cells developed. Phillip Johnson tackles this argument in this way:

The simplest organism capable of independent life, the prokaryote bacterial cell, is a masterpiece of miniaturized complexity, which makes a spaceship, seems rather low-tech. Even if one assumes that something much simpler than a bacterial cell might suffice to start Darwinist evolution on its way—a DNA or RNA macro-molecules, for example—the possibility that such a complex entity could assemble itself by chance is still fantastically unlikely, even if billions of years had been available. ... Chance assembly is just a naturalistic way of saying “miracle.”²⁸³

Contemporary scientists know that organisms, DNA, RNA, and proteins are mutually interdependent, with DNA storing the genetic information and copying it to RNA, RNA directing the synthesis of proteins, and proteins carrying on the essential chemical work of the cell. And, as Phillip Johnson points out,

An evolutionary scenario must assume that this complex system evolved from a much simpler predecessor, probably employing at first only one of the three major constituents. Which came first, the nucleic acids (DNA or RNA) or the proteins? And how did the first living molecule function and evolve in the absence of the others? These questions define the agenda for the field of chemical evolution where several scenarios are competing for attention... There is widespread agreement that no theory has obtained any substantial experimental confirmation. ...*Conceivable* is a long way from *probable* or *experimentally verifiable*, of course.... There is no evidence that Darwinian selection is a sufficiently powerful designing force to transform a molecule or a cell into an abundance of complex plants and animals, even given a few billion years...²⁸⁴

The obstacles to prebiotic RNA synthesis were reviewed in 1989 by G.F. Joyce in *Nature* magazine: “[RNA] is not a plausible prebiotic molecule, because it is unlikely to have been produced in significant quantities on the primitive earth.” Concludes Johnson, “As with other once-promising models of prebiological evolution, the ‘RNA-first’ theory cannot survive detailed examination.”²⁸⁵

Mineral Origins of Life.

A.G. Cairns-Smith, the author of *Seven Clues to the Origin of Life*, argues that perhaps clay crystals might have qualities that could make their combination into a form of pre-organic mineral life. In brief, Biochemist Klaus Dose answers that “this thesis is beyond the comprehension of all biochemists or molecular biologists who are daily confronted with the experimental facts of life.”²⁸⁶

Other Origins of Life Theories.

There are a variety of other theories advanced by scientists to account for how the first living cell could have been naturalistically generated. They would include: random chance, chemical affinity, self-ordering tendencies, seeding from space, deep-sea ocean vents, and using clay to encourage prebiotic chemicals. I have enjoyed reading numerous accounts of each of these for many hours, and also accounts of their rebuttals. For the sake of brevity, I will first quote Dr. Gregg Easterbrook: “No generally accepted theory exists, and the steps leading from a barren primordial world to the fragile chemistry of life seem imponderable.”²⁸⁷

Lee Strobel also quotes Professor Walter Bradley, a co-author of the monumental book *The Mystery of Life's Origin*,²⁸⁸ who studied each of these in great detail and concluded that not one can withstand scientific scrutiny. “The mind-boggling difficulties in bridging the yawning gap between nonlife and life mean that there may very well be no potential of ever finding a theory for how life could have arisen spontaneously.” That is why he is convinced that the absolutely overwhelming evidence points toward an

intelligence behind life's creation, and that "...people who believe that life emerged naturalistically need to have a great deal more faith than people who reasonably infer that there's an intelligent designer."²⁸⁹

"Directed Panspermia."

Francis Crick was a crusading skeptic. This proactive attitude led him to enter a professional field where he could contribute mightily to this cause—microbiology, where he distinguished himself by becoming the co-discoverer of the molecular structure of DNA, for which he was awarded the Nobel Prize. He understood the colossal complexity of cellular life, and the enormous difficulties of explaining how this life could have evolved in the time available on earth. He said, "An honest man, armed with all the knowledge available to us now, could only state that, in some sense, the origin of life appears at the moment to be almost a miracle, so many are the conditions which would have had to have been satisfied to get it going."²⁹⁰

So he came up with "Directed Panspermia," a new variant on the old *deus ex machina* routine employed in ancient Greek theatre: only this time, it was more like a *deus ex nave extraterrestra*—the answer came out of an unmanned spaceship, way, way back in time. Because of the modern appreciation of the huge distances to be covered by the fastest imaginable spaceship—and the scientific improbability of it not disintegrating *en route*, Crick speculated that: "an advanced extraterrestrial civilization, possibly facing extinction, sent primitive life forms to earth in a spaceship. The spaceship builders couldn't come themselves because of the enormous time required for interstellar travel; so they sent bacteria capable of surviving the voyage and severe conditions that would have greeted them upon arrival on the early earth."²⁹¹ "If true," says P.E. Johnson,

...we should expect that cellular microorganisms would appear suddenly, without evidence that any simpler forms preceded them. We should also expect to find that the early forms were distantly related but highly distinct, with no evidence of ancestors because these existed only on the original planet. This expectation fits the

facts perfectly, because the archaebacteria and eubacteria are at the same time too different to have evolved from a common ancestor in the time available, and yet also too similar (sharing the same genetic language) not to have a common source somewhere.²⁹²

Johnson's following remark shows that a straight-faced law professor like himself can employ a left-handed compliment with the finesse of a Dubliner: "Those who are tempted to ridicule '*directed panspermia*' should restrain themselves, because Crick's extraterrestrials are no more invisible than the universe of ancestors that earth-bound Darwinists have to invoke."²⁹³

Crick was obviously one of the great men of science of our time; yet he seems to resort to an explanation so unwarranted and so far-fetched as to be called silly, in order to avoid the mere possibility that the origin of life might ever be owed to an intelligent designer. He would apparently prefer, in the very name of science, to postulate an argument of unproven extraterrestrials from a far-distant planet that could never be inspected. This is one argument that could of course never be falsified; there is no evidence whatsoever. This theory is advanced as a sort of special "infallible revelation" that is exempt from all reasonable enquiry and criticisms. Johnson remarks: "When a scientist of Crick's caliber feels he has to invoke undetectable spacemen, it is time to consider whether the field of prebiological evolution has come to a dead end."²⁹⁴ This calls for a greater "leap of faith" than any faith in a supernatural intelligent deity who has revealed Himself to man.

The evolutionists' view of life is that it is matter evolving by natural selection and thus one can be certain of finding an evolutionary explanation for its origin. If Darwin was "on target" in 1859 in his explanation of how complex life forms can evolve from a single microorganism, then our modern Neo-Darwinists should presumably be in a much better position to prove this scientifically. However, they cannot. Instead of having simplified the problem with well-founded explanatory power, they are obfuscating matters. This is because the mindless natural selection they speculate about cannot, even in principle, have the extraordinary

creative and rational organizational power it would need to have in order to achieve rational, programmed order in the smallest cell, much less in the cosmos. This being the case, "...prebiological science has misconceived the problem, and its efforts are as doomed to futility as the efforts of medieval alchemists to transform lead into gold."²⁹⁵

One has to look beyond the concrete realm of pure matter to find the source of intelligence and communication of genetic information. It simply cannot be the other way around. Matter can be—and is—a product of intelligence; it cannot be the other way around. Once this plateau can again be reached by our scientists, they can get back to their real task of finding the languages in which genetic information is transmitted and, in general, finding out how the material universe works. This is the topic for our following chapter.

Chapter 7: Biological Information's Challenge to Darwinism

According to George Sim Johnson, “human DNA contains more organized information than the Encyclopedia Britannica. If the full text of the encyclopedia were to arrive in computer code from outer space, most people would regard this as proof of the existence of extraterrestrial intelligence. But, when seen in nature, it is explained as the workings of random forces.”²⁹⁶

Since the 1953 discovery by Francis Crick and James D. Watson of the double helix of deoxyribonucleic acid, where the “language of life” is stored, scientists have marveled at “the six feet of DNA that is tightly coiled inside ever one of our body’s one hundred trillion cells...at how it provides the genetic information necessary to create all the proteins out of which our bodies are built. In fact, each one of the 30,000 genes that are imbedded in our 23 pairs of chromosomes can yield as many as 20,500 kinds of proteins.”²⁹⁷

The discovery of the human genome, and its decoding, was hailed with a White House ceremony and great publicity. The Director of the National Human Genome Research Institute, Dr. Francis Collins, who is an Evangelical Christian,²⁹⁸ stated: “We have caught the first glimpses of our instruction book previously known only to God.” These scientists had announced they had finally mapped the three billion codes of the human genome, a project that filled the equivalent of 75,490 pages of *The New*

York Times. President Bill Clinton then remarked, "Today we are learning the language in which God created life."²⁹⁹

It is absolutely breathtaking to learn of the capacity of these microscopic DNA molecules to store information by properly combining these four "chemical letters" {adenine (A), thymine (T), cytosine (C) and guanine (G)}, which combine in various sequences to spell out a message. The discovery of this chemical code means we can now apply the categories of information theory to DNA. "What has happened is that genetics has become a branch of information technology," writes Dawkins. The genetic code is truly digital, in exactly the same sense as computer codes. This is not some vague analogy; it is the literal truth."³⁰⁰

DNA serves as the "information storehouse" for a precisely orchestrated process of manufacturing that requires that the exactly right amino acids are "linked together with the right bonds in the right sequence to produce the right kind of proteins that fold in the right way to build biological systems."³⁰¹ Lee Strobel quotes the PBS documentary, *Unlocking the Mystery of Life*, which tries to describe this intricate operation:

In a process known as transcription, a molecular machine first unwinds a section of the DNA helix to expose the genetic instructions needed to assemble a specific protein molecule. Another machine then copies these instructions to form a molecule known as Messenger RNA. When transcription is complete, the slender RNA strand carries the genetic information...out of the cell nucleus. The messenger RNA strand is directed to a two-part molecular factory called a ribosome...Inside the ribosome, a molecular assembly line builds a specifically sequenced chain of amino acids. These amino acids are transported from other parts of the cell and then linked into chains often hundreds of units long. Their sequential arrangement determines the type of protein manufactured. When the chain is finished, it is moved from the ribosome to a barrel-shaped machine that helps fold it into the precise shape critical to its function. After the chain is folded into

a protein, it is then released and shepherded by another molecular machine to the exact location where it is needed.³⁰²

To illustrate the highly complex and specific aspects of what goes into the development of the protein chains that are part of DNA, and of RNA, consider the following:

- ✦ Amino acids selected must have the correct orientation, either right or left-handed.
- ✦ Life specific amino acids must be sorted, with incorrect ones rejected.
- ✦ Correct amino acids are bonded into short chains.
- ✦ Hundreds of short chains are bonded to specific length.
- ✦ Chains with “sensible” order/instructions selected, having no random “noise.”³⁰³

Muncaster quotes Harold Morowitz who estimated the probability of all these steps randomly occurring for the simplest living cell to be 1 in $10^{100,000,000,000}$...like winning 1.4 million consecutive lotteries.³⁰⁴

Further describing the degree of complexity in producing DNA, Muncaster points out what is involved in Chirality (right-left handedness).

All amino acids are either right-handed or left-handed. To survive, a DNA chain must be made up of hundreds of “pure” left-handed amino acids (capable of bonding to a different chain of “pure” right-handed nucleotides-protein enzymes.) A single error in either chain makes it useless. Yet attempts to produce amino acids always result in equal proportions of right/left kinds...So random selection of only the right-handed ones is virtually impossible. No method of correctly separating orientation has been found.³⁰⁵

We have seen earlier that the efforts to artificially create the amino acids, the building blocks of life was very complicated because oxygen destroys the chemical building blocks of life, whether on land or under water. For this

reason, evolutionists speculated that the early atmosphere was oxygen-free. But, as Muncaster argues,

...had this been the case, there would have been no protective ozone layer either. Any DNA or RNA bounds would have been destroyed by Ultra-Violet radiation. Furthermore, whenever a nucleotide is added to the construction of a DNA molecule, a molecule of water is released. This process is reversible. In chemistry a reaction will not naturally proceed in a direction that produces a product already in abundance. Because water is produced, it would be impossible for DNA to form in water, as proposed by “ocean-vent” or primordial soup theories...Tar is the major bi-product {by far} in all experiments producing simple amino acids. Tar would be deadly to proper functioning of DNA/RNA.³⁰⁶

So stunning have these discoveries been to scientists that some of the most articulate and intelligent among them frankly abandoned evolution, based as it is on natural selection and random chance, and accept that there is extraordinarily complex design in the universe, visible now from the advanced microscopic to telescopic levels. One case in point is the celebrated author of books on evolution, Anthony Flew. Flew, in 2003 at age 81, told Gary Habermas that he, Flew, who is the son of a Methodist Minister but had abandoned Christianity at age 15, was so impressed with the very great complexity of information in DNA, that he returned to the position of design and of being a theist. While this is not everything we would hope for Dr. Flew, he had the intellectual honesty to admit to design when he observed it in all its splendor in DNA, rather than doing what some other scientists are doing—making the undeniable scientific observations of design subservient to their materialistic philosophical worldview.³⁰⁷

Another scientist and author, biology professor Dean Kenyon, was equally moved “...to repudiate the conclusions of his own book on the chemical origin of life and conclude instead that nothing short of an intelligence could have created this intricate cellular apparatus. “This new realm of

molecular genetics {is} where we see the most compelling evidence of design on the Earth.”³⁰⁸

Geneticist Michael Denton remarks about this microscopic DNA to enclose this colossal mountain of information, carefully spelled out in its four-letter chemical alphabet,

...vastly exceeds that of any other known system. The information needed to build the proteins for all the species of organisms that have ever lived—a number estimated to be approximately one hundred million—could be held in a teaspoon and there would still be room left for all the information in every book ever written.³⁰⁹

Bernd-Olaf Küppers, the author of *Information and the Origin of Life*, argues that “the problem of the origin of life is clearly basically equivalent to the problem of the origin of biological information.”³¹⁰ Dr. Stephen C. Meyer commented on this to Lee Strobel. Meyer’s Master of Science work from Cambridge University concentrated on the history of molecular biology and evolutionary theory. He then continued, getting his doctorate from Cambridge, working in analyses of scientific and methodological issues in origin-of-life biology. Meyers points out:

When I ask students what they would need to get their computer to perform a new function they reply, “you need to give it a new line of code.” The same principle is true in living organisms.

If you want an organism to acquire a new function or structure, you have to provide information somewhere in the cell. You need instructions for how to build the cell’s important components, which are mostly proteins. And we know that DNA is the repository for a digital code containing the instructions for telling the cell’s machinery how to build proteins. Küppers recognized that this was a critical hurdle in explaining how life began: where did this genetic information come from?

Think of making soup from a recipe. You can have all the ingredients on hand, but if you don't know the proper proportions, or which items to add in what order, or how long to cook the concoction, you won't get a soup that tastes very good.

Well, a lot of people talk about the “prebiotic soup”—the chemicals that supposedly existed on the primitive Earth prior to life. Even if you had the right chemicals to create a living cell, you would also need information for how to arrange them in very specific configurations in order to perform biological functions. Ever since the 1950s and 1960s, biologists have recognized that the cell's critical functions are usually performed by proteins, and proteins are the product of assembly instructions stored in DNA.³¹¹

The DNA stores information in the four-character digital code, and depending on their arrangement, they will instruct the cell to build different sequences of amino acids, which are the building blocks of proteins. Says Meyers,

The protein is a long linear array of amino acids. Because of the forces between the amino acids, the proteins fold into very particular three-dimensional shapes. These shapes are highly irregular, like the teeth in a key, and they have a lock-key fit with other molecules in the cell. Often, the proteins will catalyze reactions, or they'll form structural molecules, or linkers, or parts of the molecular machines... This specific three-dimensional shape, which allows proteins to perform a function, derives directly from the one-dimensional sequencing of amino acids.³¹²

If one were to begin rearranging the order of the characters in the array, the force interactions would change, the proteins would fold into another combination of force interactions and the protein would fold completely differently, or would not fold at all, and the sequence of amino acids would be unable to serve its function.

Meyers also points out that:

Proteins ... are the key functional molecule in the cell; you can't have life without them. Where do they come from? Well, that question forces a deeper issue—what's the source of the assembly instructions in DNA that are responsible for the one-dimensional sequential arrangement of amino acids that create the three-dimensional shapes of proteins? Ultimately, ...the functional attributes of proteins derive from information stored in the DNA molecule...[DNA] builds the protein molecules, but they are only sub-units of a larger structure that themselves are informatively arranged...DNA is ... like a library. The organism accesses the information that it needs from DNA so it can build some of its critical components. And the library analogy is better [than the blueprint] because of its alphabetic nature. In DNA, there are long lines of A,C,G, and T's that are precisely arranged in order to create protein structures and folding. To build one protein, you typically need 1,200 to 2,000 letters or bases—which is a lot of information.³¹³

It is at this point, insists Meyers, that “all naturalistic accounts of the origin of life ... break down, because it is the critical and foundational question. If you can't explain where the information comes from, you haven't explained life, because it is the information that makes the molecules into something that actually functions.”³¹⁴ Because DNA is more complex than any computer program that has ever been devised, this can best be explained by the activity of an intelligent agent, and not at all by natural selection, random chance and necessity. The creation of new information is usually associated with conscious activity.³¹⁵

To understand how the origin of information and life happened in the prehistoric past, one uses a scientific principle called *uniformitarianism*, which holds that our present knowledge of cause-and-effect relationships should guide our reconstruction of what caused something to arise in the

past. Looking at studies of cells, or findings in the fossil evidence, this requires information that is stored in DNA or some other information carrier. Since we know from experience that information is habitually associated with conscious activity, we can, by using uniformitarian logic, reconstruct the cause of that ancient information in the first cell as being the product of intelligence.³¹⁶

The question arises, is this explanation of the origins of life and information the best explanation, or might there be some other possible better explanation? For example, the proponents of Darwinism hold that origins of life happened in the early Earth by pure chance chemical synthetic processes. Over millions of years, the combinations of the organic compounds into macromolecules, proteins and nucleic acids which were endowed finally with the property of self-reproduction, and they finally evolved into the first simple cell system. But more advanced science now recognizes that the “prebiotic soup” that has been the basis for most origin-of-life evolutionary theories is without any foundation. If it had ever existed, it “would have been rich in amino acids, that calls for lots of nitrogen. But scientists have been unable to come up with nitrogen-rich minerals in the earliest sediments of the Earth, only some 0.015%. Back in 1985, Jim Brook said in *Origins of Life*: ‘From this we can be reasonably certain that there never was any substantial amount of prebiotic soup on Earth when pre-Cambrian sediments were formed. If such a soup ever existed, it was only for a brief period of time.’”³¹⁷

Furthermore, if amino acids had ever come about in a “prebiotic soup,” they would have suffered cross-reactions with other chemicals, a great barrier to the formation of life. Care was taken in the Stanley Miller experiment to prevent reacting with the other chemicals in the chamber, but they were not just simulating a natural process. They interfered in order to get the outcome they wanted. All those procedures exemplify intelligent design.³¹⁸

Random Chance Explanations.

Meyers furthermore holds that the idea of life forming by random chance has been rejected by virtually all origin-of-life experts. He quotes Dr. William A. Dembski as saying that, even “the entire time since the Big Bang would not give you the probabilistic resources you would need to generate the first most simple protein molecule, or the gene to build that molecule, because it is so rich in information.”³¹⁹ Even if the first molecule had been much simpler than those we know today,

... there is a minimal complexity threshold...a certain level of folding that a protein has to have, called tertiary structure, that is necessary for it to perform a function. You don't get tertiary structure in a protein unless you have at least seventy-five protein molecules to form by chance. First, you need the right bonds between the amino acids. Second, amino acids come in right-handed and left-handed versions, and you've got to get only left-handed ones. Third, the amino acids must link up in a specified sequence, like letters in a sentence.

Run the odds of these things falling into place on their own and you find that the probabilities of forming a rather short functional protein at random would be one chance in a hundred thousand trillion trillion trillion trillion trillion trillion trillion trillion. That's a ten with 125 zeroes after it!

And that would only be one protein molecule—a minimally complex cell would need between three hundred and give hundred protein molecules. Plus, all of this would have to be accomplished in a mere 100 million years, which is the approximate window of time between the Earth cooling and the first microfossils we've found.

To suggest chance against those odds is really to invoke a naturalistic miracle. It's a confession of ignorance. It's another way of saying, 'we

don't know.' And since the 1960s, to their credit, scientists have been very reluctant to say that chance played any significant role in the origin of DNA or proteins—even though, as you say, it's still unfortunately a live option in popular thinking.³²⁰

Following this matter of mathematical probabilities, Muncaster states that General Relativity and recent discoveries by the COBE satellite and Hubble telescope have enabled scientists to measure and calculate the size of the universe, the amount of matter contained in it, and the amount of time since the apparent beginning of the universe. He cites a team of scientists led by George Smoot from the University of California at Berkeley, who have been able, since 1992, to rather accurately measure the edges of the universe, its size and its theoretical age. Assuming that their view is correct, that the universe is some 10^{17} seconds old; that the size of the universe is 5×10^9 light years radius, and that matter in the universe is 10^{84} baryons (a baryon is a common example of sub-atomic particles, such as a proton, for example). One can then calculate the probability of randomly producing a single living cell. Since the maximum number of conceivable interactions between sub-atomic particles is 10^{20} events per second, if we were to combine maximum time, maximum matter and maximum number of interactions, one can calculate the total number of events possible since the beginning of time:

10^{17}	X	10^{84}	X	$10^{20} =$	10^{121}
Time	Particles	events/second	= Total events		

The total number of “events” required to produce a single living (reproductive) cell can be determined, according to molecular biologist Harold Morowitz, based on the necessary DNA building blocks would be $10^{100,000,000,000}$. Therefore Muncaster calculates the following:

$$\text{Probability of Evolutionary Start} = \frac{10^{121}}{10^{100,000,000,000} \cdot 10^{99,999,999,879}} = \underline{1} = 0$$

These calculations are based on the Old Earth view, rather than the Young Earth view. We will leave this topic to a later time. However, whether one

ascribes to the Young Earth or Old Earth view, these calculations suggest that evolution could not possibly have happened at all. Science and statisticians are having to agree that even ten billion years would be largely insufficient “for a single living cell to develop...let along the complex parade of changes that evolution requires.” For Muncaster, all new discoveries, including “Big Bang” evidence, support creation and disprove evolution.³²¹

The point of this line of argumentation is not only that the odds are massively stacked against the chance formation of life. According to science writer Nancy Pearcey also, “The point is that, in principle, chance events do not create complex information. As a result, virtually all origin-of-life researchers today have abandoned theories based on chance.”³²²

Natural Selection.

Zoologist Richard Dawkins holds that when natural selection acts on chance variations, then evolution is capable of scaling otherwise impossibly high peaks. He suggests that a complex biological structure is like a sheer cliff that cannot be scaled in one big bound without intermediate steppingstones, as chance must do. However, Dawkins thinks that the backside of the same mountain has a gradual slope that is more easily climbed. This is done in Darwinian fashion by small chance variations and then natural selection steps in to choose the most advantageous ones. Over protracted periods of time, these little changes accumulate into major differences.³²³ But, are there any problems with this view?

According to Stephen Meyer, there are significant problems with this theory. Even if natural selection were arguably able to function at some levels of biological evolution, it cannot work at the level of chemical evolution, which tries to explain the origin of first life from simpler chemicals. Darwinists admit that natural selection requires a self-replicating organism to work. However, to have reproduction, “there must be cell division. That presupposes the existence of information-rich DNA and proteins. But that’s the problem—these are the very things they’re trying to explain!”³²⁴

Another argument is advanced that perhaps replication first began in a much simpler way and then natural selection was able to take over, as might be the case when some small viruses use RNA as their genetic material. RNA molecules are simpler, can store information and can replicate. What if they were the first reproductive life? Meyer responded to this argument in this way:

The RNA molecule would need information to function...and so we're right back to the same problem of where the information came from. Also, for a single strand of RNA to replicate, there must be an identical RNA molecule close by. To have a reasonable chance of having two identical RNA molecules of the right length would require a library of ten billion billion billion billion billion billion RNA molecules—and that effectively rules out any chance origin of a primitive replicating system.³²⁵

Jay Roth is a former professor of cell and molecular biology at the University of Connecticut and an expert in nucleic acids. Speaking to this issue of the original template for the first living system was RNA or DNA, he holds that the same problem exists. “Even reduced to the barest essentials, this template must have been very complex indeed. For this template, and this template alone, it appears it is reasonable at present to suggest the possibility of a creator.”³²⁶

Chemical Affinities and Self-Ordering.

Many scientists today, as a result of the disenchantment among origin-of-life scientists with random chance and natural selection, have latched onto some other possibilities such as self-organizational theories for the origin of information-bearing macromolecules. This would make it seem that life arose by natural forces within the constituents of matter itself and, whenever the right preconditions exist, life will arise automatically and inevitably. There is a widely used graduate textbook that teaches this view. It is titled *Biochemical Predestination*.³²⁷ The predestination is by some force within nature itself to order the chemical compounds to line up in

just the exact sequences to create the building blocks of life. This theory seemed plausible because certain chemical compounds react more easily with certain others, while not with others. The inference drawn from this is that chemical preferences are responsible for the highly specified sequences in protein and DNA. However, when Kenyon and Steinman, the authors of *Biochemical Predestination* “conducted experiments to confirm their theory of biochemical predestination, the chemicals appeared to be Armenians with wills of their own. They stubbornly refused to line up in the proper sequences to form biologically significant results.”³²⁸

Nancy Pearcey interviewed Kenyon in 1989 and he told her: “If you survey the experiments to date, designed to simulate conditions on the early Earth, one thing that stands out is that you do not get ordered sequences of amino acids. These simply do not appear among the products of any experiments.” Failing to find a great deal of spontaneous ordering, Kenyon “faced the implications squarely. Eventually, he repudiated his own theory and became a proponent of Intelligent Design.”³²⁹

If life consists in information, and its passage and replication, Kenyon’s failed experiments are what we should expect because, in principle, laws of nature do not give rise to information. Pearcey explains why this is:

...The scientific method insists that experiments must be repeatable. Whenever you reproduce the same conditions, you should get the same results, or something is wrong with your experiment. The goal of science is to reduce those regular patterns to mathematical formulas. By contrast, the sequence of letters in a message is irregular and non-repeating, which means it cannot be the result of any law-like process.³³⁰

To illustrate further, the chemical letters in DNA are few—A,C,G, and T. However, if every time you had an A, it would attract a G, you would get a repetitive pattern, but it would convey very little information. To convey information, you need to not follow some easy rule or formula. Rather, you must specify each individual letter. Otherwise, you do not get

The Iliad, *Hamlet*, or *War and Peace*, but rather some little mind-numbing mantra. Law-like processes cannot provide a high information content. There are rules of grammar and vocabulary that enable us to communicate, but the passage of information depends on irregular sequencing of letters. Pearcey states:

If (the DNA letters) followed some law or formula, they would line up automatically into only a few repeated patterns, storing very little biological information. But in fact, every cell in your body contains more information than the entire thirty volumes of the *Encyclopedia Britannica*. Why is that possible? Because with some minor exceptions, there are no laws of chemical attraction and repulsion that cause the “letters” in DNA to link up in any particular pattern. If you were to decode one section of DNA, there is no rule or formula determining what comes next. Instead, the chemical “letters” are free to combine and recombine in a vast variety of sequences.³³¹

Stephen Meyer explains further that while information requires variability, irregularity and unpredictability—which is what information theorists call complexity—self-organization gives you repetitive, redundant structure, which is known as simple order. And complexity and order are categorical opposites. While evolutionary scientists in chemistry can look into laws of nature to describe regular, repetitive patterns, one cannot invoke self-organizing processes to explain the origin of information because informational sequences are irregular and complex. They exhibit ‘specified complexity,’ and this principle will not be challenged by future discoveries.”³³² Signaling how this is viewed in DNA, he states:

If you study DNA, you will find that its structure depends on certain bonds that are caused by chemical attractions. For instance, there are hydrogen bonds and bonds between the sugar and phosphate molecules that form the two twisting backbones of the DNA molecule. However, there is one place where there are no

chemical bonds, and that is between the nucleotide bases, which are the chemical letters in the DNA's assembly instructions.... The letters that spell out the text in the DNA message do not interact chemically with each other in any significant way. Also, they're totally interchangeable. Each base can attach with equal facility at any site along the DNA backbone...

In the DNA, each individual base, or letter, is chemically bonded to the sugar-phosphate backbone of the molecule. That is now they're attached to the DNA's structure. But...there is no attraction or bonding between the individual letters themselves. So, there is nothing chemically that forces them into any particular sequence. The sequencing has to come from somewhere else...

Information, or Intelligence, comes from outside the system. Neither chemistry nor physics arranged the letters...Clearly, the cause comes from outside the system. And that cause, is intelligence.³³³

Materialistic origin-of-life theories have all run into dead-ends. The renowned scientist, Francis Crick, who was a philosophical materialist, conceded: "An honest man, armed with all the knowledge available to us now, could only state that in some sense, the origin of life appears at the moment to be almost a miracle, so many are the conditions which would have to have been satisfied to get it going."³³⁴

Although scientists are careful to state their cases in provisional ways, usually, in order to be open to new evidence, they can conclude that some possibilities can be excluded categorically. In some cases, scientists know that, in principle, some hypotheses and theories can and should be discarded. More evidence will not change that. One such example would be the idea that self-organizational processes can provide new information. Good historical science consists of making inferences to the best explanation, based on the clearest evidence. Meyer says that

...A key criterion is whether the explanation has ‘causal power,’ which is the ability to produce the effect in question. In this case, the effect in question is information. We’ve seen that neither chance, nor chance combined with natural selection, nor self-organizational processes have the power to produce information. But we do know of one entity that does have the required causal powers to produce information, and that’s intelligence. We’re not inferring to that entity on the basis of what we don’t know, but on the basis of what we do know. That’s not an argument from ignorance.³³⁵

DNA is, by way of analogy, likened to the computer “software” that makes the cell operate, and the sequence of its bases, or letters, carries information in much the same way that sequences of 0 and 1 carry information in a computer code. Dawkins writes: “The machine code of the genes is uncannily computer-like. Apart from differences in jargon, the pages of a molecular biology journal might be interchanged with those of a computer engineering journal.”³³⁶

What is critically important to recognize is that we can now apply information theory to biology, and that opens a whole new spectrum on our studies on the origins of life. We know that a message is independent of the material medium used to convey it. The message remains the same, no matter what material was used. Pearcey gives the example:

If you see a sign ‘Math Test Today,’ written on a chalkboard, you do not conclude that the message is a product of the chemical properties of calcium carbonate. Applied to the origin of life, this principle means that the message encoded in DNA was not created by forces within the molecule itself.

We can now see why all the experiments to create life in a test tube have failed—because they tried to build life from the bottom up, by assembling the right materials to form a DNA molecule. But life is not about matter. It’s about information. “Evolutionary biologists have failed to realize that they work with two more or

less incommensurable domains: that of information and that of matter," writes George Williams (himself an evolutionary biologist). "The DNA molecule is the medium, it's not the message."³³⁷ And information theory tells us that the medium does not write the message.³³⁸

Because DNA is a "genetic databank" that transmits information using the genetic code, Paul Davies takes the analogy a bit further: "Trying to make life by mixing chemicals in a test tube is like soldering switches and wires in an attempt to produce Windows 98. It won't work because *it addresses the problem at the wrong conceptual level.* (Italics by Pearcey).³³⁹ For Pearcey, this is "a devastating critique of the dominant origin-of-life scenario. Proposing that matter gave rise to life is not just mistaken; it is addressing the question at the wrong conceptual level."³⁴⁰

When queried about whether the analogy of language and information is weak in the sense that it goes too far and becomes metaphorical, Meyer answered that he is actually not arguing by analogy because "the coding regions have exactly the same relevant properties as a computer code or language....When you find a sequential arrangement that is complex and corresponds to an independent patter or functional requirement, this kind of information is always the product of intelligence. Books, computer codes and DNA all have these two properties... The presence of this type of information in DNA also implies an intelligent source."³⁴¹

Meyer is furthermore convinced that the Cambrian explosion is additional evidence for intelligence behind the specific complexity found in biology:

The fossils of the Cambrian Explosion absolutely cannot be explained by Darwinian theory or even by the concept called "*punctuated equilibrium*," which was specifically formulated in an effort to explain away the embarrassing fossil record. When you look at the issue from the perspective of biological information, the best explanation is that an intelligence was responsible for this otherwise inexplicable phenomenon....New developments in

embryology and developmental biology are telling us that DNA ... is not the whole show.

DNA provides some, but not all, of the information that needed to build a new organism with a novel form and function....DNA builds proteins, but proteins have to be assembled into larger structures. There are different kinds of cells and those cells have to be arranged into tissues and tissues have to be arranged into organs, and the organs...into overall body plans.

According to Neo-Darwinism, new biological forms are created from mutations in DNA, with natural selection preserving and building on the favorable ones. But if DNA is only part of the story, then you can mutate it indefinitely and you'll never build a fundamentally new body architecture.

So, when you encounter the Cambrian explosion, with its huge and sudden appearance of radically new body plans, you realize you need lots of new biological information. Some of it would be encoded for in DNA—although how that occurs is still an insurmountable problem for Darwinists. But...where does the new information come from that's not attributable to DNA? How does the hierarchical arrangement of cells, tissues, organs and body plans develop? Darwinists don't have an answer. It's not even on their radar.³⁴²

If one accepts the (Old Earth) assumptions of some scientists, that the Cambrian explosion began some 530 million years ago, and that during a five-million-year window of time, some 20 to 35 to forty of the world's forty phyla sprang forth with unique body plans during that phase, this would be comparable to one minute, if one were to compress all of the Earth's history into 24 hours. Meyer says this represents an incredible quantum leap in biological complexity. Some animals, like the trilobite suddenly show up fully formed at the beginning of the explosion. And this is followed by

stasis, meaning that the basic body plans remained distinct over all the eons. Darwin himself admitted that the Cambrian explosion argued against his theory. He thought that further fossil finds would vindicate him but they argue more strongly against his theory. Meyer asks,

Where did the information come from to build all these new proteins, cells and body plans? For instance, Cambrian animals would have needed complex proteins, such as lysyl oxidase. In animals today, lysyl oxidase molecules require four hundred amino acids. Where did the genetic information come from to build these complicated molecules? That would require highly complex, specified genetic information of the sort that neither random chance nor natural selection, nor self-organization can produce.

First, Even assuming a generous mutation rate, the Cambrian explosion was far too short to have allowed for the kind of large-scale changes that the fossils reflect.

Second, only mutations in the earliest development of organism have a realistic chance of producing large-scale macro-evolutionary change. And scientists have found that mutations at this stage typically have disastrous effects. The embryo usually dies or is crippled.³⁴³

There is another theory advanced by evolutionists, that mutations occurred in an inactive part of the DNA, in an area that would not have any immediate impact on the organism. Then, after a long period of time, these mutations could have accumulated, and a new gene sequence could have come into being and created an entirely new protein. Natural selection would then preserve any beneficial effects this would have on the organism. Meyer dismisses this argument by recalling that

...these mutations would have had to occur by random chance, since natural selection cannot preserve anything until it confers a positive benefit on the organism. The problem is that the odds of creating a novel functional protein without the help of natural selection

would be vanishingly small. There are now a number of studies in molecular biology that establish this. So this so-called “neutral theory” of evolution is another dead end.

There’s really only one explanation that accounts for all the evidence. In any other field of endeavor, it would be obvious, but many scientists shy away from it in biology. The answer is an intelligent designer.³⁴⁴

The Cambrian explosion proved to be the very antithesis of what Darwinists hoped to find. Major differences in form and body plans appear first, with no simpler transitions before them. Later on, came some minor variations but they happened within the framework of these separate and disparate body plans. The complexity came first with minor variations since then. If one can accept that the body plans of the Cambrian animals originated in the mind of a designer, that would explain how the major differences in form came first and the small-scale variations came later.

Intelligence is the only cause that could produce this, in Meyer’s view. It takes intelligence to explain the origin of the layers of information necessary to create the new body plans in the Cambrian animals. To build a new animal you need DNA to create the proteins and additional information to arrange the proteins into higher level structures. “Once you allow intelligent design as an option, you can quickly see how it accounts for the key features of the Cambrian phenomenon....No other entity can create the complex and functionally specific information needed for new living forms. No other explanation suffices.”³⁴⁵

Lee Strobel raised the objection to Meyer that intelligent design seemed like an outmoded concept ever since William Paley’s famous comparison of biological systems to the workings of a watch two centuries ago. Meyer countered with the statement that:

Just the opposite is true. Evolutionists are still trying to apply Darwin’s nineteenth century thinking to a twenty-first century reality, and it is not working. Explanations from the era of the

steamboat are no longer adequate to explain the biological world of the information age. Darwinists say they're under some sort of epistemological obligation to continue trying because, to invoke design would be to give up on science. Well, I say it is time to redefine science. We should not be looking for only the best naturalist explanation, but the best explanation, period. And intelligent design is the explanation that is most in conformity with how the world works.³⁴⁶

Lee Strobel enquired of Meyer his view of the future of Darwinism. Meyer answered:

...The information revolution taking place in biology is sounding the death knell for Darwinism and chemical evolutionary theories... The attempt to explain the origin of life solely from chemical constituents is effectively dead now. Naturalism cannot answer the fundamental problem of how to get from matter and energy to biological function without the infusion of information from an intelligence. Information is not something derived from material properties; in a sense, it transcends matter and energy. Naturalistic theories that rely solely on matter and energy are not going to be able to account for information. Only intelligence can. I think that realization is going to progressively dawn on more and more people, especially younger scientists who have grown up in the age of information technology.

...Information is the hallmark of mind. And purely from the evidence of genetics and biology, we can infer the existence of a mind that is far greater than our own—a conscious, purposeful, rational, intelligent designer who's amazingly creative.³⁴⁷

Nobel Laureate David Baltimore remarked, "Modern Biology is a science of information."³⁴⁸ Many other biologists have also cited information as biology's central problem because, "for matter to be alive, it must be suitably structured. A living organism is not a mere lump of matter. Life is special and what makes life special is the arrangement of its matter into very specific forms."³⁴⁹ How can matter be arranged in such ways? What is the

information required and where did it come from? Virtually all scientists agree that matter has not always existed. Some matter is lifeless and then life appeared. First there was no matter; then there was inorganic matter. Then there was organic matter. There is a huge gulf between inorganic and organic matter. Dembski points out

... That gulf is properly characterized in terms of information. The matter in the dirt under your feet and the matter that makes up your body is the same. Nevertheless, the arrangement of the matter—the information—vastly differs in these two cases. Biology's information problem is therefore to determine whether (and if so, how) design is needed to compliment purely natural forces in the origin and subsequent development of life.³⁵⁰

I conclude this chapter, with the words of Jerry Coyne, of the Department of Ecology and Evolution at the University of Chicago: "We conclude—unexpectedly—that there is little evidence for the neo-Darwinian view: its theoretical foundations and the experimental evidence supporting it are weak."³⁵¹

Part III:

A Structured Look at Darwinism's Failure to Explain Complex Biological Information, Functional Complexity, Irreducible Complexity, and Specific Complexity.

Chapter 8:
***Functional Complexity's Challenge
to Darwinism***

“Endless experiment, endless invention,
Brings knowledge of motion, but not of stillness;
Knowledge of speech, but not of silence;
Knowledge of words, and ignorance of the Word...
“Where is the Life we have lost in living?
Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?”³⁵²

It is interesting that the Peruvian Indians have traditionally considered the silences between words to be when the real dialogue takes place, when the listener “resonates” with the words spoken by the other person. The Incas had no written alphabet but their *quipus*, (an assortment of vertical strings of varying lengths attached to a horizontal string across the top, each string having knots at differing specific intervals), bore important verbal and mathematical symbols, and enabled the Incas to convey intelligent information throughout the geographically extensive Inca empire—from extreme north to extreme south, it was longer than the Roman Empire. And interestingly, it was the spaces between the knots of the *quipus*, more than the varied knots, that conveyed the intelligence.

Bits of data can be formatted into information, and our abstractions concerning systems of information constitute our basis for knowledge about it. Wisdom then has to do, I would argue, with the overall “big

picture” of reality, called truth, and appropriate applications of our limited, but growing, knowledge of reality to better understand and then positively impact on real life situations.

Scholars who are specialized in one area of expertise look to experts in other fields to round out their knowledge. *Sitz im Leben* is the German technical phrase that theologians used to describe the process of reinforcing, or even challenging, Biblical accounts with other known historical and anthropological facts. So it is too, that medical doctors, for example, have looked to experts in business administration to help improve some of their “quality control” mechanisms in the delivery of medical and health care services.

Another example of how this interdisciplinary interaction has brought more light on a topic occurred at the Wistar Institute Symposium, in Philadelphia, in 1967. It was here that mathematicians were invited to bring the lights of their expertise to bear on the topic of Darwinian evolution, insofar as it depends on the mathematical probabilities of “...favorable micromutations required to create complex organs and organisms, the frequency with which such favorable micromutations occur exactly where and when they are needed, the efficacy of natural selection in preserving the slight improvements with sufficient consistency to permit the benefits to accumulate, and the time allowed by the fossil record for all this to have happened.”³⁵³ The invited mathematicians went to this Symposium well prepared, but their results were not what the leading Darwinists participating in the Symposium had been counting on. For example, the mathematician, D.S. Ulam, pointed out that it was highly improbable that the eye could have evolved by the accumulation of small mutations, because the number of mutations would have been so large and the time available was not nearly long enough for them to appear. Phillip Johnson notes with interest the response of the Darwinists:

Sir Peter Medawar and C.H. Waddington responded that Ulam was doing his science backwards; the fact was that the eye had evolved, and therefore the mathematical difficulties must be only

apparent. Ernst Mayr observed that Ulam's calculations were based on assumptions that might be unfounded and concluded that "somehow or other by adjusting these figures we will come out all right. We are comforted by the fact that evolution has occurred."³⁵⁴

Their conviction was that Darwinism was not some hypothesis or theory open to falsifiability, but rather a scientific fact that had to be accepted until the mathematicians could come up with a viable alternative. And then, as though this was not a heated-enough moment, Ulam was followed by French Mathematician/Medical Doctor, Dr. Marcel Schützenberger, who concluded that "...there is a considerable gap in the neo-Darwinian theory of evolution, and we believe this gap to be of such a nature that it cannot be bridged within the current conception of biology." Dr. Waddington countered with: "Your argument is simply that life must have come about by special creation." Schützenberger and others shouted "no," but the mathematicians did not provide any other alternative.³⁵⁵

These mathematicians had even constructed a model on a sophisticated computer and tried to figure out the probabilities of a cell, or even a protein molecule, coming into existence, unaided. They concluded they were nil.³⁵⁶

Evolutionist Stephen Jay Gould then tried to come up with some middle ground that would minimize the disadvantages of both extremes—micromutational and macromutational theories. His attempts were roundly criticized by Ernest Mayr, the prestigious Neo-Darwinist. Richard Dawkins in his evolutionist work titled *The Blind Watchmaker*, also took issue with Gould.³⁵⁷

Many champions of the evolutionist camp weighed in with their explanations, based on their suppositions and beliefs. They are not at all concordant or credible. But what is noteworthy, for this discussion, is the fact that the Darwinists looked expectantly for support from the queen of sciences, mathematics, and failing to find any, seemed to react with pain and panic, and tried to dismiss probability considerations because, after all, "it is not biology." However, I would again argue that science can not and

does not happen in a vacuum. It makes use of mathematics and philosophy and other fields. It is important too for biologists to have further enquiry into where the evidence of mathematics and mathematical probabilities lead, as well as the light that logic, epistemology, metaphysics and empirical knowledge can shed upon biological data. It is important for us to have a careful look at the scientific scrutiny of Darwinian mechanisms made by some of the leading opponents from the Intelligent Design movement, as well as some opponents who

are not at all supporters of the Intelligent Design movement, nor Christians nor theists.

FUNCTIONAL COMPLEXITY vs. Darwinism.

Adding to the woes of Darwinists and Neo-Darwinists, mathematician/medical doctor Marcel-Paul Schützenberger (1920-1996) of the Faculty of Science of the University of Paris and member of the French Academy of Science, describes the difficulties Darwinists encounter in dealing with Functional Complexity. He was described earlier here in terms of his inputs at the Wister Symposium in 1967, which were composed of mathematical objections to Darwinism and Neo-Darwinism. His arguments were more subtle than expected by many biologists, and thus were misunderstood. According to Dr. Schützenberger, “Darwin’s theory and the interpretation of biological systems as formal objects were at odds insofar as randomness is known to degrade meaning in formal contexts.” He also argued that Darwin’s theory logically required some active principle of coordination between the typographic space of the informational macromolecules (DNA and RNA) and the organic space of living creatures themselves—which Darwin’s theory does not provide. The ideas that follow were given in a January 1996 interview with the French monthly science magazine *La Recherche*. His ideas are outgrowths of his own pioneering work in mathematics and in speculative French biological thought. Schützenberger, a lover of mathematical logic, brings his ideas to bear on the interpretation of functional complexity.³⁵⁸

Schützenberger points out that the basis for Darwinism and Neo-Darwinism is the double action of chance mutations and natural selection. This is the basis for two mutually contradictory schools: the gradualists who insist that evolution proceeds by small successive changes; and the saltationists who claim that it proceeds by jumps. They both have serious internal problems in their schools of thought, that apparently have been compounded by their inviting the participation of mathematicians in the overall assessment of evolutionary thought. As he states, “Richard Dawkins ...has been fatally attracted to arguments that hinge on concepts drawn from mathematics and computer science—arguments he then, with all his comic authority, imposes on innocent readers.”³⁵⁹

Schützenberger holds that it is impossible to grasp the phenomenon of life without the concept of functional complexity. Laboratory biologists are endlessly dealing in functional terms concerning the eye, an enzyme, a ribosome or a fruit fly's antenna. Physiologists see everything in their domain in terms of function. Molecular biologists do not always deal in concepts of organs when discussing biochemistry, but certain functions still pertain in the absence of organs. Complexity is also enormously important, even in unicellular organisms: “the mechanisms involved in the separation and fusion of chromosomes during mitosis and meiosis are processes of unbelievable complexity and subtlety. Organisms present themselves to us as a complex ensemble of functional interrelationships. If one is going to explain their evolution, one must at the same time explain their functionality and their complexity.”³⁶⁰

To adequately explain evolution of living creatures, there has to be a specific form of organization.

Whatever it is, it lies beyond anything that our present knowledge of physics or chemistry might suggest. It is a property upon which formal logic sheds absolutely no light. Whether gradualists or saltationists, Darwinians have too simple a conception of biology, rather like a locksmith misguidedly convinced that his handful of keys will open any lock. Darwinists, for example, tend to think

of the gene as if it were the expression of a simple command: do this, get that done; drop that side chain. Walter Gehring's work on the regulatory genes controlling the development of the insect eye reflects that conception. The relevant genes may well function this way, but the story on this level is surely incomplete, and Darwinian theory is not apt to fill in the pieces.³⁶¹

Schützenberger argues that a gene is like a unit of information, having simple binary properties.

A sequence of gene instructions resembles a sequence of instructions specifying a recipe. Consider again the example of the eye. Darwinists imagine that it requires...a thousand or two thousand genes to assemble an eye, the specification of the organ thus requiring one or two thousand units of information? That is absurd! Suppose a European firm proposes to manufacture an entirely new household appliance in a Southeast Asian factory. And suppose that for commercial reasons the firm does not wish to communicate to the factory any details of the appliance's function, like how it works or what purposes it will serve. With only a few thousand bits of information, the factory is not going to proceed very far or very fast. A few thousand bits of information, after all, yields only a single paragraph of text. The appliance in question is bound to be vastly simpler than the eye. Charged with its manufacture, the factory will yet need to know the significance of the operations to which they have committed themselves in engaging their machinery. This can be achieved only if they already have some sense of the object's nature before they undertake to manufacture it. A considerable body of knowledge, held in common between the European firm and its Asian factory, is necessary before manufacturing instructions may be executed.³⁶²

Schützenberger also argues that the genome does not contain the requisite information for explaining organisms, according to the understanding of the genome we now have.

The biological properties invoked by biologists are in this regard quite insufficient. While biologists may understand that a gene triggers the production of a particular protein, that ...kind of knowledge does not allow them to comprehend how one or two thousand genes suffice to direct the course of embryonic development... I've formulated a problem that appears significant to me; how is it that with so few elementary instructions the materials of life can fabricate objects that are so marvelously complicated and efficient? This remarkable property with which they are endowed—just what is its nature? Nothing within our actual knowledge of physics and chemistry allows us intellectually to grasp it. If one starts from an evolutionary point of view, it must be acknowledged that, in one manner or another, the earliest fish contained the capacity, and the appropriate neural wiring to bring into existence organs which they did not possess or even need, but which would be the common property of their successors when they left the water for the firm ground, or for the air.³⁶³

Schützenberger also points out, as a scientist-mathematician and logician, that Darwinism's explanatory power is quite limited.

The union of chance mutation and selection as a certain descriptive value. But in no case does the description count as an explanation. Darwinism relates ecological data to the relative abundance of species and environments. In any case, the descriptive value of Darwinian models is pretty limited. Besides, as saltationists have indicated, the gradualist thesis seems totally ridiculous in light of our growing knowledge of paleontology. The miracles of saltationism, on the other hand, cannot discharge the mystery I have described....

Stability is a necessary condition for existence. This is the real content of the doctrine of natural selection. The outstanding application of this general principle is Berthollet's laws in elementary chemistry. In a desert, the species that die rapidly are those that require water the most. Yet that does not explain the appearance among the survivors of those structures whose particular features permit them to resist aridity. The theory of natural selection is not very powerful. Except for certain artificial cases, we remain unable to predict whether this or that species, or this or that variety will be favored or not as the result of changes in the environment. What we can do is establish the effects of natural selection after the fact—to show, for example, that certain birds are disposed to eat this species of snails less often than other species, perhaps because their shell is not as visible. That's ecology. To put it another way, natural selection is a weak instrument of proof because the phenomena subsumed by natural selection are obvious. They establish nothing from the point of view of the theory.³⁶⁴

When asked whether the significant explanatory feature of Darwinian theory was the connection established between chance mutations and natural selection, Schützenberger answered:

A gene undergoes a mutation, one that may facilitate the reproduction of those individuals carrying it; over time, and with respect to a specific environment, mutants come to be statistically favored, replacing individuals lacking the requisite mutation. But evolution cannot simply be the accumulation of such typographical errors. Population geneticists can study the speed with which a favorable mutation propagates itself under these circumstances....But these are academic exercise, if only because none the parameters that they use can be empirically determined. In addition, there are the obstacles I have already mentioned. We know the number of genes in an organism. There are about 100,000 for a higher vertebrate...But this seems grossly insufficient to explain the incredible quantity of information needed to accomplish evolution within a given line of species.

Darwinists say that horses, once as small as rabbits, increased their size to escape more quickly from predators. Within the gradualist model, one might isolate a specific trait- increase in body size—and consider it to be the result of a series of typographic changes. The explanatory effect achieved is rhetorical, imposed entirely by the trick of insisting that what counts for an herbivore is the speed of its flight when faced by a predator. Now this may be even partially true, but there are no biological grounds that permit us to determine that this is in fact the decisive consideration. After all, increase in body size might well have a negative effect. Darwinists seem to me to have preserved a mechanistic vision of evolution, one that prompts them to observe merely a linear succession of causes and effects. The idea that causes may interact with one another is now standard in mathematical physics; it is a point that has had difficulty penetrating the carapace of biological thought. In fact, within the quasi-totality of observable phenomena, local changes interact dramatically. After all, there is hardly an issue of *La Recherche* that does not contain an allusion to the Butterfly Effect. Information theory is precisely the domain that sharpens our intuitions about these phenomena. A typographical change in a computer program does not change it just a little. It wipes the program out, purely and simply. It is the same with a telephone number. If I intend to call a correspondent by telephone, it doesn't much matter if I am fooled by one, two, three, or eight figures in his number.³⁶⁵

Schützenberger accepts the idea that biological mutations genuinely have the character of typographical errors, in the sense that

One base is a template for another, one *codon* for another. But at the level of biochemical activity, one is no longer able properly to speak of typography. There is an entire grammar for the formation of proteins in three dimensions, one that we understand poorly. We do not have at our disposal physical or chemical rules permitting us to construct a mapping from typographical mutations or modifications to biologically effective structures. To return to the example of the eye; a few thousand genes are needed for its fabrication, but each in isolation signifies nothing. What is significant is the combination

of their interactions. These cascading interactions, with their feedback loops, express an organization whose complexity we do not know how to analyze....Gehring has recently discovered a segment of DNA which is involved both in the development of the vertebrate eye and which can also induce the development of any eye in the wing of a butterfly. His work comprises a demonstration of something utterly astonishing, but not an explanation.³⁶⁶

Dawkins believes in the possibility of a “cumulative selection of beneficial mutations.” ...He resorts to a metaphor ...of a monkey typing by chance and in the end producing a work of literature. It is a metaphor, I regret to say, embraced by Francis Crick, the co-discoverer of the Double Helix. Dawkins has his computer write a series of thirty letters, these corresponding to the number of letters in a verse by Shakespeare. He then proceeds to simulate the Darwinian mechanism of chance mutations and selection. His imaginary monkey types and retypes the same letters, the computer successively choosing the phrase that most resembles the target verse. By means of cumulative selection, the monkey reaches its target in forty or sixty generations.

This demonstration of a monkey typing on a typewriter, even aided by a computer, is bogus. Dawkins doesn't even describe precisely how it proceeds. At the beginning of the exercise, randomly generated phrases appear rapidly to approach the target; the closer the approach, the more the process begins to slow. It is the action of mutations in the wrong direction that pulls things backward. In fact, a simple argument shows that unless the numerical parameters are chosen deliberately, the progression begins to bog down completely.

When asked by *La Recherche* if he would say that the model of cumulative selection, imagined by Dawkins, is out of touch with palpable biological realities, he said, “Exactly. Dawkins' model lay entirely to the side the triple problems of complexity, functionality and their interaction.”³⁶⁷

When also asked by *La Recherche* if he, as a mathematician, would try, despite reservations, to formalize the concept of functional complexity, he answered:

I would appeal to a notion banned by the scientific community, but one understood perfectly by everyone else—that of a goal. As a computer scientist, I could express this in the following way. One constructs a space within which one of the coordinates serves in effect as the thread of Ariadne, guiding the trajectory towards the goal. Once the space is constructed, the system evolves in a mechanical way toward its goal. But look, the construction of the relevant space cannot proceed until a preliminary analysis has been carried out, one in which the set of all possible trajectories is assessed and their average distance from the specified goal is estimated. Such a preliminary analysis is beyond the reach of empirical study. It presupposes that the biologist (or computer scientist) knows the totality of the situation, the properties of the ensemble of trajectories. Yet in terms of mathematical logic, the nature of this pace is entirely enigmatic. It is crucial to remember that the conceptual problems we face in trying to explain life, life has entirely solved. Indeed, the systems embodied in living creatures are entirely successful in reaching their goals. The trick involved in Dawkins' embarrassing example arises from his surreptitious introduction of a relevant space. His computer program calculates from a random phrase to a target, a calculation that corresponds to nothing in biological reality. The function that he employs flatters the imagination, however, because its apparent simplicity elicits naïve approval. In biological reality, the space of even the simplest function has a complexity that defies understanding, and indeed defies any and all calculations.³⁶⁸

Q. Even when they dissent from Darwin, the saltationists are more moderate; they don't pretend to hold the key that would permit them to explain evolution.

S. Before we discuss the saltationists, however, I must say a word about the Japanese biologist Motoo Kimura. He has shown that the majority of mutations are neutral, without any selective effect. For Darwinians upholding the central Darwinian thesis, this is embarrassing...The Saltationist view, revived by Stephen Jay Gould, in the end represents an idea of Richard Goldschmidt's. In 1940 or so, Goldschmidt postulated the existence of very intense mutations, no doubt involving hundreds of genes, and taking place rapidly, in less than one thousand generations, thus below paleontology's threshold of resolution. Curiously enough, Gould does not seem concerned to preserve the union of chance mutations and selection. The saltationists run afoul of two types of criticism. On the one hand, the functionality of their supposed macromutations is inexplicable within the framework of molecular biology. On the other hand, Gould ignores in silence the great trends in biology, such as the increasing complexity of the nervous system. He imagines that the success of new, more sophisticated species, such as the mammals, is a contingent phenomenon. He is not in a position to offer an account of the essential movement of evolution, or at least an account of its main trajectories. The Saltationists are thus reduced to invoking two types of miracles; macromutations as well as the great trajectories of evolution.³⁶⁹

Q. In what sense are you employing the word "miracle?"

S. 1. Miracle is an event that should appear impossible to a Darwinian in view of its ultra-cosmological improbability within the framework of his own theory. Now, speaking of macromutations, let me observe that to generate a proper elephant, it will not suffice suddenly to endow it with a full-grown trunk. As the trunk is being organized, a different but complementary system—the cerebellum—must be modified in order to establish a place for the ensemble of wiring that the elephant will require in order to use the trunk. These macromutations must be coordinated by a system of genes in embryogenesis. If one considers the history of evolution, we must postulate thousands of miracles, miracles,

in fact, without end. No more than the gradualists, the saltationists are unable to provide an account of those miracles.

2. The second category of miracles are directional, offering instruction to the great evolutionary progressions and trends—the elaboration of the nervous system, of course, but the internalization of the reproductive process as well, and the appearance of bone, the emergence of ears, the enrichment of various functional relationships, and so on. Each is a series of miracles, whose accumulation has the effect of increasing the complexity and efficiency of various organisms. From this point of view, the notion of *bricolage* [tinkering] introduced by François Jacob, involves a fine turn of phrase, but one concealing an utter absence of explanation.
3. The appearance of human beings—this also is a miracle in the sense I mean. Here it does seem that there are voices among contemporary biologists...who might cast doubt on the Darwinian paradigm...gradualists and saltationists alike are completely incapable of providing a convincing explanation of the near simultaneous emergence of a number of biological systems that distinguish human beings from the higher primates; bipedalism, with the concomitant modification of not only the pelvis but also the cerebellum; a much more dexterous hand, with fingerprints conferring an especially fine tactile sense; the modifications of the pharynx, which permit phonation; and the modification of the central nervous system, notably at the level of the temporal lobes, permitting the specific recognition of speech. From the point of view of embryogenesis, such anatomical systems are completely different from one another. Each modification constitutes a gift, a bequest from a primate family to its descendants. It is astonishing that these gifts should have developed simultaneously. Some biologists speak of a predisposition of the genome. Can anyone actually recover the predisposition, supposing that it actually existed? Was it present in the first of the fish? Confronted with such questions, the Darwinian paradigm is conceptually bankrupt.³⁷⁰

- Q. You mentioned the Santa Fe school earlier in our discussion Do appeals to such notions as chaos...
- S. What we have here are highly competent people inventing poetic but essentially hollow forms of expression. I am referring in part to the hoopla surrounding cybernetics. And beyond that, there lie the dissipative structures of Prigogine, or the systems of Varela, or, moving to the present, Stuart Kauffman's *Edge of Chaos*—an organized form of inanity that is certain soon to make its way to France. The Santa Fe School takes complexity and applies it to absolutely everything. They draw their representative examples from certain chemical reactions, the pattern of the seacoast, atmospheric turbulence, or the structure of a chain of mountains. The complexity of these structures is certainly considerable, but in comparison with the living world, they exhibit in every case an impoverished form of organization, one that is strictly non-functional. No algorithm allows us to understand the complexity of living creatures. These examples owe their initial plausibility to the assumption that the physico-chemical world exhibits functional properties that in reality it does not possess.³⁷¹
- Q. Should one take your position as a statement of resignation, an appeal to have greater modesty, or something else altogether?
- S. Speaking ironically, I might say that all we can hear at the present time is the great anthropic hymnal, with even a number of mathematically sophisticated scholars keeping time, as the great hymn is intoned, by tapping their feet. The rest of us should, of course, practice a certain suspension of judgment.³⁷²

If one would only take into consideration the serious objections to Darwinism raised concerning functional complexity, this would be a sufficient challenge. However, as we shall see in the following chapters, Darwinism is faced with another powerful challenge: Irreducible Complexity.

Chapter 9: *Irreducibly Complex Systems' Challenge to Darwinism*

In Darwin's Black Box, Biochemist Michael Behe argues, by way of analogy, that neither mousetraps nor intracellular transport systems can evolve in a Darwinian fashion.

You can't start with a platform, catch a few mice, add a spring, catch a few more mice, add a hammer, catch a few more mice, and so on: the whole system has to be put together at once or the mice get away. Similarly, you can't start with a signal sequence and have a protein go a little way towards the lysosome, add a signal receptor protein, go a little further, and so forth. It's all or nothing.³⁷³

Dr. Behe used this mousetrap analogy to help illustrate the shortcomings of Darwinian explanations for the coming into being of some immensely complex systems at the sub-cellular level. To clarify his concept, he writes about how a protein that is synthesized in the cytoplasm eventually finds its way to the lysosome, and how this must happen in an intricate systematic way or systems will fail:

An RNA copy (messenger RNA, or mRNA) is made of the DNA gene coding for a protein that works in the cell's garbage disposal—the lysosome. We'll call the protein "garbagease." The mRNA is made in the nucleus, then floats over to a nuclear pore. Proteins in the pore recognize a signal on the mRNA, the pore opens, and

the mRNA floats into the cytoplasm. In the cytoplasm, the cell's "master machines"—ribosomes—begin making garbagease using the information in the mRNA. The first part of the growing protein chain contains a signal sequence made of amino acids. As soon as the signal sequence forms, a signal recognition particle (SRP) grabs onto the signal and causes the ribosome to pause. The SRP and associated molecules then float over to an SRP receptor in the membrane of the endoplasmic reticulum (ER) and stick there. This simultaneously causes the ribosome to resume synthesis and a protein channel to open in the membrane. As the protein passes through the channel and into the ER, an enzyme clips off the signal sequence. Once in the ER, garbagease has a large, complex carbohydrate placed on it. Coatomer proteins cause a drop of the ER, containing some garbagease plus other proteins, to pinch off, cross over to the Golgi apparatus and fuse with it. Some of the proteins are returned to the ER if they contain the proper signal. This happens two more times as the protein progresses through the several compartments of the Golgi. Within the Golgi an enzyme recognizes the signal patch on garbagease and places another carbohydrate group on it. A second enzyme trims the freshly attached carbohydrate, leaving behind mannose-6-phosphate (M6P). In the final compartment of the Golgi, clathrin proteins gather in a patch and begin to bud. Within the clathrin vesicle is a receptor protein that binds to M6P. The M6P receptor grabs onto the M6P of garbagease and pulls it on board before the vesicle buds off. On the outside of the vesicle is a v-SNARE protein that specifically recognized a t-SNARE on the lysosome. Once docked, NSG and SNAP proteins fuse the vesicle to the lysosome. Garbagease has now arrived at its destination and can begin the job for which it was made.³⁷⁴

This extremely intricate cellular system, and its internal transport systems, is happening billions of times every day in the human body. Behe remarks that indeed, "science is stranger than fiction." The signals and receptors

allow for gated transport (passage of proteins through the membrane); and transmembrane transport (a single protein is threaded through a protein channel) and vesicular transport (where protein cargo is loaded into containers for shipment, e.g., from the Golgi (final processing room) to the lysosome (garbage treatment room)). Each of these kinds of transport is increasingly more complex, thus making the system increasingly intricate. Thus, they cannot in any way account for how intercellular transport could have occurred by the Darwinian explanation.³⁷⁵ When these systems occasionally malfunction, I-cell disease occurs, which is a progressive disease. Children with this disease most frequently die before age five.

Dr. Behe gives a number of other illustrations of irreducible complexity at the sub-cellular level that firmly resist Darwinian gradualistic explanations. No evolutionary scientist is able to propose *how* these intricate compound-complex systems could have come to be gradually, no matter how much time the universe has allegedly been in existence.

Dr. Behe developed his concept of Irreducible Complexity, which is an integrated multipart functional system and, if any part is removed, it destroys the system's function. Darwinian scholars are unable to come up with any plausible suggestion as to how a Darwinian mechanism could account for how they might have come into existence. Thus, in terms of probabilities, something beyond natural selection had to be responsible for their coming into being. Life is too complicated to be the result of an undirected trial-and-error Darwinian process.

Critics of Dr. Behe sometimes argue that irreducible complexity means that if you remove a part and don't alter the other parts, you cannot recover the original function of the system. But that leaves the possibility of removing parts and modifying others to recover the original function. It furthermore leaves open the possibility of removing parts and isolating subsystems that serve other functions. This would appear to be a loophole in which the Darwinian mechanism to operate. They also argue that Behe's argument is only the fallacy of "arguing from ignorance." If it is true that scientists have not yet figured out how the Darwinian mechanism could account for

all this cellular complexity, that does not mean it cannot be done; it only means it has not been done to date. Dr. William Dembski responds to these arguments as follows:

Behe's project is more subtle than any of these criticisms suggests. Behe's project is properly conceived as making three key points: a logical, an empirical and an explanatory point. What's more, he conflates none of them. The logical point is this: Certain artificial structures are provably inaccessible to a direct Darwinian pathway because they have property P (i.e., irreducible complexity). But certainly, biological structures also have property P, so they too must be inaccessible to a direct Darwinian pathway. This formulation looks similar to the previous logical point, but it differs in one crucial respect. In the previous formulation, inaccessibility was with respect to the Darwinian mechanism *in toto* and therefore with respect to all Darwinian pathways whatsoever, both direct and indirect. Here, the restriction is only on direct Darwinian pathways.³⁷⁶

Dembski grants that, as a logical point, Behe was only dealing with direct Darwinian pathways in his definition of irreducible complexity because the function of the system in question always stay put and concedes that Behe did not address systems that could retain their function by removing parts and then modifying the other remaining parts. Behe did discuss removal but not modification. Dembski handles this objection by distinguishing between Direct (connoting "improvements)," and Indirect Darwinian pathways (where one function gives way to another and thus can no longer improve because it no longer exists):

By strengthening the concept of irreducible complexity to include a minimal complexity condition: Essentially this condition says that the system cannot be simplified and still retain the level of function needed for selective advantage. With this proviso, irreducible complexity logically rules out direct Darwinian pathways...

In ruling out direct Darwinian pathways to irreducibly complex systems, Behe isn't saying it's logically impossible for the Darwinian mechanism to attain such systems. It's logically possible for just about anything to attain any other thing via a vastly improbable or fortuitous event....If the Darwinian mechanism is the means by which a direct Darwinian pathway leads to an irreducibly complex biochemical system, then it is despite the intrinsic properties or capacities of that mechanism. Thus, in saying that irreducibly complex biochemical systems are provably inaccessible to direct Darwinian pathways, *{Intelligent} Design* proponents are saying that the Darwinian mechanism has no intrinsic capacity for generating such systems except as vastly improbably or fortuitous events. Accordingly, to attribute irreducible complexity to a direct Darwinian pathway is like attributing Mount Rushmore to wind and erosion. There's a sheer possibility that wind and erosion could sculpt Mount Rushmore, but not a realistic one.³⁷⁷

Therefore, one must look not only at Behe's purely logical explanation, but also at his empirical point that no indirect Darwinian pathways are known to science that might account for irreducibly complex biochemical systems.

At best, biologists have been able to isolate subsystems of such systems that perform other functions. But any reasonably complicated machine always includes subsystems that perform functions distinct from the original machine. So, the mere occurrence or identification of subsystems that could perform some function on their own is no evidence for an indirect Darwinian pathway leading to the system. What's needed now is a seamless Darwinian account that's both detailed and testable of how subsystems undergoing co-evolution could gradually transform into an irreducibly complex system. No such accounts are available or forthcoming. Indeed, if such accounts were available, critics would merely need to cite them, and *Intelligent Design* would be finished.³⁷⁸

Behe's critics argue that Behe is using the "argument from ignorance," which is sometimes formulated: "absence of evidence is not evidence of absence." However, if the absence is pervasive and systemic, then "positing as-yet-undiscovered indirect Darwinian pathways for such systems constitute 'wishful speculations,'"³⁷⁹ according to Franklin Harold and James Shapiro, who are not *Intelligent Design* proponents. Therefore, Behe's logical point (concerning direct Darwinian pathways) and empirical point (concerning the failure of evolutionary biology to discover indirect Darwinian pathways) deal an effective and fatal blow to the notion of the Darwinian mechanism which has been hailed for decades as the solution of *all* problems of biological complexity, once an initial life form is present.

One thing that scientific explanations absolutely must have is **causal adequacy**; they need to point to causal powers that are adequate to explain the effect in question—in this case, the irreducible complexity of a number of biochemical machines. Now, here we have seen the elimination by Behe of the adequacy of direct Darwinian pathways on logical grounds; of indirect Darwinian pathways on the grounds of no scientific evidence; and appealing to unknown material mechanisms is even further beyond the thresholds of formal science.

Material mechanisms are not demonstrably capable of explaining the existence of irreducibly complex biochemical systems. But to state this matter in a more positive light, what exactly is capable of bringing into being irreducibly complex systems? The answer is *intelligence*. We know that intelligent human beings devise complex machines that are irreducibly complex. Therefore, Behe posits that "on the basis of causal adequacy, intelligent design is a better scientific explanation than Darwinism for the irreducible complexity of biochemical systems."³⁸⁰

Dembski points out that the best confirmed examples of Darwinian evolution deal with natural selection "steadily improving a given function in a given way."³⁸¹ This "improvement" that is featured in *The Origin of Species* connotes a direct Darwinian pathway and, by contrast, an

indirect Darwinian pathway is much more difficult to establish with any scientific rigor:

The reason is not hard to see: By definition natural selection selects for preexisting function. It cannot select for future function. Once a novel function is realized, the Darwinian mechanism can select for it as well. But making this transition is the hard part. How does one evolve from a system exhibiting a preexisting selectable function to a new system exhibiting a novel selectable function? Natural selection is no help here, and all the weight is on random variation to come up with the right and needed modifications during the crucial transition time when functions are changing (or, as Darwin put it in his *Origin of Species*, "...unless profitable variations do occur, natural selection can do nothing."). The actual evidence that random variation can produce the successive modifications needed to evolve irreducible complexity is nil.

Behe's logical point about irreducible complexity ruling out direct Darwinian pathways therefore rules out the form of Darwinian evolution that is best confirmed. What's more, it rules out the only form of Darwinian evolution that is open to logical analysis. Indirect Darwinian pathways, by contrast, are so open-ended that no logical analysis is capable of constraining them. (Almost invariably, they are left unspecified, thus rendering them neither falsifiable nor testable.) Behe's logical point therefore takes logic as far as it can in constraining the Darwinian mechanism and leave empirical considerations to rule out what remains. And since logical inferences are inherently stronger than empirical inferences, Behe has made his critique of the Darwinian mechanism as strong and tight as possible. It's not just that certain biological systems are so complex that we can't imagine how they evolved by Darwinian pathways. Rather, we can show conclusively that they could not have evolved by direct Darwinian pathways and that indirect

Darwinian pathways, which have always been on much less stable ground, are utterly without empirical support.³⁸²

Behe's contribution has been significant in teaching us how to evaluate the relative merits of Darwinism and *Intelligent Design*, by providing us with the scientifically defined concept of irreducible complexity. But this concept of Irreducible Complexity is further bolstered by the concept of Specified Complexity, as formulated by William Dembski, as we shall see in the next chapter.

Chapter 10: *Specified Complexity's Challenge to Darwinism*

Evolutionary biology teaching holds that all biological complexity is the result of **material mechanisms** (including the Darwinian mechanism of natural selection and random variation, and such other mechanisms as symbiogenesis, gene transfer, genetic drift, the action of regulatory genes in development, self-organizational processes, etc.). These mechanisms are purely material and void of intelligence. It can be argued that material mechanisms can be programmed by an intelligence, but that is outside of the domain of evolutionary biology. By contrast, *Intelligent Design* theory holds that biological complexity requires, in addition to material mechanisms, intelligence, “where the intelligence is not reducible to such mechanisms.”³⁸³

Unintelligent matter can take a number of different shapes or arrangements, in potency. Information, however, comes from the Latin word *informare*, which means to give form or shape to something. Matter is inert, passive, while information is active, as it acts on matter, it gives it its form, or arrangement or structure.

The relationship between raw material, whether marble, wood, or even more abstract things like sounds or numbers, which might be shaped or arranged into a large possible variety of physical forms, or letters or mathematical formulae, depends on how they are formed. Matter can be arranged in a variety of ways, and information is an agent, or active principle

that is capable of doing the arranging. Since the days of the ancient Greek philosophers, at least, this relationship has been generally accepted.

In nature itself, there are examples of how nature is able to structure itself. The example of an acorn transforming itself into a tree is a case in point. However, raw *materia* (wood, as in trunks, logs, or even boards) is not able to form itself into a sailing ship. That requires a careful designer, who employs powers not contained in the wood itself. Nature has the internal capacity to transform itself into specific and limited forms without outside help, like the acorn into the oak tree. In the case of the wooden sailing ship, Design (*techné*) is required to so form the ship. Aristotle wrote in *Book Twelve* of his *Metaphysics*: "Design is a principle of movement in something other than the thing moved; nature is a principle in the thing itself."³⁸⁴ Design therefore, has to do with "information conferred on an object from outside the object and that the material constituting the object, apart from that outside information, does not have the power to assume the form it does."³⁸⁵ Dembski formulates the central issue over intelligent design and biological evolution in this way:

Is nature complete in the sense of possessing all the resources needed to bring about the information-rich biological structures we see around or, does nature also require some contribution of design to bring about those structures? Aristotle claimed that the art of shipbuilding is not in the wood that constitutes the ship. We've seen that the art of composing sonnets is not in the letters of the alphabet. Likewise, the art of making statues is not in the stone out of which statues are made. Each of these cases requires a designer. So too, the theory of intelligent design contends that the art of building life is not in the physical stuff that constitutes life but requires a designer.³⁸⁶

Part of Dr. Dembski's rich repertoire of knowledge has to do with his advanced studies of the application of mathematical theory of information and how it applies to *Intelligent Design*, and specifically to intelligent design's

criterion for detecting design, namely, **Specified Complexity**. He points out that Claude Shannon invented the Mathematical Theory of Information after World War II. This interest was developed by Shannon while he worked on cryptography during the war—encrypting messages to prevent the enemy from reading our mail. By properly encrypting-decrypting messages, according to a predetermined scheme, messages can be coded and decoded. Our modern computers make use of these character strings to enable us to convey meaning in predetermined ways.

It quantifies information in character strings in such wise that when they are sent across a “noisy” communications channel (noise represents a stochastic process that disrupts the strings in statistically well-defined ways), preserving the strings despite the presence of noise (i.e., the theory of error-correcting codes), compressing the strings to improve efficiency and transforming the strings into other strings to maintain their security (i.e., cryptography). Although Shannon’s theory started out as a syntactic theory concerned with character strings based on a fixed alphabet, it quickly became a statistical theory. Characters from an alphabet will often have different abilities of occurrence. ... These probabilities in turn determine how much information any given string can convey. In general, the quantity of information contained in a character string corresponds to the improbability of that character string. Thus, the more improbable the string, the more information it contains.³⁸⁷

The mathematical theory of information holds that high probability claims have low information content, and *low-probability claims have high information content*. This mathematical theory of information is applicable to any reference class of possibilities generated, one must identify one possibility and rule out the rest. The more possibilities get ruled out and, correspondingly, the more improbable the possibility that actually obtains, the greater the information generated.

Generating information means ruling out possibilities, in conformity with the probability or ranges of possibilities that are not ruled out. An essential point needing explanation is, *who*, or *what*, rules out possibilities? Possible sources of information are intelligent agency and physical processes. While these sources are not mutually exclusive, they include all logically possible sources of information. It is conceptually sound to assert that nonphysical processes generate information. Dembski makes this important point:

Although physical processes that are not also intelligent agents can generate information, there is a sense in which information, whatever its source, is irreducibly conceptual and thus presupposes intelligent agency. This is because the very reference class of possibilities that sets the backdrop for the generation of information must invariably be delineated by an intelligent agent. Thus information, whatever else we might want to say about it, can never be entirely mind-independent or concept-free.³⁸⁸

It is possible that an intelligent agent can identify whether information in a particular reference class results from an intelligent agent or a physical process. This is agent-induced or conceptual information. In contrast to this, a physical process can produce an "...event, represented as a possibility within the reference class of possibilities, and thereby generate information."³⁸⁹ This Dembski calls event-induced or physical information.

It is conceivable that conceptual and physical information can coincide. The movie **Contact** deals with SETI (Search for Extraterrestrial Intelligence) researchers whose radio telescope antennae receive rational signals from outer space. Although this has not yet happened in real life, they are monitoring radio waves from outer space to detect any possible messages from intelligent extraterrestrial beings. Assuming for a moment that they would be successful, this very improbable coincidence of an intelligent pattern and a physically induced event (reception of physical radio waves by the antennae) would be an example of specified complexity. Dembski offers this following clarification:

Specified complexity...requires a dual ruling out of possibilities, one by an intelligent agent who identifies a pattern and one by physical processes that induce an event. Provided these coincide, the probability is small and the pattern can be identified independently of the event, we say the event exhibits specified complexity.

Specified complexity (or complex specified information...) is therefore a *souped-up* form of information...[It's] consistent with the basic idea behind information, which is the reduction or ruling out of possibilities from a reference class of possibilities. But whereas the tradition understanding of information is unary, conceiving of information as a single reduction of possibilities, specified complexity is a binary form of information... [It] depends on a dual reduction of possibilities, a conceptual [information] reduction combined with a physical [information] reduction. Moreover, these dual reductions must be coordinated so that the physical information matches the pattern set by the conceptual information.

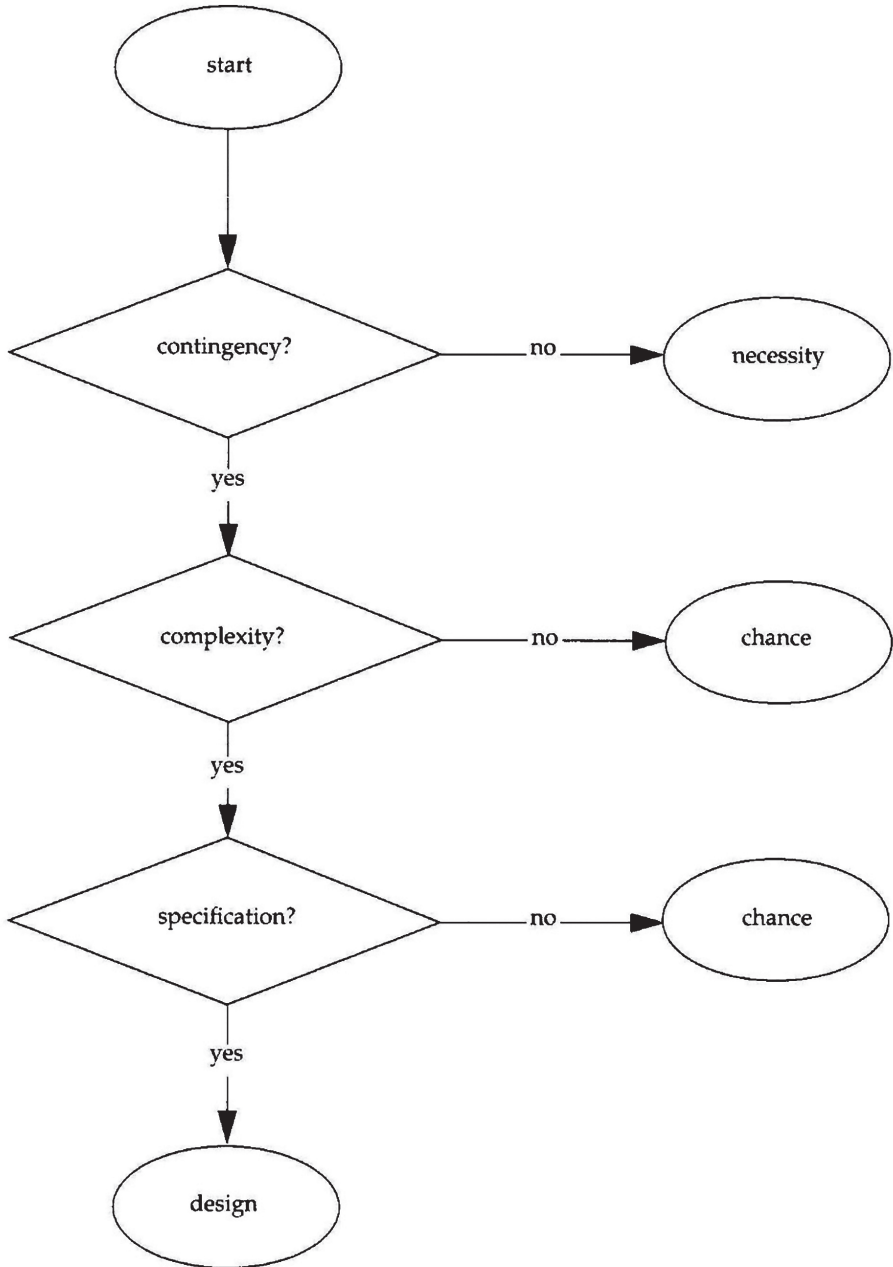
This information-theoretic approach to specified complexity associated with the design inference, the complexity-specification criterion, and the Explanatory filter...Here, then, is the connection between intelligent design and information theory; detecting design by means of the complexity-specification criterion is equivalent to identifying complex specified information.³⁹⁰

Dembski has come up with a brilliantly simple description of the *Explanatory Filter*, which deserves to be displayed here on the following page. This device helps explain which of three possible modes of explanation pertain: necessity, chance, and/or design. To see which of these modes is sufficient to apply to a given example, this filter, arranged as a sequential flowchart, helps to sort out three foundational questions: Is it contingent? Is it complex? Is it specified? By so displaying this information, Dembski's flowchart enables one to represent specific complexity as a criterion for detecting design. This works by plugging in the events at the "start" node, and then passing them

through the decision nodes. An example of a safe combination lock having one right specific number containing ten digits, would have 10 billion possible combinations, only one of which is right. Just randomly twirling the numbers in one direction or another would be truly complex or highly improbable, although not absolutely improbable. Therefore, this sequence takes one down to the 3rd decision node. However, if it were only complex and not specified, it could still be attributed to chance. Chance can account for sheer complexity apart from specification. But this event is specified by the lock's tumblers, thus it passes to the terminal "design" node. To open this, one must dial the correct combination.³⁹¹

Not unexpectedly, the Explanatory Filter was met with some criticism by evolutionists. These have been squarely met by Dembski. For example, one easily answered objection was that this filter attributes merely improbable events to design. However, this filter is more subtle than that. In addition to identifying complexity or improbability, the filter needs to identify a specification before attributing design.³⁹²

Another criticism raised was that the filter would assign to design regular geometric objects, like ice crystals. However, this criticism fails because those shapes form as they do, due to necessity, rather than to design. This observation applies to other self-organizing systems as well.³⁹³



An interesting criticism was raised by Gert Korthof (home.planet.nl) who speculated that the filter mistakenly attributes design to certain regular arithmetic sequences that arise in the growth of biological systems.—sequences that instead ought to be attributed to natural necessities. He cites as an example the Fibonacci sequences (for which each number is the sum of the two previous numbers) characterize the arrangement of leaves on the stems of certain plants. This led Korthof to state his view that the Explanatory Filter is implicated in a contradiction. However, Demski points out that this is only an apparent contradiction since the fault is not with the Filter but with a misuse of the term *natural*. Dembski asks in what is the operation of that process natural, or the origin of that process natural? “Just because the operation of a process is “perfectly” natural, that does not mean that its origin is “perfectly” natural. The origin and design of biological systems that display Fibonacci behavior are themselves in question. Dembski also illustrates the shortcomings of this argument by observing:

Korthof’s example is logically equivalent to a computer programmed to output Fibonacci sequences. Once suitable programmed, the computer operates by necessity. Consequently, its outputs, when fed into the filter, will land at the necessity node of the filter. The computer-generated Fibonacci sequences derive, as Korthof might put it, from a “perfectly natural process.” But whence the computer that runs the program? And whence the program? All the computer hardware and software in our ordinary experience is properly referred not to necessity but to design.³⁹⁴

The important distinction to be made is between the “natural,” or “lawlike,” or “mechanistic” operation of a thing and its designed origin. Natural forces can only serve as conduits of design. Thus, the benefit of the Explanatory Filter is contingent upon its correct usage, involving inputting the right events, objects and structures into the filter.

In a rather humorous article titled “The Advantages of Theft over Toil: The Design Inference and Arguing from Ignorance,” written for the journal

Biology and Philosophy, authors John Wilkins and Westley Elsberry argued that the *Explanatory Filter* is an unreliable indicator of design because one must display the full range of natural necessities and chance process that might have been operating to account for a phenomenon because, otherwise, one might omit an undirected natural cause rendering the phenomenon likely and capable of accounting adequately for it without design. Looking at the combination lock example given above, they argue that a poorly constructed lock might have much better probabilities of opening it by chance than one in ten billion. Granted, but, as Dembski answered, the same lock, if less than excellently well-constructed, might require very precisely dialing the numbers or the chance of opening it by chance would be far smaller than one in ten billion. Subjecting this combination lock to further scrutiny could thus upset or reinforce a design inference.

The prospect of further knowledge upsetting a design inference is in fact a risk endemic to all scientific enquiries. This has to do with the problem of induction whereby, if one is wrong about the regularities which operated in the past and apply in the present, one must at some point decide whether a sufficient amount of investigation into a phenomenon is enough to “reasonably rule out natural necessities and chance processes as its cause. Yet if design in nature is real, [Wilkins’ and Elsberry’s] recommendation ensures we’ll never see it.”³⁹⁵

The reliability of the *Explanatory Filter* has to do with its accuracy in detecting design, so long as we have accurately assessed the probabilities. Wilkins and Elsberry’s criticism has more to do with the applicability than with the reliability of the filter. Dembski correctly points out that “...to so refuse the *Explanatory Filter*’s applicability irrationally privileges undirected natural causes and renders them immune to disconfirmation.”³⁹⁶

Examples have been given earlier in this book about the risks involved in engaging in scientific discovery. One sometimes finds it is necessary to undergo complete revisions of earlier scientific advances. However, when one when it comes to design,

...authors such as Wilkins and Elsberry want their science safely fortified “within a naturalistic cocoon that excludes any place for design in the natural science. But such a risk-free science is no science at all. It knows the truth without looking. So when evidence comes that challenges it, it arbitrarily rules that evidence inadmissible.”³⁹⁷

Another argument against the *Explanatory Filter* has to do with the supposed inability of the filter to account for the joint action of chance and necessity, as these play out in the Darwinian mechanism of natural selection (the necessary component) and random variation (the chance component). This Darwinian mechanism allegedly delivers all the biological complexity that the filter attributes to design. If true, this objection would overthrow the Filter. Dembski

...approaches chance and necessity as a probabilist for whom necessity is a special case of chance in which probabilities collapse to zero and one. (Think of a double-headed coin: what is the probability that it will land heads?) ...Chance as I characterize it thus includes necessity, chance (as it is ordinarily used) and the combination of these. The filter could therefore be compressed by assimilating the necessity node into the chance nodes, though at the expense of making the filter less user-friendly. At any rate, the filter is robust and fully applicable to evaluating the claims of Darwinism.³⁹⁸

A further objection has been raised that the Explanatory Filter makes necessity, chance and design mutually exclusive and exhaustive. According to this objection, chance (seen as mutations and disorder generally), necessity (seen as physical laws and natural selection) and design (God as planner) are separated into mutually exclusive and exhaustive categories. Dembski denies this is so. All three can be concurrent, but one of the modes of explanation will predominate. What enables the filter to detect design is specified complexity, and this is where the Explanatory Filter comes in—to

provide a user-friendly way to establish specified complexity. To successfully refute the utility of the *Explanatory Filter*, it would be necessary to prove that specified complexity is an inadequate criterion for detecting design.

However, Dembski has successfully argued that specified complexity is an adequate criterion for detecting design. This is so because the target group for the specified complexity criterion comprises all things intelligently caused. The things science tries to explain have causal histories. In some of these histories, intelligent causation is essential while in others, it is dispensable. An example of these would be a poem written in ink as opposed to an accidental inkblot.

To carefully assign something to the target group of intelligently caused things, we must be confident that it is in fact intelligently caused or else we have a problem with false positives. On the other extreme, there is the problem of false negatives that arises when we fail to assign something to the target group, whereas it is in fact intelligently caused. It is difficult to be certain that something had no intelligent designed in its formation. Detecting *Intelligent Design* requires background knowledge. It takes an intelligent cause to detect an intelligent cause. Lacking sufficient background knowledge, we can miss that. This problem of false negatives therefore arises either when an intelligent agent has acted to conceal its actions or when an intelligent agent lacks knowledge essential for detecting it. The complexity-specification criterion of course has its limits, but should that be an encouragement to Darwinists?

Actually not, according to Dembski. The criterion does crucially important work by detecting intelligent causes intent on making their presence evident, and even many that are not. Professional spies try strenuously to conceal their actions. However, intellectuals strive to ensure their intellectual properties get properly attributed with patents and copyright protection.

The real work of the specified complexity criterion is that of detecting design; not for eliminating design. While in some instances, things will occasionally be thought to be designed, while they are in fact not, such false

positive cases do not undermine the criterion. Neither do the cases of false negatives, wherein we pass over cases that are designed while appearing to not be designed. The important thing is to have a “net” that will enable us to catch what we intend that it catches—things that are designed. A carefully crafted complexity-specification criterion provides the confidence that what we judge to be designed is in fact designed.

The justification for the claim that the complexity-specification criterion successfully avoids false positives is based on an inductive generalization: in every instance in which specified complexity is present and where the underlying causal history is known, design is present as well. “Where direct, empirical corroboration is possible, design actually is present whenever specified complexity is present.”³⁹⁹

Such things cannot be explained in terms of all material mechanisms (not only those that are known but all of them, thanks to the universal probability bound of 1 in 10^{150} ... Indeed, to attribute specified complexity to something is to say that the specification to which it conforms corresponds to an event that is vastly improbable with respect to all material mechanisms that might give rise to the event. So, take your pick—treat the item in question as inexplicable in terms of all material mechanisms, or treat it as designed. But since design is uniformly associated with specified complexity when the underlying causal story is known, induction counsels attributing design in cases where the underlying causal story is not known... For specified complexity to detect design, the probability of the thing in question must be small with respect to every probability distribution that might characterize it. Then a design inference follows.⁴⁰⁰

Insofar as chance is concerned, Dembski looks at it very broadly, and submits it to anything that can be captured mathematically by a stochastic process. Stochastic processes constitute the most general mathematical model for describing the interplay of chance and necessity over time. It thus includes deterministic processes whose probabilities all collapse to zero

and one (such as necessity, regularities and natural laws). It also includes nondeterministic processes, like evolutionary processes that combine random variation and natural selection. Indeed, chance so construed characterizes all undirected natural processes that could preclude design. The only reasonable possibility left, in that case, would be design.⁴⁰¹

The question then arises: what does one do about dispensing with the probability distributions induced by material mechanisms, and if this can be done with confidence? If the probability distributions in question are those induced by known material mechanisms operating in known ways, then specified complexity can and indeed must dispense with them. Specified complexity also requires eliminating all probability distributions induced by any material mechanisms that might be operating, including those that are unknown, but how can specified complexity dispense with them?

Specified complexity can dispense with unknown material mechanisms provided there are independent reasons for thinking that explanations based on known material mechanisms will not be overturned by yet-to-be identified unknown mechanisms. These independent reasons typically take the form of arguments from contingency that invoke numerous degrees of freedom. Sometimes, they take the form of arguments from exhaustion (e.g., alchemistic efforts to transform lead into gold) when convinced it cannot be done. Often additional theoretical grounds reinforce the argument from exhaustion, such as, for example, modern chemistry's capacity to do some atomic reconstructions by particle accelerators, etc.

There must be solid handles on relevant probability distributions before one can attribute specified complexity with any confidence, and this can only be done on a case-by-case basis. Dembski compares agricultural fertilizer experiments with experimenting with combination locks, the latter's possible motions being well known as opposed to the multiple factors determining which fertilizer might work best in a given field. But material mechanisms cannot prescribe the exact turns that open the lock. From the vantage of material mechanisms, one combination would be as good as any other.

Combination locks exhibit numerous degrees of freedom in their possible combination, thus offering their security. But precisely because each possible combination is physically realizable, material mechanisms as such cannot mandate one combination to the exclusion of the rest. For that, we need initial and boundary conditions which describe the precise circumstances within which material mechanisms may act. In this example, the opening of the combination lock depends on the initial condition, the arrangement of the tumblers of the lock.

Thus, to establish that no material mechanism explains a phenomenon, one typically establishes that it is compatible with the known material mechanisms involved in its production but that these mechanisms also permit any number of alternatives to it (a wide range of initial and boundary conditions, which constitute the degrees of freedom under which the material mechanisms may operate. By being compatible with but not required by the known material mechanisms involved in its production, a phenomenon becomes irreducible not only to the known mechanisms but also to any unknown mechanisms because known mechanisms would then have to respect that contingency and allow for the degrees of freedom already discovered.

Michael Polanyi described this method for establishing contingency via degrees of freedom in the 1960s. He used this method to argue for the irreducibility of biology to physics and chemistry, but it applies rather generally.

The position of Scrabble pieces on a Scrabble board is irreducible to the natural laws governing the motion of Scrabble pieces, the configuration of ink on a sheet of paper is irreducible to the physics and chemistry of paper and ink, the sequencing of DNA bases is irreducible to the bonding affinities between the bases, and so on.

By establishing a range of possibilities on the basis of known material mechanisms, this method precludes unknown material mechanisms from constricting that range. Scrabble pieces, for instance, can be sequenced in all possible arrangements. For an unknown material

mechanism to preclude or prefer some arrangement, it must be suitably constrained by boundary conditions. But then these boundary conditions must in turn allow at least as many degrees of freedom as the possible arrangements of Scrabble pieces (otherwise, there would not be complete freedom in the sequencing of Scrabble pieces, which we know there is). It is this regress from the output of material mechanisms to their boundary-condition input that demonstrates the inadequacy of material mechanisms to originate specified complexity. At best, material mechanisms can shuffle around preexisting specified complexity embedded in initial and boundary conditions.⁴⁰²

To sum up, then, the reliability of specified complexity as a criterion for detecting design must be understood in relation to all material mechanisms that might be operating in a given circumstance. The criterion is reliable at detecting design, provided all material mechanisms that might be operating in a given circumstance are eliminated. Nevertheless, we can in practice only eliminate the material mechanisms we know about. Dembski further argues that the possible divergence between known mechanisms and all mechanisms, (known and unknown) may seem to undercut the complexity-specification criterion, it really doesn't. If, for example, there are independent reasons why the probability distributions induced by known mechanisms are secure against unknown mechanisms, then the criterion sweeps the field of all mechanisms that could preclude design.

In thereby eliminating all material mechanisms, we are not saying that a phenomenon is inherently unexplainable. Rather, we are saying that material mechanisms don't explain it and that design does. This conclusion of design derives not from an overactive imagination but simply from following the logic of induction where it leads: *In cases where the underlying causal history is known, specified complexity does not occur without design. Specified complexity, therefore, provides inductive support not merely for inexplicability in terms of material mechanisms but also for explicability in terms of design.* Dembski emphasizes that it is not an "either-or" situation, pitting material

mechanisms against design; rather it's a question of one-or-both, pitting material mechanisms taken in isolation against material mechanisms working in tandem with design.

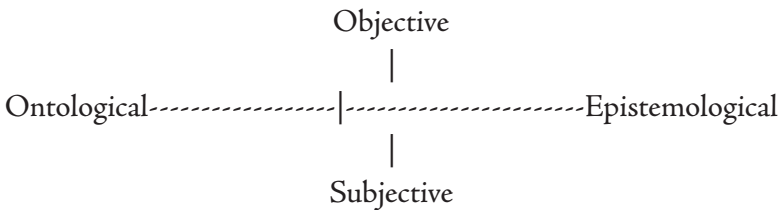
Specified Complexity is a property that things can or cannot possess. But in what sense is specified complexity a property? There are objective properties, such as solidity and fluidity, and there are also subjective properties. For example, Beauty is a property that can be both objective, meeting certain criteria, and subjective, depending on who is doing the evaluating. For René Descartes, the distinction between objective and subjective properties was important to science. For Descartes, material objects had one primary quality: extension. The other properties of matter, its color or texture, for example, were secondary qualities that described how matter, due to its configuration or extension, affected our senses. Modern physics has refined his notions in some ways, however. For example, color is now treated as the wavelength of electromagnetic radiation and is regarded as a primary quality, even though the subjective experience of color is still regarded as a secondary quality.⁴⁰³

The concern is therefore raised that specified complexity might be entirely a subjective property, with no way of grasping nature at its ontological joints that thus has no way of providing science with a valid tool for inquiry. To show that this worry is misplaced, Dembski offers the following illustration:

Consider the following three properties: X is solid; X is married, and X is beautiful. The property X is solid is objective. X is beautiful seems thoroughly subjective...Peoples' assessments of beauty differ drastically....If specified complexity is subjective in the same way as beauty is, then specified complexity cannot be a useful property for science. But what about X is married? It is certainly an objective fact about the world, ...and yet there is an irreducibly subjective element to this property as well; unlike the solidity of rocks, say, which is simply a fact about nature and does not depend on human subjects, marriage is a social institution that depends intimately on human subjects. Whereas solidity is purely objective and beauty

purely subjective, marriage is at once objective and subjective.... Social realities are objective in the sense that they command intersubjective agreement and express facts, rather than mere opinions about the social world we inhabit. But they exist within a social matrix, which in turn presupposes subjects and therefore entails subjectivity.⁴⁰⁴

Dembski follows the discussion of objectiveness/subjectiveness in social realities by using the helpful notions provided by John Serle in his book titled *The Construction of Social Reality*.⁴⁰⁵ Social realities are objective in the sense that they command intersubjective agreement and express facts about the social world we live in. However, they exist in a social matrix, which presupposes subjects and subjectivity. Examples of these would be marriage, money and mortgages. The matrix can be visually described in the square below, which provides an overview of the objective-subjective distinction enhanced by the ontological (referring to what actually exists) – epistemological (referring to what we know).



According to this synthesis, solidity is an ontologically objective state of nature, while beauty is epistemologically subjective: and societal realities like money, mortgages and marriage are ontologically subjective but epistemically objective. Therefore, marriage is ontologically subjective, depending on social conventions, but epistemically objective and marriage disputes can be objectively settled on the basis of social conventions.⁴⁰⁶

Dembski argues that Searle's useful categories can be applied to specified complexity in the following way. They apply in two parts, which correspond to the two parts that make up specified complexity.

Specified Complexity involves a specification, a pattern conditionally independent of some observed outcome. Specified complexity also involves an assignment of complexity (improbability) to the event associated with that pattern. Specifications, by being conditionally independent of the outcomes they describe, are thus epistemically objective and, furthermore, once a specification is given and the event it represents is identified, the probability of that outcome is ontologically objective. To illustrate, one can view a quantum mechanical experiment in which polarized light is sent through a polarizing filter whose angle of polarization is at 45 degrees with that of the light. According to quantum mechanics, the probability of any photon getting through the filter is 50%, and each photon's probabilities of getting through is probabilistically independent of the others. This quantum mechanical experiment therefore models the flipping of a fair coin (heads = photon passes through the filter; tails = photon doesn't pass through the filter), though without the possibility of any underlying determinism undermining the randomness (assuming quantum mechanics delivers true randomness).

Suppose now that we represent a photon passing through the filter with a one (instead of with heads) and a photon not passing through the filter with a zero (instead of with tails). Consider the specification 1101110111110111111..., namely the sequence of prime numbers in unary notation...For definiteness let's consider the prime numbers between 2 and 101. This representation of prime numbers is ontologically subjective in the sense that it depends on human subjects who know about prime numbers and unary notation. It is also epistemically objective inasmuch as arithmetic is a universal aspect of rationality. Moreover, once this specification of primes is in place, the precise probability of a sequence of photons passing through the filter and matching it is ontologically objective. Indeed, that probability will depend solely on the inherent physical properties of photons and polarizing filters. Specified complexity,

therefore, is at once epistemically objective (on the specification side) and ontologically objective (on the complexity side once a specification is in hand).⁴⁰⁷

Specified complexity thus avoids the charge of epistemic subjectivity which, if true, would relegate specified complexity to mere opinion. It also displays epistemic objectivity, and its measures of complexity are ontologically objective. Thus, this is an objective tool for science. We formulate specifications based on background knowledge, and complexity in specified complexity is resident in nature. This form of complexity corresponds to a measure of probability. Probabilities depend on the way in which nature is constituted and our understanding of these probabilities is only partial, at best, but in this case, science can serve as a bridge between complexity subsistent in nature and our assessments of that complexity. Therefore, as Dembski posits it, specified complexity is a coherent scientific property; it is a well-defined, objective and reliable criterion for detecting design and can be attributed to particular objects or events in nature.⁴⁰⁸

With regard to specified complexity's coherence, objectivity and reliability for detecting design, this is established, but how is it applicable, in concrete terms, to settle questions about design? Dembski tackles this problem with the use of the philosophical term of *assertibility* (spelled intentionally with letter "i"), which is the epistemic or rational justification for a claim. It seems that critics of *Intelligent Design* sometimes demand a standard of "mathematical proof" before they will accept specified complexity as a legitimate tool for science. However, a requirement for strict proof, while legitimate in math, is misplaced in the natural sciences. These make empirically-based claims, and such claims are always falsifiable. Even Newtonian Mechanics, which for a time defined physics, ended up being falsified. Errors in measurement, incomplete knowledge, limited theoretical insight and the problem of inductions cast a shadow over all scientific claims. But the shadow of falsifiability does not incapacitate science, although science claims are in fact tentative. Thus, we need to look closely at how scientific claims are justified. Authentic and justifiable scientific practices

make use of standards that allow science to progress, without becoming incapacitated. These standards are balanced with the requirement for self-correction in the light of further evidence. This of course is not present in mathematics, where strict logico-deductive proof is required. Science cannot work the same way.⁴⁰⁹

To justify ascribing specified complexity to natural structures, Dembski draws an analogy between the regularity of numbers and the specified complexity of natural structures, pointing out where the analogy holds (in making claims about some objective underlying fact) and where the analogy limps. In the case of regularity, it is an underlying mathematical fact; the decimal expansions of numbers either exemplify—or not—regularity. However, in the case of specified complexity, we are dealing with an underlying physical fact in which a biological system either exemplifies—or not—specified complexity. In cases where no design or teleology was assumed to be involved in the production of some event, the event has a certain probability based on natural causal mechanisms. That probability in turn maps onto an associated measure of complexity. Whether the level of complexity is high enough to qualify the event as exemplifying specified complexity depends on the physical conditions surrounding the event. Any problem ascribing specified complexity to that event therefore resides not in its coherence as a meaningful concept: it resides in the *assertibility* of the claim. A claim is assertible if we are justified asserting it. By analogy, a claim that the letter “pi” is “regular,” is in all probability a regular number, but at least for the present the regularity of pi is unassertible (the current record of decimal digits of pi is over 200 billion, each of them between zero and nine and has relative frequency of about 10 percent). But without a mathematical proof of pi’s regularity, we have no justification for asserting that pi is regular. But what about the specified complexity of various biological systems? Are there any biological systems whose specified complexity is assertible?⁴¹⁰

Critics of *Intelligent Design* argue that no attribution of specified complexity to any natural system can ever be assertible because if some natural system exemplifies specified complexity, then it must be vastly improbable with

respect to all purely natural mechanisms that could be operating to produce it. But that means calculating a probability for each such mechanism, which is a practical impossibility. At best, science could show that a give natural system is vastly improbable with respect to known mechanisms operating in known ways and for which the probability can be estimated. But that omits: first, known mechanisms operating in known ways for which the probability cannot be estimated; and second, known mechanisms operating in unknown ways; and third, unknown mechanisms. Thus, even if it is true that some natural system exemplifies specific complexity, Dembski argues we could never legitimately assert its specified complexity, much less know it. Therefore, this is no more than an argument from ignorance.⁴¹¹

The problem with this line of reasoning is that science must work with available evidence and, on that basis alone, formulate the best explanation of the phenomenon in question. This means that science cannot explain a phenomenon by appealing to the promise, prospect or possibility of future evidence. If known material mechanisms can be shown incapable of explaining a phenomenon, then it is an open question whether any mechanisms whatsoever are capable of explaining it. If, further, good reasons exist for asserting the specified complexity of certain biological systems, then design itself becomes assertible in biology.⁴¹²

Using as an example the bacterial flagellum, despite enormous research to date, there is no good mechanistic account of its origin. Thus, there is no evidence against its being complex and specified. It is therefore a live possibility that it is complex and specified. But is it fair to assert that it exhibits specified complexity? It is irreducibly complex, meaning that all its components are indispensable for its function as a motility structure. It is also minimally complex, meaning that any structure performing the bacterial flagellum's function as a bidirectional motor-driven propeller cannot make do without its basic components. Thus, no direct Darwinian pathway exists that incrementally adds these basic components and therewith evolves a bacterial flagellum. An indirect Darwinian pathway

is required, in which precursor systems performing different functions evolve by changing functions and components over time. (Darwinians refer to this as *coevolution* and *co-optation*. Plausible as this might sound to Darwinists, there is no convincing evidence for it, and engineering evidence suggests strongly that tightly integrated systems like the bacterial flagellum are not formed by trial-and-error tinkering in which form and function coevolve. Rather, as Dembski argues, such systems are formed by a unifying conception that combines disparate components into a functional whole—in other words, by design.⁴¹³

Looking then at the bacterial flagellum to see if one can assert specified complexity, one sees that the bacterial flagellum is specified. We can hold this view on the grounds that humans developed bidirectional motor-driven propellers years prior to the discovery by electronic microscopes that the flagellum was just such a machine. Independent invention makes it clear that the system satisfies independent functional requirements and therefore is specified. Can, in this case and other similarly complex cases, the Darwinian mechanism, by employing natural selection, overcome the vast improbabilities that arise in such systems? To overcome a vast improbability, the Darwinian mechanism attempts to break it into a sequence of more manageable probabilities.⁴¹⁴

Irreducible and minimal complexity challenge the Darwinian assumption that vast improbabilities can always be broken into manageable probabilities. What evidence there is suggests that such instances of biological complexity must be attained simultaneously. In such cases, gradual Darwinian improvement offers no help in overcoming their improbability. Thus, when we analyze structures like the bacterial flagellum probabilistically based on known material mechanisms operating in known ways, Dembski rightly concludes they are highly improbable and therefore complex in the sense required by specified complexity.⁴¹⁵

Darwinists who arrive at this point in the argument still say that design theorists have failed to take into account indirect Darwinian pathways in which this might have evolved through a series of intermediate systems

that changed function and structure over time in ways that we do not yet understand. However, says Dembski, there is simply no convincing evidence for such indirect Darwinian evolutionary pathways to account for biological systems that display irreducible and minimal complexity. All that Darwinists have done until now is identify subsystems of the bacterial flagellum that could serve some biological function of their own—much as the motor of a motorcycle might serve some function on its own (perhaps as a heater or blender). But there's nothing exceptional here for design: designed subsystems that perform one function are typically made up of designed subsystems that have their own function.

But is this, then, where the debate ends—with evolutionary biologists chiding design theorists for not working hard enough to discover those unknown indirect Darwinian pathways that lead to the emergency of irreducibly and minimally complex biological structures like the bacterial flagellum? Although this may seem like an impasse, it really isn't. Like compulsive gamblers who are constantly hoping that some big score will cancel their debts, evolutionary biologists live on promissory notes that show no sign of being redeemable. As noted before, science must form its conclusions based on available evidence, not on the possibility of future evidence. If evolutionary biologists can discover or construct detailed, testable, indirect Darwinian pathways that account for the emergence of irreducibly and minimally complex biological systems like the bacterial flagellum, then more power to them—intelligent design will quickly pass into oblivion. But until that happens, evolutionary biologists who claim that natural selection accounts for the emergence of the bacterial flagellum are worthy of no more credence than compulsive gamblers who are forever promising to settle their accounts.

Evolutionary biologists cannot even justify looking to future evidence by pointing to current progress because they have not made any meaningful progress accounting for biological complexity...

They're like compulsive gamblers, owing millions of dollars to the local loan shark, begging for an extension but without being able to point to a short track record of rehabilitation, steady work or even a few hundred dollars of repayment money. What is the origin of biological complexity, and how it is to be explained? For all the insights evolutionary biology has brought to bear on this question, we might just as well return to the state of biology prior to Darwin. Evolutionary biology has no idea whatsoever how to answer this question.⁴¹⁶

There is further reason to be skeptical of evolutionary biology and side here with intelligent design. In the case of the bacterial flagellum, what keeps evolutionary biology afloat is the possibility of indirect Darwinian pathways that might account for it. Practically speaking, this means that even though no slight modification of a bacterial flagellum can continue to serve as a motility structure, a slight modification could serve some other function. But there is now mounting evidence of biological systems for which any slight modification does not merely destroy the system's existing function but also destroys the possibility of any function of the system whatsoever. (Consult, for instance, the research on extreme functional sensitivity of various enzymes and on irreducibly complex metabolic pathways of enzymes for which each enzyme needs to attain a certain catalytic threshold before it or its associated pathway can serve any biological function at all.) For such systems, neither direct nor indirect Darwinian pathways could account for them. In that case, we would be dealing with an in-principle argument showing not simply that no known material mechanism is capable of accounting for the system, but also that any unknown material mechanism is incapable of account for it as well. The argument here turns on an argument from contingency and degrees of freedom.⁴¹⁷

Thus, to establish that no material mechanism explains a phenomenon, we must establish that it is compatible with the

known material mechanisms involved in its production, but that these mechanisms also permit any number of alternatives to it... because known material mechanisms can tell us conclusively that a phenomenon is contingent and allows full degrees of freedom. Any unknown mechanism would therefore have to respect that contingency and allow for the degrees of freedom already discovered.⁴¹⁸

Consider, for instance, a configuration space comprising all possible character sequences from a fixed alphabet. Configuration spaces are perfectly homogeneous, with one character string geometrically interchangeable with the next. The geometry therefore precludes any underlying mechanisms from distinguishing or preferring some character strings over others. Not material mechanisms but external semantic information (in the case of written texts) or functional information (in the case of biopolymers) is needed to generate specified complexity in these instances. To argue that this semantic or functional information reduces to material mechanisms is like arguing that Scrabble pieces have inherent in them preferential ways they like to be sequenced. They don't. Michael Polanyi made such arguments for biological design in the 1960s. Stephen Meyer has updated them for the present.

So, is the claim that the bacterial flagellum exhibits specified complexity assertible? You bet. Science works with available evidence, not with vague promises of future evidence. Our best evidence points to the specified complexity and therefore design of the bacterial flagellum. It is therefore incumbent on the scientific community to admit, at least provisionally, that the bacterial flagellum is designed. Nor should opponents of intelligent design comfort themselves with any misplaced notion that the intelligent design movement is and will be powered solely by the bacterial flagellum. Assertibility comes in degrees, corresponding to the strength of evidence that justifies a claim. That the bacterial flagellum exhibits specified complexity is highly assertible—this

despite the logical impossibility of ruling out the infinity of possible indirect Darwinian pathways that might give rise to it. Yet for other systems, like enzymes that exhibit extreme functional sensitivity, there could be compelling grounds for ruling out such indirect Darwinian pathways as well. The assertibility for the specified complexity of such systems could therefore prove stronger still.⁴¹⁹

The evidence for intelligent design in biology is thus most probably going to grow increasingly stronger. As Dembski says,

There's only one way evolutionary biology can defeat intelligent design, and that is by in fact solving the problem that it claimed all along to have solved but in fact never did—to account for the emergence of multipart, tightly integrated complex biological systems (many of which display irreducible and minimal complexity) apart from teleology of design. To claim that the Darwinian mechanism solves this problem is false. The Darwinian mechanism is not itself a solution but rather a template for the type of solution that Darwinists hope can solve the problem. Templates, however, require details, and filling in the details of their template is the one thing Darwinists never do. That's why molecular biologist James Shapiro, who is not a design theorist, writes, "There are no detailed Darwinian accounts for the evolution of any fundamental biochemical or cellular system, only a variety of wishful speculations." (Quoted from his 1996 book review of *Darwin's Black Box* that appeared in the *National Review*.)

In summary, Specified Complexity is a well-defined property that can be meaningfully affirmed or denied of events and objects in nature. Specified complexity is an objective property; specifications are epistemically objective, and complexity is ontologically objective. Any concern over specified complexity's legitimacy within science rests not with its coherence or objectivity but with its assertibility—with whether, and the degree to which, ascribing specified complexity to some natural object or event is justified. Any blanket attempt to render specified complexity unassertible give naturalism an unreasonable advantage, ensuring that design cannot

be discovered even if it is present in nature. Whereas naturalism looks to future evidence to overturn intelligent design, science can proceed only on the basis of available evidence. As a consequence, ascriptions of specified complexity to natural objects and events, and to biological systems in particular, can be assertible. And indeed there are actual biological systems for which ascribing specified complexity—and therefore design—is eminently assertible.⁴²⁰

The CHANCE OF THE GAPS.

Scientists rightly worry about the *God of the Gaps*, in which God is used as a stopgap for ignorance. But *chance can play exactly this role also*. Science therefore must eliminate chance when the probability of events gets too small. If not, chance can be invoked to explain everything. High improbability by itself, however, is not enough to preclude chance. Mere improbability therefore fails to rule out chance. In addition, improbability needs to be joined with an independently given pattern. Dembski illustrates:

An arrow shot randomly at a large blank wall will be highly unlikely to land at any one place on the wall. Yet, land somewhere it must, and so some highly improbable event will be realized. But now fix a target on that wall and shoot the arrow. If the arrow lands in the target and the target is sufficiently small, then chance is no longer a reasonable explanation of the arrow's trajectory.

Highly improbable, independently patterned events exhibit specified complexity, which is a reliable empirical marker of intelligent agency. Nevertheless, a persistent worry about small probability arguments remains: given an independently given pattern, or specification, what level of improbability must be attained before chance can legitimately be precluded?⁴²¹

There is also the need for a concept of a probabilistic resource, according to Dembski. A probability is never small in isolation but only in relation to a set of probabilistic resources that describe the number of relevant ways an

event might occur or be specified. Thus, there are two types of probabilistic resources: *replicational* and *specificational*. In the example of the archer, the targets on the wall constitute the archer's specificational resources; the arrows in the quiver constitute the archer's replicational resources.

Probabilistic resources comprise the relevant number of ways an event can occur (replicational resources) and be specified (specificational resources). The important question for Dembski therefore is not "what is the probability of the event in question?" but rather, "what does its probability become after all the relevant probabilistic resources have been factored in?" He specified that probabilities can never be considered in isolation but must always be referred to a relevant reference class of possible replications and specifications. A seemingly improbable event can be quite probable when placed within the appropriate class of probabilistic resources. On the other hand, it may remain improbable even after all the relevant probabilistic resources have been factored in. If it remains improbable, and the event is also specified, then it exhibits specified complexity.

In the observable universe, probabilistic resources come in limited supplies. In fact, it can be shown that any specified event of probability less than 1 in 10^{150} will remain improbable even after all conceivable probabilistic resources from the observable universe have been factored in. ... A probability of 1 in 10^{150} is therefore a *universal probability bound*. A specified event of probability less than this universal probability bound cannot be rendered reasonably probable even if all available probabilistic resources in the known universe are brought to bear against it.⁴²² To illustrate this point, Dembski states:

Implicit in a universal probability bound such as 1 in 10^{150} is that the universe is too small a place to generate specified complexity by sheer exhaustion of possibilities. Stuart Kauffman develops this theme at length in his book *Investigations* (Oxford University Press, 2000). In one of his examples, ...he considers the number of possible proteins of length 200 (i.e., 20^{200} or approximately 10^{260}) and the maximum number of pairwise collisions of particles

throughout the history of the universe (he estimates 10^{193} total collisions supposing the reaction rate for collisions is measured in femtoseconds). Kauffman concludes that the known universe hasn't had time since the Big Bang to run through all possible proteins of length 200 even once. To emphasize this point, he notes it would take more than 10^{67} times the current time span of the universe to construct all possible proteins of length 200 even once. Kauffman even has a name for numbers that are so big that they are beyond the reach of operations performable by and within the universe—*transfinite*.

Kauffman writes about the universe being unable to exhaust some set of possibilities. Yet at other times he puts an adjective in front of the word "universe" claiming it is the *known universe* that is unable to exhaust some set of possibilities. Is there a difference between the *universe* and the *known* or *observable universe*? To be sure, there is no empirical difference. Our best scientific observations tell us that the world surrounding us appears quite limited....For instance, if the universe were a giant computer, it could perform no more than 10^{150} operations. Quantum Computation, by exploring superposition of quantum states enriches the operations performable by an ordinary computer but cannot change their number.

But what if the universe is in fact much bigger than the known universe? What if the universe is but an infinitesimal speck within the actual universe? Alternatively, what if the known universe is but one of many universes, each of which is as real as the known universe, but casually inaccessible to it? If so, are not the probabilistic resources needed to eliminate chance vastly increased, and is not the validity of 1 in 10^{150} as a universal probability bound thrown into question? This line of reasoning has gained widespread currency among scientists and philosophers in recent years. But in fact, this line of reasoning is fatally flawed. It is illegitimate to rescue chance by invoking probabilistic resources from outside the known universe. To do so artificially inflates one's probabilistic resources.⁴²³

Only probabilistic resources from the known universe may legitimately be employed in evaluating chance hypotheses. In particular, probabilistic resources imported from outside the known universe are incapable of overturning the universal probability bound of 1 in 10^{150} . The rationale for this claim is straightforward: it is never enough to postulate probabilistic resources merely to prop an otherwise failing chance hypothesis: rather, one needs independent evidence whether there really are enough probabilistic resources to render chance plausible.⁴²⁴

Consider for instance a state lottery. Suppose we know nothing about the number of lottery tickets sold and are informed simply that the lottery had a winner. Suppose further that the probability of any lottery ticket producing a winner is extremely low. What can we conclude? Does it follow that many lottery tickets were sold? Not at all. We are entitled to this conclusion only if we have independent evidence that many lottery tickets were sold. Apart from such evidence, we have no way of assessing how many tickets were sold, much less whether the lottery was conducted fairly and whether its outcome was due to chance. It is illegitimate to take an event, decide for whatever reason that it must be due to chance, and then propose numerous probabilistic resources because otherwise chance would be implausible. This is called the *inflationary fallacy*.⁴²⁵

The inflationary fallacy underlies a number of proposals by physicists and philosophers to vastly increase the size of the known universe. There include the bubble universes of Alan Guth's inflationary cosmology, the many worlds of Hugh Everett's interpretation of quantum mechanics, the self-reproducing black holes of Lee Smolin's cosmological natural selection and the possible worlds of David Lewis' extreme modal realist metaphysics. Each of these proposals purports to resolve some problem of general interest and importance in science or philosophy. The details of these proposals are not important here. What is important is that none of them possesses independent evidence for the existence of the entity or process proposed. Independent evidence helps establish a claim apart from any appeal to its explanatory virtue. The demand for independent evidence is a necessary

constraint on theory construction in science so that theory construction does not degenerate into total free play of the mind.⁴²⁶

With the proposals to inflate the known universe, no such independent evidence is forthcoming. Worse yet, no such independent evidence can be forthcoming. Each of these proposals entails a universe that is effectively infinite (though the portion accessible to us is quite finite). Now the problem with an infinite universe is that human investigators can have no empirical access to its infinity.⁴²⁷

...Any scientific theory that is the product of a single human scientist will ...have to be made on the basis of no more than one zettabyte (10^{21} bytes) of information. Any scientific theory that is the produce of N human scientists will therefore have to be made on the basis of N zettabytes of information. Now the only obligation of an empirically adequate scientific theory is that it be faithful to these few zettabytes of information. Thus, a scientific theory that posits an infinite universe necessarily exceed anything that empirically warranted. Call it physics untethered to observation or call it metaphysics, it doesn't matter. The infinite is beyond empirical observations which means that any appeal to the infinite in our scientific theories signifies not that our finite experience has given us a window on the infinite but rather that we are using infinity as a construct to approximate our finite experience.⁴²⁸

The only way around these strong finiteness limitations on human experience is for humans to transcend their biology. Christianity holds out such a possibility through the resurrection of Jesus Christ, through whom our bodies will transform into spiritual bodies. However, the materialist does not have that option. As they are confined to understanding all of reality in terms of material mechanisms, the best the materialist can do is merge humans with machines and thereby increase human sensory and processing capacities... (See Ray Kurzweil's *The Age of Spiritual Machines*). However, there is no evidence that consciousness and the sensory experience that goes

with it, has anything to do with complexity or computation. To be sure, on the assumption of materialism, consciousness must reduce to complexity. But consciousness remains a mystery for materialism....

The other problem is that machines are still finite. Even if the entire known universe were a computer, it could never perform more than 10^{150} elementary calculations for the same reason that the universal probability bound is 1 in 10^{150} .

...At no point in such a computer's experience, will anything but a finite number of items of information be stored in memory and a finite number of processing steps be executed.⁴²⁹

Thus, we see that an infinite universe cannot even in principle admit independent evidence. But perhaps an infinite universe's explanatory virtue offsets its inability to admit independent evidence. So, what if an infinite universe cannot be grounded in an empirically based physics?

It can certainly be posited as a metaphysical hypothesis. Indeed, as a metaphysical hypothesis it is increasingly doing a lot of work, not least defeating any form of transcendent design. An infinite universe underwrites unlimited probabilistic resources, and these in turn allow us to dispense with design in nature. Indeed, unlimited probabilistic resources allow us to explain everything by reference to chance—not just natural objects that actually did result by chance and not just natural objects that look designed, but also artificial objects that are in fact designed. And here I don't mean we explain away an artificial object by saying that the designer was merely a coincidence of atoms and energy, environment and genetics, which caused the designer's brain and body parts to move in such a way as to bring about the artificial object. That's precisely the point at issue. In any case, we are still dealing with a designer who, from at least a practical standpoint, consciously set out to create the artificial object. ... There are an infinite number of causally separate universes that allow for even more bizarre possibilities.

Take, for instance, a monkey who, on a single try, randomly types our Milton's *Paradise Lost*. Perhaps Shakespeare was an imbecile who just by chance happened to string together a long sequence of apt phrases. Unlimited probabilistic resources ensure not only that we will never know but also will have no rational basis for preferring one possibility to another.⁴³⁰

Dembski cites the example of Artur Rubinstein playing Liszt's Hungarian Rhapsody no. 2 in C-sharp Minor.

Although the idea that he is a lucky poseur seems absurd, if I take seriously the existence of infinite other worlds, then there is some counterpart to me pondering these very same thoughts, only this time listening to the performance of someone name Artur Rubinstein who is a complete musical ignoramus. How, then, do I know that I am not that counterpart, or that the pianist is the musical genius and not the lucky poseur?

If you paid to hear Rubenstein in Orchestra Hall in Chicago, what would have made you go to hear him? What would be the necessary condition? It would be that he is following a prespecified concert program with skill (i.e., design). He did it largely without errors, although this expert made some errors. In other words, you recognized that Rubinstein's performance exhibited specified complexity.⁴³¹

We use specified complexity to eliminate bizarre possibilities in which chance is made to account for things that we would ordinarily attribute to design. What's more, we use specified complexity to assess the improbability of those bizarre possibilities and to justify eliminating their chance occurrence. That being the case, (And it certainly is the case for human artifacts), on what basis could we attribute natural phenomena that exhibit specified complexity to chance? We are talking here not about analogy, but rather about an *isomorphism*: the specified complexity in artifacts is identical with the specified complexity in biological systems.⁴³²

On what basis, then, could we attribute natural phenomena that exhibit specified complexity to chance? Let's be clear that inflating probabilistic resources does not just diminish a universal probability bound and make it harder to attribute design; inflating probabilistic resources is not a matter of replacing one universal probability bound with another that is more stringent. Inflating probabilistic resources eliminates universal probability bounds entirely: the moment one posits unlimited probabilistic resources, anything of nonzero probability is sure to happen somewhere at some time. This follows from what probabilists call the *strong law of large numbers*.⁴³³

In real practical life, we allow for probability bounds to assess improbability and therewith specified complexity. A sentence or two verbatim repeated by another author can be enough to elicit the charge of plagiarism. In practical life, we don't we tend not to be very conservative in setting probability bounds. In other words, in practical life, we don't demand that something be anywhere near as unlikely as the universal probability bound of 1 in 10^{150} before we rule out chance and infer design.⁴³⁴

The difficulty confronting unlimited probabilistic resources can now be put quite simply: there is no principled way to discriminate between unlimited probabilistic resources to retain chance and using specified complexity to eliminate chance. You can have one or the other, but you cannot have both. And the fact is, we already use specified complexity to eliminate chance. There is no principled way to make the discrimination, but people still make it. For instance, naturalistic scientists often invoke naturalism as a philosophical presupposition and unlimited probabilistic resources as a tool for retain chance when designers unacceptable to naturalism are implicated (e.g., God). Then they will turn around and use specified complexity to eliminate chance when designers acceptable to naturalism are implicated (e.g., Francis Crick's space aliens who seed the earth with life as in his theory of directed panspermia).⁴³⁵

Thus, for artificial objects that exhibit specified complexity and for which an embodied intelligence could plausibly have been involved they would invoke unlimited probabilistic resources and thus attribute chance (or

perhaps simply plead ignorance). Why? Not because it's logical. Indeed, the maneuver is entirely arbitrary. The problem of unlimited probabilistic resources, by raising the question of specified complexity and design inferences, throws naturalism itself into question, and it does no good to invoke naturalism to resolve the problem.⁴³⁶

We are now in a position to see why a designer outside the known universe could in principle be supported by independent evidence whereas an infinite universe never can. We already have experience of human and animal intelligences generating specified complexity. If we should ever discover evidence of extraterrestrial intelligence, a necessary feature of that evidence would be specified complexity. Thus, when we find specified complexity in nature which no embodied, reified or evolved intelligence could plausibly have placed there, it is a straightforward inference to conclude that some unembodied intelligence must have been involved. Granted, this raises the question of how such an intelligence could coherently interact with the physical world. To deny this inference merely because of a prior commitment to naturalism is not defensible. There is no principled way to distinguish between using specified complexity to eliminate chance in one instance and then in another instance invoking unlimited probabilistic resources to render chance plausible.⁴³⁷

Design, therefore, as signified by specified complexity, allows for the possibility of independent evidence; an infinite universe with unlimited probabilistic resources does not. Specified complexity can be a point of contact between the known universe, which is finite, and an intelligence outside it. Designers within the known universe already generate specified complexity, and a designer outside could potentially do the same. That is what allows for independent evidence to support unembodied designers. Provided nature supplies us with instances of specified complexity that cannot reasonably be attributed to any embodied intelligence, the inference to an unembodied intelligence becomes compelling and any instances of specified complexity used to support that inference can rightly be regarded as independent evidence.⁴³⁸

It appears, then, that we are back to our own known little universe, with its very limited number of probabilistic resources but also its increased possibilities for detecting design. This is one instance where less is more, where having fewer probabilistic resources and a smaller universe opens possibilities for knowledge and discovery that would otherwise be closed. Limited probabilistic resources enrich our knowledge of the world by enabling us to detect design where otherwise it would elude us. At the same time, limited probabilistic resources protect us from the unwarranted confidence in natural causes that unlimited probabilistic resources invariably seem to engender. In short, limited probabilistic resources eliminate the chance of the gaps.⁴³⁹

Chapter 11: ***Biological Causality Versus Darwinism:***

Darwinists' Best Explanation Is "Pure Dumb Luck."

Many of the most foundational achievements of science in the West were established before the mid-19th Century, while people generally accepted the premise that the universe had a beginning, that it had been purposely designed by a loving immanent (and paradoxically transcendent) God who permeates and sustains all creation, while allowing free-will human agents to cultivate and control His creation which He had created for their good. There was a clear idea of where we came from; that we were created "very good;" what went wrong, introducing suffering, poverty, disease, ignorance, and other human ailments; and what can and has been done to correct this tragic situation. Everything in nature was purposeful. This purposefulness is studied under Teleology.

Teleology is defined as (1) the doctrine that final causes exist, (2) the study of the evidence for design or purpose in nature, (3) such design or purpose, (4) the belief that purpose or design are a part of, or are apparent in, nature, (5) in Vitalist philosophy, the doctrine that phenomena are guided not only by mechanical forces but that they also more toward certain goals of self-realization. (Webster's Collegiate Dictionary). The Oxford Dictionary states that the philosophical definition of teleology is "the explanation of phenomena by the purpose they serve rather than by postulated causes," and the theological definition is "the doctrine of design or purpose in the material world." (Oxford Dictionary). Theologians can be pleased to see

these reputable dictionaries giving theology prominence in the defense of teleology. A number of philosophers, regretfully, in the aftermath of logical positivism, went along with many scientists, and closed their minds to the very clear and manifest evidence for design and purpose in nature, which are open to observation and study. It is of course the result of the “lock-step” reasoning of the naturalists that only the measurable and observable, in the light of mechanistic materialistic theories, is to be reckoned as “knowledge,” while anything dealing with design and/or purpose in the cosmos is a matter of “belief,” on a par with primitive myth or alchemy. One is justified in asking, “Why are design and purpose to be so lightly discarded from the realm of philosophy and natural reason, since they were seen in this light for over a millennium in the very civilizations that produced the world’s most advanced, systematic philosophers and scientists?”

Dr. Robert C. Koons, in his scholarly work titled *Realism Regained: An Exact Theory of Causation, Teleology and the Mind*,⁴⁴⁰ shows that scholarship historically took some wrong turns that adversely affected realism in Western philosophy. This involved even first-rate philosophers who made significant contributions in many other areas. It is worthwhile to briefly show how their incorrect ideas also had ramifications in the development of philosophy. Later in this book we will show that these erroneous ideas also had deplorable historical consequences.

In our modern times, some philosophers such as Rorty, Foucault and Derrida, have graduated to a full-blown form of anti-realism.⁴⁴¹ This devolution from a comprehensive form of realism as exemplified by Plato, Aristotle and Boethius, to comprehensive anti-realism, came over time in four great waves: Occam, Bacon, Hume and the post-modernists. These waves correspond to the dismantling, one by one, of Aristotle’s four causes: formal, final, efficient and material. To illustrate, we will use the following definitions:

- ✦ A *cause* can be seen as an event that brings about an effect or result. A cause can be seen as an event which causes another event, the reason or rationale for an event, an agent or the motive thereof;

the means by which an event transpires, supporting condition for an event, or in fact anything satisfying any logical or physical requirement of a resulting effect.⁴⁴²

- ✦ *Causality* is the quality or agency relating cause and effect. Because causal relationships necessarily exist in a causal medium that provides a basic, genetic connection between cause and effect, the study of causation has typically focused on the medium and its connectivity, i.e., the “fabric of nature.”⁴⁴³

The ancient Greek philosopher, Aristotle, (4th Century B.C.), enumerated various kinds of causation which were arrived at in response to questions concerning types of causes:

1. **Material Cause:** What is changed to make the entity (of what is it comprised?)
2. **Efficient Cause:** What makes the entity change, and how?
3. **Formal Cause:** What is the shape or pattern associated by the entity as it changes?
4. **Final Cause:** What is the goal towards which the change of the entity is directed?⁴⁴⁴

This Aristotelian system, including its specification of formal and final causation, had dovetailed quite easily with Judeo-Christian thought, as it ultimately implies “...the existence of a purposive, pattern-generating Prime Mover, thus allowing for a teleological explanation of nature which went all but unchallenged for well over a millennium.”⁴⁴⁵ The process of dismantling of the comprehensive form of realism historically happened in this way:

Nominalists, such as Occam, rejected the real existence of properties, types and other universals. All that exists is individual: all predicates and other general terms refer distributively to their many satisfiers, not to a single universal entity. Thus, nominalists denied the reality of Aristotle’s formal cause: form as such does not exist.

Although it took several hundred years for this conclusion to be explicitly drawn, it follows from the rejection of form that there can exist no real final causes. Final causation implies a real relationship between an individual and a form that is only partially or imperfectly realized in the present state of that individual. If forms are unreal, so too are such relationships.

Descartes, Bacon and Galileo urged that final causation be banished from natural philosophy. This was to some extent justified by the over-reliance of Aristotelians on final causation, especially in physics. Moreover, the concentration of scientific research on matters of efficient causation undoubtedly contributed to the rapid growth of physical and chemical sciences in the early modern period. However, the banishment of final causation to the realm of *a priori* psychology and revealed theology was unjustified and has done great harm to both philosophy and science.

Bacon and Descartes did not deny the existence of final causation absolutely, but they denied its existence within nature. All final causation was made dependent on the intentions of conscious agents, whether human or divine. Anything that is not a human artifact could have a proper function only by reference to the design intentions of God. The identification of final causation with divine intention led to the subsequent confusion by many of teleological explanations with the attribution of perfection or optimization.

Once final causation was relegated to revealed theology, it was inevitable that a Hume would appear, who would attempt a thoroughly non-teleological account of the human mind. Epistemology thus became the study of the operations of the human mind, without reference to the proper functions of the human faculties. As Hume so clearly saw, the operationalist empiricism that results undermines the rationality of induction and renders causal connections inaccessible. Consequently, the

third of Aristotle's causes, the efficient cause, went under. Kant attempted to minimize the damage of this loss by making causation an unavoidable projection of the finite understanding, rather than the accidental result of associations in this or that individual human being. With Hume and Kant representing the two alternative poles, one of individualistic subjectivism and the other of universal, intersubjective anti-realism, modern philosophy has sought out many devices for reconstructing epistemology and ethics without the use of either final or efficient causation, without notable success.

Post-modernism has been the natural response to the evident failure of modern philosophy. Without final or efficient causation to tie human ideas to objective reality, the materialistic story of modern scientific philosophy becomes merely one story among many equally legitimate alternatives. Since truth is impossible, reason becomes optional...

A coherent and viable alternative to the failures of modern philosophy and the vacuity of post-modernism must...be built on the restoration of all four of Aristotle's causes. By recognizing that our cognitive faculties are objectively ordered to the end of truth, and by recognizing that universal types are every bit as real as particular instances, we can successfully depend on the possibility of both truth and knowledge. Moreover, since our volitional faculties are also objectively ordered to a systematic end—human *eudaemonia*—we can close the infamous fact/value gap and restore ethics to its rightful place among the sciences.⁴⁴⁶

Since the work of Hume and Kant, empiricists and positivists have also held metaphysics to be unscientific because it postulates entities, causal connections, substances, universals, numbers, etc., that are not directly verifiable by the senses. Furthermore, scientists who insist on interpreting the theoretical entities of science realistically fall under the same suspicion. Locke was skeptical not only about scholastic metaphysics, but also about

Newton's mechanics, and van Fraassen rejects not only universals and causal connections, but also electrons and magnetic fields.

The central dogma underlying the positivist critique of metaphysics is the privileged status of sense perception. Whatever can be justified can be justified (according to the positivists) in terms of sense perception, or sense perception plus deductive logic. The positivist owes the rest of us an explanation of why we should grant this exclusive privilege to one or two modes of knowing, at the expense of all others.

The basis for the privileging of sense perception seems to be the matter of reliability. There are two reasons for thinking that our knowledge of our own sensory surface stimulations ... is more reliable than our knowledge of other facts: causal distance and inferential distance. The process of conveying information to me from a rock or an electron is much longer than the process conveying information to me from the immediate environment of my sense organs. ... A longer process is more susceptible to malfunction, all things being equal. Hence, the shorter process is more reliable. Similarly, any knowledge gained by inference from sensory knowledge involves additional steps, during which additional errors can occur.

However, all things are not always equal. Koons uses the point presented by Fred Dretske, that our knowledge of distal facts is often much more reliable than our knowledge of proximal situations.

"I am much better at learning the pattern of the distribution of furniture in my office than I am at learning the pattern of stimulation of my retina. My innate knowledge of arithmetic is more reliable still, and much of our inferential knowledge, for instance, our knowledge of the power of gravity, is more reliably formed than our knowledge of the results of any single experiment."⁷

Where positivists and empiricists are right is in insisting that there be the possibility of some kind of causal connection, direct or indirect, between us and the postulated entity. In the absence of such a causal connection,

there can be no reliability, and where there is no reliability, there can be no knowledge. Where they are wrong is in limiting this causal connection to the five senses.

A philosopher who is empirical in spirit rejects *a priori* certitudes in philosophy as bad methodology. This must include rejecting the *a priori* certitudes of empiricism.⁴⁴⁷

Teleology is supported by arguments from design, which hold that nature exhibits design that rationally implies a Designer, who is also Supreme Good and Supreme Intelligence. A good description of how this impacted Judeo-Christian and Western society is the “Kalam” cosmological argument, which dates back at least to 4th Century A.D. Christian Egypt, according to which philosopher John Philoponus argued against the pagan Aristotelian argument that god was not creator of the universe, but merely imbues order into the universe which was always there. Following the Biblical worldview, as delineated from the first sentence of the Book of Genesis and repeated in the First Chapter of John’s Gospel, John Philoponus formulated the below syllogism which has the Arabic title of “*Kalam*,” (meaning doctrine, or speech). The Arabic title stuck because the theory was widely expanded upon by Islamic medieval theology, especially by Al-Ghazali (A.D. 1058-1111). These ideas, relying upon philosophical and mathematical reasoning, were brought into medieval Spain through Jewish thinkers, who in turn enabled Christian thinkers to get them into Latin-speaking Christendom. The syllogism is briefly stated in this way:

- ✦ Whatever begins to exist has a cause.
- ✦ The Universe has a beginning.
- ✦ Therefore, the universe has a cause.⁴⁴⁸

During the latter 19th and early 20th centuries, a number of prominent scientists argued that the universe had no beginning; it was always there. They assumed that the universe was eternal. This was part of the “thinking outside the box,” and intellectual freedom of that period. As we now know, thanks to Albert Einstein’s General Theory of Relativity, and thanks to

the First and Second Laws of Thermodynamics, the universe had to have a beginning. Even atheistic Darwinists have reluctantly had to admit this some decades ago, and this *Kalam* argument simply will not go away. However, the early 19th century had witnessed many naturalist scientists and philosophers who denied that the universe had a beginning, due to the influence of the naturalistic philosophy exemplified by British Empiricism. The concept of teleology, along with the concept of God, were discarded from their science, as this could not be physically seen or measured.⁴⁴⁹

However, the concept of teleology is so foundational to the history and coherence of advanced science (as we see even in the writings of brilliant modern non-theists, such as Drs. Marcel Paul Schützenberger and David Berlinski) that it has been revived in various quarters, including the *Intelligent Design (ID)* school of thought. These ID thinkers, who are grounded in mathematical deductive logic and philosophy, as well as biology, microbiology and biochemistry, physics, astronomy, cosmology, etc., recognize that an integrated view of biological systems necessarily implies the involvement of empirically detectable intelligent causes in nature. A number of scholars who have seriously and methodically scrutinized Intelligent Design have recognized that this line of reasoning, while it is concordant with theological arguments from design, it (ID Theory) is clearly, explicitly and intentionally scientific, and ID Theory has been presented on the same basis as any other scientific theory awaiting scientific confirmation.⁴⁵⁰

Because ID theory does not confine itself to theological causality, there are among its self-proclaimed adherents non-Christians and even non-theists. Interestingly, other persons who have not stated that they are members of the Intelligent Design movement, still have been sufficiently persuaded by this line of reasoning that they have abandoned Darwinism. For instance, the celebrated former evolutionist spokesman and author, Andrew Flew, frankly abandoned his evolutionary position in the face of the extraordinary complexity, order and design at the submicroscopic level in DNA and

elsewhere. There are, furthermore, some Buddhists and other non-theists who, according to Dr. Dembski, ascribe to ID theoretical reasoning.⁴⁵¹

This can be so because ID theory leaves itself open to intelligent design from any intelligent source, whether that would be a human being, an artificial intelligence, or even sentient aliens.⁴⁵² In practical terms, people identify intelligence by techniques in such fields as anthropology, cryptology, computer science and, even wishfully, in SETI (the Search for Extra Terrestrial Intelligence). ID proponents recognize that while the inquiry into design would ultimately lead to the discussion of a Prime Mover, they have limited their field of enquiry to date to design inference. ID at present has set about explaining complex biological phenomena in terms of design, without delving into the nature of the designer itself.⁴⁵³

The opposing view, Neo-Darwinism, is described by its proponents as the “modern synthesis of post-Mendelian genetics and natural selection.”⁴⁵⁴ However, its modernity and systematic scientific development are very debatable now in view of its failure to meet the cogent and lucid challenges of ID, as well as the whole area of teleology which even theistic evolutionist adherents refuse to reject. Surveys show that at least 50% of those people in the USA who still accept evolution as either scientific fact or the most probable scientific theory of origins, still believe in God and do not accept the full Darwinian naturalistic and materialistic mechanistic view of the origins of life. Despite the dominance and privileged (even mandated) status of Darwinism in American public education for a few generations now, only some 14% of Americans have been fully convinced by this line of reasoning.⁴⁵⁵

The Universality of Causation.

Philosophers have struggled with the question concerning whether every situation must have a cause. However, to answer this with an unqualified “yes” would lead to inconsistency because we have to say that reality (the sum of all actual situations) must itself have a cause, which must be an actual situation and therefore part of reality. The problem is, a situation cannot be

the effect of one of its parts. Therefore, Aristotle, Leibniz and many others limited the universality of causation to contingent situations. While there are some problems with this approach, Koons is of the view that this view is approximately correct: "What is needed is to use the resources of mereology [i.e., the Lesniewski-Goodman-Leonard calculus of individuals] to define a category of 'wholly contingent' situations, as all wholly contingent situations have causes."⁴⁵⁶ He provides us with this following definition:

Koon's Definition 8.1. A wholly contingent situation is "an actual situation, none of whose parts are necessary." Koons does not assume that there are any necessary situations. The existence of necessary truths does not entail the existence of necessary situations. If there are any necessary situations, they are situations of a very unique kind.⁴⁵⁷

Koons gives us three principal facts about causation: veridicality, separate existence, and universality. He holds, along with Hume, that a cause and its effects must be separate existences and, employing the language of mereology, states that a cause must not overlap its effect. Koons furthermore does not hold that every event is necessitated by its causes; frequently it is not. "It is quite possible for *C* to be in every sense the cause of *E*, even though it was possible for *C* to occur without being accompanied by *E*."⁴⁵⁸ I would exemplify this principle with the human condition of fatherhood. A man can be a complete person without being a father, although fatherhood immensely enriches his humanity.

Empirical evidence supports the generalization that wholly contingent situations have causes. In the absence of evidence to the contrary, Koons argues,

...We may infer that any particular wholly contingent situation has a cause. To deny the universality of causation as a descriptive generalization constitutes a very radical form of skepticism. All of our knowledge about the past in history, law and natural science, depends on our inferring all of present facts (traces, memories,

records). Without the conviction that all (or nearly all) of these have causes, all of our reconstructions of the past (and therefore nearly all of our knowledge of the present) would be groundless. Moreover, our knowledge of the future and of the probable consequences of our actions depends on the assumption that the relevant future states will not occur uncaused. The price of denying this is very steep: embracing a comprehensive Pyrrhonian skepticism.⁴⁵⁹

The Existence of an Uncaused First Cause.

Besides the logical principles presented above, the proof of the existence of a first cause depends on only one factual premise: that there exists a contingent situation. Koons points out that every physical situation is contingent; for instance, the number of molecules in his pencil at the present moment is either odd or even. This means that:

A contingent situation is actual but could have been non-actual, where the relevant notion of possibility is that of broadly metaphysical possibility. Broadly metaphysical possibility is the fundamental form of possibility of which all other kinds (physical, historical, legal, etc.) are qualifications or restrictions. ... If we deny that there are any contingent situations, then we must conclude that we live in a world in which all three modalities—possibilities, actuality and necessity—collapse together. This is tantamount to denying that these modalities can do any interesting work. Such a denial runs athwart the growing body of philosophical work in which modality plays a central role.⁴⁶⁰

I would like to give a brief overview of the elements of Koon's amply detailed proof that the cosmos has a first cause.

- ♦ Lemma 8.1. All the parts of a necessary situation are themselves necessary, by axiom 8.4. here below, and the *K axiom* of modal logic.
- ♦ Lemma 8.2. Every contingent situation has a wholly contingent part.

- ✦ Definition 8.2.a. Let C be the aggregate of all wholly contingent situations.
- ✦ Lemma 8.3. If there are any contingent situations, C is a wholly contingent situation.
- ✦ Lemma 8.4. If there are any contingent situations, C has a cause.
- ✦ Lemma 8.5. Every contingent situation overlaps C .
- ✦ Theorem 8.1. If there are any contingent situations, then C has a cause which is a necessary cause. By the axiom concerning veridicality, the cause of C is actual. Hence the cause of C must be a necessary situation.

Since we know that there is at least one contingent situation, we can identify C with the cosmos, and use theorem 8.1. to conclude that the cosmos has a cause that is a necessary fact, a first cause. It is legitimate to call this cause a “first cause” if we assume (as seems plausible) that all effects are contingent.⁴⁶¹

Koons raises the argument concerning the possibility of infinite causal regresses, as Plato and some others have postulated. Suppose for contradiction that there is one, calling the sum of the regress s_{∞} . (∞ signifies *infinity*). Koons argues that:

Only wholly contingent tokens can be caused, so each of the members of the series is wholly contingent. Consequently s_{∞} is wholly contingent. By Koon’s axiom 8.8., s_{∞} has a cause, $s_{\infty} + 1$. However, $s_{\infty} + 1$ cannot be an immediate cause of any of the members s_n of the series because it is screened off from s_n by $s_n + 1$. Suppose, for contradiction, that $s_{\infty} + 1$ were a cause of s_n . Then $s_n + 1$ would be preempted from causing s_n since $s_{\infty} + 1$ is causally prior to $s_n + 1$. This contradicts our assumption that $s_{\infty} + 1$ is a genuine cause of s_n . Therefore, $s_{\infty} + 1$ cannot be the immediate cause of any member of the series.

Since $s_{\infty} + 1$ does not cause any of the members of the series, it cannot be a mediate cause of any of them either, since mediate causation is simply the transitive closure of immediate causation.

So, $s_{\infty} + 1$ does not cause any of the members of the series and therefore it does not cause the sum of the series s_{∞} , contrary to our original assumption. In many cases, the impossibility of an infinite regress has been used as a premise in the cosmological argument. ... It is more illuminating to think of it as a corollary.⁴⁶²

Koons also points out that Quantum theory is sometimes taken to provide abundant counterevidence to the universality of causation.

Quantum mechanics raises two problems to our understanding of causality: the indeterminism of wave collapse (under the Copenhagen interpretation), and the Bell inequality theorems. As stated earlier, [Koons] does not assume that causes necessitate their effects. In fact, he holds that such an assumption is incoherent (if “necessitate” is used in a strong sense). According to the Copenhagen version of quantum mechanics, every transition of a system has causal antecedents; the preceding quantum wave state, in the case of Schroedinger evolution, or the preceding quantum wave state plus the observation, in the case of wave packet collapse.

The Bell inequalities demonstrate that the data described by quantum mechanics forces us to reject one of the following three principles:

- ✦ Causal influences never travel backward in time
- ✦ Causal influence never travels faster than the velocity of light
- ✦ Every reliable (projectible) correlation has a causal explanation.⁴⁶³

In discussions of the Bell inequalities, the third principle is sometimes labeled a law of “causality.” Koons does not hold, as per this third principle,

that a cause “always screens off” ... its effects from non-posterior states. He does hold that “the Bell inequalities are merely another demonstration of the impossibility of reducing causation to some sort of statistical relationship. They raise no difficulty for a causal realist, states Koons. He holds that the most reasonable response to the Bell inequalities would be to restrict one or more of the three principles above to macroscopic (large-scale or classical) phenomena and to re-state them as defeasible (exception-permitting) rules. Koons also favors restricting interactions between classing systems. “Where causal influences between classical systems are mediated by quantum phenomena ... then exceptions to the second principle can occur. These exceptions do not, however, permit the exchange of information at superluminal velocities.”⁴⁶⁴

Several 20th century philosophers followed Hume in holding that only logical truths can be necessary, that the very notion of a necessary existence is incoherent. Koons answers to this that:

The Humean principle being relied upon is self-defeating. Is it supposed to be true by definition that only logical or definitory truths are necessary? ... How could such a principle be contingent? What sort of contingent facts about the actual world make it the case that there are no non-logical necessities? What empirical justification have the anti-essentialists provided for the claim?

In response, the objector must simply deny that he can make any sense of this notion of modality, except insofar as it is replaced by the clear and well-behaved notion of logical consistency. This sweeping denial of modality is simply obscurantist, undermining fruitful philosophical research into the nature of natural law, epistemology, decision, action and responsibility and a host of other applications.⁴⁶⁵

Contingent facts typically have contingent causes.

This is in fact true but, in defense of the cosmological argument, Koons holds that there are substantive reasons for holding that a cause is always more nearly necessary or less profoundly contingent than its effect:

In other words, a situation *a* is more nearly necessary than situation *b* just in case *a* holds in every world in which any part of *b* holds, but *a* could exist in the absence of any part of *b*.

That the causal antecedents of a situation-token are more nearly necessary than the token itself follows from the *identity conditions* of situation-tokens. The causes of a token are essential to its identity. ... The corresponding thesis involving effects is not plausible: a situation's identity does not include the eventuality of all its effects. The contingency of the evolution of the world depends on this asymmetry: a situation's holding necessitates the holding of its causes, but not of its effects.

This principle (an effect necessitates the existence of its causes) does not imply that the *content* of an effect necessitates the *content* of its causes.

There are additional reasons (besides the identity conditions of situations) for thinking that causes are more necessary than their effects. First, there is the authority of Aristotle and the Aristotelian tradition. Second, it is clear that we need some account of causal priority that explains the transitivity and asymmetry of this relationship. An account of causal priority in terms of relative necessity nicely satisfies this desideratum. Third, this account enables us to specify the "potential causes" of a given situation: *a* is the potential cause of *b* if and only if *a* is more necessary (less contingent) than *b*. Such a specification is necessary if we are to account for the statistical properties of statistical connections, the

so-called Markovian principles. ... Markov locality entails that the causal antecedents of an event “screen off” the probability of that event from the probability of any non-consequent event-token. If we assume its actual causes, then we are implicitly assuming that the causal antecedents of any actual token are necessary to its identity, that there are no non-actual or counterfactual causes of actual tokens.

Finally, the relative necessity of causally antecedent tokens gives us an explanation of the asymmetry of past and future. In some sense, given the present, the past is fixed in a way that the future is not. This “fixity” of the past can best be understood as the relative necessity of past event-tokens, given the token event corresponding to the present. ... The event token making up the present that is present necessitates the event-tokens of the past, but it leaves open a number of different sequences of future event-tokens. Since past tokens are causally antecedent to the present, we have another (Koons thinks conclusive) reason for accepting the thesis of the relative necessity of causally antecedent tokens. This thesis is implicit in all “branching future” models of temporal logic.

However relative contingency is defined, it is clear that the cosmos is a situation of absolutely minimal contingency. If situation a contains situation b as a part, then b is no less contingent (no more necessary) than a , since a could not exist if b did not exist. Since the cosmos contains every wholly contingent situation as a part, no wholly contingent situation can be less contingent than the cosmos. Since the cosmos is a situation of minimal contingency, it is not surprising that it should have no contingent cause, but it would still be very surprising if it had no cause at all.⁴⁶⁶

Koons' "Axiom 8.8."

On the basis of induction, we can confirm that at every degree of necessity (short of absolute necessity), every token is caused by some token more necessary than it. As we successfully build scientific models that stretch across astronomical and geological time, we confirm that situation-tokens across a wide swath of degrees of necessity have causes that are strictly more nearly necessary than themselves. Koon's Axiom 8.8" states that we may reasonably infer, about any token at any degree of necessity, that it has a causal antecedent which is more nearly necessary than it. When we try to apply axiom 8.8" to a necessary fact (or any fact that is not wholly contingent), we find that the defeasible conclusion is blocked, since there is no fact more necessary than an absolutely necessary fact. When we apply axiom 8.8" to the cosmos, or to any other minimally contingent fact, we succeed in drawing the defeasible conclusion and, in addition, we have an explanation as to why the cause of the cosmos is necessary.⁴⁶⁷

Where Did the First Cause Come From?

Koons holds that:

...If we're right in thinking that causes must be strictly more nearly necessary than their effects, it follows that necessary situations cannot be caused (at least, in the ordinary sense). Another reason for thinking that necessary situations cannot be effects is this: we know the totality of all situations cannot be caused, since there is no situation that does not overlap it. And the best explanation of this situation is that this totality contains necessary situations, and necessary situations cannot be caused.⁴⁶⁸

The Impossibility of an Infinite Regress.

Philosophers going back to Leibnitz have understood that the cosmological argument does not depend on any assumption concerning the impossibility of infinite regresses. While one can allow that there could be infinite

regresses of causes within the totality of contingent facts, the totality itself must have a cause that is outside it and which is necessary. It is entirely proper to reason about ontologically basic situations. Koons argues that:

...The assumption that any non-empty set of situations can be aggregated into a single situation. This corresponds to the pre-modern denial of infinite regress, since it in effect denies that any such totality is what Cantor termed an “absolute” or improper totality (like the set of all sets, or the set of ordinal numbers). There is little if any reason to think that there is anything improper about the totality of all wholly contingent situations. We are talking only about ontologically basic situations, not about mathematical or semantical truths that supervene upon them. I am simply aggregating concrete particulars, and I am not running afoul of Russell’s vicious circle principle in the process. There is no reason to postulate any facts that somehow involve or presuppose the totality of all situations, or of all contingent situations.⁴⁶⁹

Koon also agrees with Russell, that the fallacy of composition which argues that because each of the parts of the world is caused, the whole must be caused. “The cosmological argument includes no such error; it is demonstrated that the cosmos is itself a wholly contingent situation, and for that reason must have a cause.”⁴⁷⁰

Necessary Existence Is Not an Impossibility.

Several contemporary philosophers, in the Humean tradition, are of the view that only logical truths can be necessary and, furthermore, the very notion of a necessary existence is incoherent. Koons meets this objection in this way:

First, I have not assumed the existence of a necessary situation; this was the conclusion, not a premise, of the argument. Thus, this so-called objection simply fails to engage the argument. The

objector is content merely to deny the conclusion without bothering with the premises or the reasoning.

Second, the Humean principle being relied upon is self-defeating. Is it supposed to be true by definition that only logical or definitory truths are necessary? Surely, in saying this, Hume, Russell and others intended to be saying something informative. How could such a principle be contingent? What sort of contingent facts about the actual world make it the case that there are no non-logical necessities? What empirical justification have the anti-essentialists provided for their claim?

In response, the objector must simply deny that he can make any sense of this notion of modality, except insofar as it is replaced by the clear and well-behaved notion of logical consistency. This sweeping denial of modality is simply obscurantist, undermining fruitful philosophical research into the nature of natural law, epistemology, decision, action and responsibility, and a host of other applications.⁴⁷¹

Spacetime Is Constrained by Causation; Not Vice-Versa.

In his effort to shed light on the paradoxes of quantum reality, Koons argues that the non-locality of quantum influences is predictable, since “spatiotemporal locality is a construction designed to fit (as closely as possible and as simply as possible) the network of macrophysical interactions.”⁴⁷² Koons uses his causal theory also in an explication of his concept of enduring substances, such as individual persons, organisms and artifacts. As he explains, “this explication depends crucially on the priority of causation over space and time, since it would be problematic to take space and time as given independently of the existence of enduring objects.”⁴⁷³

By developing his non-spatiotemporal account of causation, Koons furthermore is able to build causal theories of our knowledge of extra-spatial

objects, such as the world of logic, mathematics and modality. Causation, by being independent of spatiotemporal relations, is able to postulate a necessary First Cause of all contingent situations. "This first cause is presumably non-spatial and timeless (since spatiotemporal location would seem to introduce an element of contingency), yet it has genuine causal efficacy."⁴⁷⁴

Intelligent Design Theory's "Value Added" to Classic Causality.

Both Neo-Darwinism and ID Theory are theories of *causality* as related to biology and other natural science studies. Biological origins and evolution are cases of the study of causality in terms of the outcomes of causal processes. We have seen above how philosophers such as Hume and Kant discarded formal and final causes and furthermore laid even the material and efficient causes open to doubt. Hume claimed that causal relationships were nothing more than subjective expectations that certain sequences of events observed in the past will continue to be observed in the future; while Kant went on to observe that causality of cognition and perception according to which the mind organizes its experience of basically unknowable objects.⁴⁷⁵

American philosopher Thomas Langan posits some of the problems related with this development in philosophy:

Distilled to a single sentence, the prevailing scientific view of nature and causality is roughly this: 'nature is associated with a space, generalizable to a spacetime manifold, permeated by fields under the causal influence of which objects and interact more in space and time according to logical arithmetical laws of nature.'⁴⁷⁶ Despite its simplicity, this is a versatile causal framework with the power to express much of our scientific knowledge. But the questions to which it leads are as obvious as they are unanswered. For example,

- ✦ Where do these laws reside?
- ✦ Of what are they composed?

- How and why did they originate?
- What are their properties?
- How do they function and how are they sustained?"⁴⁷⁷

In addition to generating questions about natural laws in general, the *prevailing oversimplification* of causality contains further gaps containing further gaps which have done as much to impede our understanding of nature as to further it.⁴⁷⁸ The associated problems are numerous and they lead to yet another set of questions. For example, is causality formally and dynamically contained, uncontained, or self-contained? What is its source, or what does it function, and what additional structure does it predicate of that on which it functions? What is its substance? Is it mental, physical, or both? How does it break down and, if it is stratified, then what are its levels? These questions lead in turn to other questions and, until all these questions are answered, at least in principle, no theory of biological causality stands on *terra firma*.

In order to answer these questions, it is helpful to look at the models of causality on which neo-Darwinism and ID theory are currently based.

Causality According to Intelligent Design.

Teleological causation is “top-down” causation in which the design and the design imperative reside at the top, and the individual actualization events that realize design reside at the bottom. The model universe required for teleological causality must thus incorporate:

1. A source and means of design: i.e., a designer or designing agency.
2. A design stage in which designs are generated and/or selected.
3. An actualization stage in which designs become physically real from the viewpoint of physical observers, and
4. A means or mechanism for passing from the design stage to the actualization stage. If this type of model universe points observers to empirically detect interesting instantiations of teleology, so much the better.⁴⁷⁹

Teleological model universes that have been proposed include:

1. Celestial hierarchies and heavenly hierarchies with God at the top giving orders, angels of various ranks serving on intermediate levels as messengers and functionaries, humans lower still, and other forms of life at the bottom.
2. The Aristotelian universe, incorporating formal and final causation and embodying the *telos* of the Prime Mover.
3. Teleologically, “front-ended” mechanistic universes in which causation resembles clockwork that has been set in autonomous motion by a purposive, mechanistically talented designer, and
4. The panentheistic universe explicated by (among others) Alfred North Whitehead, in which the teleological will of the designer is immanent in nature because, in some sense, nature is properly contained *within* the designer.⁴⁸⁰

Langan points out that, although each has its strengths, these and other well-known teleological models are, as formulated, inadequate to support various logical implications of requirement one through four.⁴⁸¹ It is at this stage that one can see the special contribution of Intelligent Design theory. The model universe of ID Theory, which can be regarded as a generalization of traditional teleological design theory with respect to a causal agency, has essentially met the same requirements. However, it also contains certain novel ingredients, including a focus on intelligence, and emphasis on mathematical and information theoretic concepts and two novel ingredients called irreducible complexity and specific complexity.⁴⁸²

- ✦ *Irreducible Complexity*: which is intended to describe biological systems and sub-systems unlikely to have been produced by gradualistic (piece-by-piece) evolution is, by definition, a property of any integrated functional system from which the removal of any one or more core components critically impairs its original function. This concept has a valid basis with roots in logic, graph theory, and other branches of mathematics and engineering.⁴⁸³

- ♦ *Specified Complexity*: which is intended as a more general description of the products of intelligent causation and is by definition a property of anything that exhibits a recognizable pattern, which has a very low probability of occurring by chance. Whereas irreducible complexity is based on the sheer improbability of complex, functionally coherent systems, specified complexity adds an *intelligence*, (rational pattern generalization and recognition) criterion that lets functional complexity be generalized to a pattern-based form of complexity better-suited to probabilistic and information-theoretical analyses.⁴⁸⁴ Specified Complexity amounts to a relationship between three attributes: *contingency, complexity and specification*.
- ♦ *Contingency* corresponds to freedom and variety (as when there are many distinct possibilities that may be selectively actualized). Contingency is associated with *specificational and replicational* probabilistic resources. Specificational resources consist of a set or class of distinct pre-specified target events, while replicational resources consist of chances for at least one of the specified target events to occur. The chance of an instance of specified complexity is the chance that these two kinds of resources will intersect in light of total contingency. By way of example, in a 4-digit lottery, total contingency = #0000-9999. Specifications resources = a subset of distinct pre-selected 4-digit numbers to be replicated (matched or predicted).⁴⁸⁵
- ♦ Replicational resources are tickets purchased, or the chance that the lottery will have at least one winner equals the probability of intersection of the set of winning numbers and the set of tickets, given that there are 10 thousand distinctly numbered tickets that might have been purchased.⁴⁸⁶

More typically, says Langan, the total contingency of a particular evolutionary context consists of all possible lines of evolution that might occur therein, whether productive or leading to a dead-end; the specificational resources consist of instances of specified complexity or “intelligent design;” and the

replications resources consist of all possible lines of evolution which can occur within some set of practical constraints imposed on the context, such as time or space constraints tending to limit replication. The chance that a case of specified complexity will occur equals the probability of intersection of the set of constrained lines of evolution, given the multiplicity of all the possible lines of evolution that could occur. Where this probability is extremely low, some form of intelligent design is indicated.

- ✦ *Complexity*: corresponds to the improbability, and
- ✦ *Specification*: corresponds to the existence of a meaningful pattern which, in conjunction with the other two attributes in sufficient measure, indicates an application of intelligence. Whenever all three of these attributes are coinstantiated, specific complexity is present.⁴⁸⁷

Specified Complexity is a powerful idea that yields insight crucial to the meaning and satisfaction of requirements one through four, as noted above. Probability estimates for instances of specified complexity are so low as to require that specification and replicational resources be linked in such a way that such events can actually occur, in effect raising their probability. It must therefore be determined whether the satisfaction of this requirement is consistent with the premise that low probabilities can actually be calculated for instances of specified complexity; if so, how and why can this reliably be accomplished?

Next, it must be shown that the actual linkage between specificational and replicational resources is such as to imply intelligence and design.

Langan states that, up to its current level of detail and coherence, the model universe of ID theory does not necessarily conflict with that of Neo-Darwinism with respect to causality, but rather contains it, requiring only that causality be interpreted in light of this containment.⁴⁸⁸

Causality According to Neo-Darwinism.

Neo-Darwinism is the application of Darwinian natural selection to modern (post-Mendelian) genetics, which indifferently assumes that genetic mutations occur because of “random” DNA copying errors. Therefore, this “bottom-up” causation is reduced to some (ontic or epistemic) form of randomness. Furthermore, *natural selection* implies that nature (i.e., exclusively, the natural world) is, by itself, capable of selection. According to the Neo-Darwinists, there is no external designer, designing agency or creator. Neo-Darwinism is based on the assumption that genetic mutations occur because of “random” DNA copying errors. This reveals that causality is being at least partially reduced to some [ontic or epistemic] form of randomness. As Langan says, “even more revealing, the phrase *natural selection* explicitly implies that nature is selective. It reflects a naturalistic viewpoint according to which existence is ascribed exclusively to the natural world.”⁴⁸⁹

In practice, most scientists consider *nature* to consist of that which is physical, observable and amenable to empirical investigation as prescribed by the scientific method, in their adherence to which they see themselves as following a naturalistic agenda. This is in keeping with *scientific naturalism*, a worldview of which Neo-Darwinism is considered representative. Scientific naturalism ascribes existence strictly to the physical or natural world consisting of space, time, matter, and energy. Two strains of naturalism are distinguished: philosophical and methodological. While philosophical naturalism claims ontological force, methodological naturalism is epistemological in flavor, merely asserting that nature *might as well* equal the world for scientific purposes. In either case, scientific naturalism effectively confines the scientific study of nature to the physical. So, inasmuch as Neo-Darwinism is exemplary of scientific naturalism, it is physical or materialistic in character.⁴⁹⁰

In the picture of causality embraced by scientific naturalism, processes are either *random* or *deterministic*. In deterministic processes, objects are

affected by laws and forces external to them, while in random processes, determinacy is either absent or unknown. A process can be “random” because of ignorance, statistics, or presumed acausality—that is, because epistemological or observations limitations prevent identification of its hidden causal factors, because its causal outcomes are unpredictably but symmetrically distributed in the large, or because it is presumed to be nondeterministic. The first two of these possibilities involve some amount of causal determinacy, while the third is exclusively (but unverifiably) acausal. So, a Neo-Darwinist either takes a deterministic view of causality or sees it in terms of the dichotomy between determinism and nondeterminism, in either case relying heavily on the theory of probability.⁴⁹¹ In Langan’s summation,

Given that natural selection is based on the essentially trivial observation that “nature imposes constraints on survival and reproduction, (Langan’s footnote ¹⁸), Neo-Darwinism boils down to little more than probability theory, genetics and a very simple abstract, but nominally physical, model of biological causality based on ‘survival and reproduction of the fittest,’ and *common descent*, according to which diverse species arise from common ancestor by random reproductive mutation and natural selection. Thus, when Neo-Darwinians claim to have generated a prediction, it is generally not a deep secret of nature unearthed by means of advanced theoretical manipulation, but merely the result of applying what amounts to a principle of indifference⁴⁹² to some question about mutation, adaptation, selection or reproduction, obtained by running the numbers and tracking the implications through the simplistic Neo-Darwinian model universe. If there were no such “theory” as Neo-Darwinism, the same conclusion might have been reached with a straightforward combination of biology, genetics, chemistry, physics, a statistics calculator, and a bit of common sense. This is why Neo-Darwinism is so astonishingly able to absorb new effects and mechanisms the moment they come out of the core sciences.⁴⁹³

Langan also remarks that:

Something else that Neo-Darwinism seems to do with astonishing ease is absorb what appear on their faces to be contradictions. [It is] incredible that what amounts to a principle of indifference can be seriously offered as a causal explanation for the amazing complexity of the biological world, or for that matter any other part of the world. That fact that a principle of indifference is essentially devoid of information implies that Neo-Darwinism yields not a causal explanation of biological complexity, but merely an open-ended simulation in which every bit of complexity delivered as output must have been present as input, appearances to the contrary notwithstanding. This implies that Neo-Darwinism *per se* as distinguished from the core sciences from which it routinely borrows, adds precisely nothing to our knowledge of biological complexity or its source.⁴⁹⁴ In order to deal with this seemingly inescapable problem, the proponents of Neo-Darwinism have eagerly adopted the two hottest slogans in the theory of complex systems, *self-organization* and *emergence*.

- ✦ **Self-organization** is a spontaneous, extrinsically unguided process by which a system develops an organized structure, while
- ✦ **Emergence** refers to those global properties (functions, processes) of composite hierarchical systems that cannot be reduced to the properties of their component subsystems—the properties in which they are more than the sums of their parts.

But Langan hones in on ...

...the fact that these terms have been superficially defined does not imply that they have been adequately explained. Actually, they remain as much of a mystery in complexity theory as they are in biology and can do nothing for Neo-Darwinism but spin the

pointer toward another hapless and equally helpless field of inquiry. Because scientific naturalism denies that existence of any kind is possessed by anything of a supernatural or metaphysical character, including an intelligent cosmic designer, the definitions, theories and models of nature and causality on which it implicitly relies must be “physical,” at least in name. However, ...what currently passes for an understanding of causality in the physical sciences leaves much to be desired. In particular, since the kind of causality treated in the physical sciences is ontologically and functionally dependent on the origin and evolution of the cosmos, scientific naturalists trying to answer questions about causality are obliged to consider *all* stages of causation and generation all the way back to the cosmic origin, constantly testing their answers to see if they continue to make sense when reformulated in more fundamental terms. Unfortunately, this obligation is not being met. One reason is the reluctance of those who most need an understanding of causality to admit the extent of their ignorance. Another is the seeming intractability of certain problems associated with the causality concept itself.⁴⁹⁵

Sheer Dumb Luck:

David Berlinski was born in the United States and has taught philosophy and mathematics in several universities in the United States and in Europe, including *l'Université de Paris*, the Institute for Applied Systems Analysis in Austria, and at *L'Institut des Hautes Études Scientifiques* in France. I will allow him to have his word here on his synthesis of Neo-Darwinian causality.

Although biologists are unanimous in arguing that evolution has no goal, fixed from the first, it remains true nonetheless that living creatures have organized themselves into ever more elaborate and flexible structures. If their complexity is increasing, the entropy that surrounds them is decreasing. Whatever the universe-as-a-whole

may be doing ... biologically things have gone from bad to better... as a counterexample to the prevailing winds of fate.

...The structures of life are complex, and complex structures get made in this, the purely human world, only by a process of deliberate design. An act of intelligence is required to bring even a thimble into being; why should the artifacts of life be different?

Darwin's theory of evolution rejects this counsel of experience and intuition. Instead, the theory forges, at least in spirit, a perverse connection with the second law [of thermodynamics] itself, arguing that precisely the same force that explains one turn of the cosmic wheel explains another: *sheer dumb luck*.

If the universe is for reasons of *sheer dumb luck* committed ultimately to a state of cosmic listlessness, it is also by *sheer dumb luck* that life first emerged on earth, the chemicals in the pre-biotic seas or soup illuminated and then invigorated by a fateful flash of lightning. It is again by *sheer dumb luck* that the first self-reproducing systems were created. The dense and ropy chains of RNA—they were created by *sheer dumb luck*, and *sheer dumb luck* drove the primitive chemicals of life to form a living cell. It is *sheer dumb luck* that alters the genetic message so that, from infernal nonsense, meaning for a moment emerges; and *sheer dumb luck* again that endows life with its *opportunities*, the space of possibilities over which natural selection plays, *sheer dumb luck* creating the mammalian eye and the marsupial pouch, *sheer dumb luck* again endowing the elephant's sensitive nose with nerves and the orchid's translucent petal with blush.⁴⁹⁶

Langan's Deeper Look at Causality: The Connectivity Problem.

How is it that cause is connected to effect? Causal relationships would apparently need to exist in a causal medium that would allow for some

sort of basic connection between cause and effect. Therefore, the study of causation has typically focused on the medium and its *connectivity*—that is, on the “fabric of nature.” One must enquire about the way in which this fabric allows for different objects to interact, since “to *interact* is to *intersect* in the same events governed by the same laws, and thus to possess a degree of sameness? How can multiple objects each simultaneously exhibit two opposite properties, sameness and difference, with respect to each other?” Equivalently, asks Langan,

...On what underlying form of connectivity is causality defined? When one asserts that one event “causes” another, what more general connection does this imply between the events? If there is no more general connection than the causal connection itself, then causality is underivable from any logically prior condition; it is something that happens *ex nihilo*, the sudden synthesis of a connection out of nothing. It would then be just as Hume maintained: causal relationships would be mere accidental correlations of subjectively associated events, as inexplicable in their regularity as in their sensibility.⁴⁹⁷

But Hume’s characterization of causality as mere random correlation must presuppose the existence of a correlating agent who recognizes and unifies causal correlations through experience. Furthermore, the abstractive, experiential coherence or *consciousness* of this correlation-inducing agent constitutes a prior connective medium. So, in this case, explaining causality requires that the subjective medium of experience, complete with its correlative “laws of causality,” be related to the objective world of real events. Therefore, Langan concludes that: “Unfortunately, Hume’s thesis includes a denial that any such objective world exists. In Hume’s view, experience is all there is. And although Kant subsequently registered his qualified disagreement, asserting that there is indeed an objective outside world, he pronounced it unknowable, relegating causality to the status of a category of perception. This of course perpetuated the idea of causal subjectivity by continuing to presuppose the existence of an *a priori* subjective medium.”⁴⁹⁸

The Reality of Subjective Causality.

Kant observed that perception and cognition are mutually necessary; concepts without percepts are empty, and percepts without concepts are blind.⁵⁸ It must therefore be asked to what extent perceptual reality might be an outward projection of cognitive processes, and natural processes the mirror images of mental processes. This leads to another problem, that of *mind-matter dualism*, and to the discussions of *mind science*, which will be taken up in a later chapter.

One further consideration of this abstract study of causality concerns the application of Darwinian causality to real life situations is well explained by Langan:

The bottom-up thesis is insidious in the way it carries the apparent randomness of experimental distributions of mutation events upward from low-order to high-order relationships, all the way to the phenotypic and social realms. This is what encourages many Neo-Darwinists (and those whom they influence) to view mankind, and life in general, as “random” and purposeless.”⁴⁹⁹

These real-life applications will be looked at in the historical considerations noted in our chapters on “Applied Darwinism.”

Christopher Michael Langan does a superb description of causality, going into significant detail based on modern science and its interaction with the philosophy of science. His “Deeper Look at Causality” goes into the problems encountered with: the Connectivity problem; the Dualism problem; the Structure problem; the Containment problem; the Utility (Selection) problem; and the Stratification problem. He does this with a view to dovetailing both “bottom-up” and “top-down” causation theories. He is proposing a solution for all the above problems, which is called a Self-Configuring Self-Processing Language (SCSPL), which is an effort to embed physical reality in an extended logico-algebraic structure. It would, by extension of the concepts of nature and causality to SCSPL and

telic infrastructure, results in the *Cognitive-Theoretic Model of the Universe* (CTMU), allowing for an approach to biological origins and evolution known as *Teleologic Evolution*.⁵⁰⁰ Langan defines this as follows:

Based on the concept of telic-recursive metacausation, a generative process in which SCSPL syntax and state and dynamically linked, Teleologic Evolution is a dynamic interplay of replication and selection through which the universe creates itself and the life it contains. Teleologic Evolution is a stratified process which occurs on levels respectively associated with the evolution of the cosmos and of life, thus permitting organic evolution to mirror that of the universe in which it occurs. It improves on traditional approaches to teleology by extending the concept of *nature* in a way that eliminates any need for “supernatural” intervention, ad it improves on Neo-Darwinism by addressing nature and its causal dynamics to the fullest possible extent.⁵⁰¹

As exciting as this lead might be, and as interesting as this fusion of teleology with Neo-Darwinism might be, the idea of “causal self-containment of the universe,” in which “nature is both that which selects and that which is selected,”⁵⁰² comes up against a particularly stubborn fact—that of cosmology. Langan admits this is so:

Because cosmological causal regression terminates with an ancestral cosmic singularity representing the whole of nature while excluding all details regarding its localized internal states, standard cosmology ultimately supports *only* a top-down approach. The natural affinity of the cosmos for top-down causation—the fact that it is *itself* an instance of a top-down causation—effectively relegates bottom-up causation to secondary status, ruling out the bottom-up thesis and thus making room for a new model universe supporting and reconciling both approaches.⁵⁰³ While Langan’s proposed synthesis is brilliant and deserving of serious study, its complexity cannot be treated fully in a book of this size.

Readers are of course encouraged to study his paper first-hand and formulate their own independent judgments.

This point brings us to the next chapter in our study, dealing with Cosmology, Astronomy and Physics.

TWILIGHT OF DARWINISM

Part IV:

*Additional Scientific Challenges to
Neo-Darwinism*

Chapter 12:
Cosmology, Physics and Astronomy
Challenge Darwinism

Cosmologists are people who study the origins of the universe, the philosophy of nature and principles of the universe. For millennia, the Jews and the Christian West progressed and achieved undisputed international leadership in science and the philosophy of science, because their worldview allowed for this. And their worldview started with the first Chapter of Genesis, the first Book of the Bible, where it is written “In the beginning, God created the heavens and the earth.”

But some modern scientists, such as, for instance, Nobel Prize Laureate Steven Weinberg in his book titled *The First Three Minutes*,⁵⁰⁴ have come up with another idea: The universe, when only an infinitesimal fraction of one second old, was only $\frac{3}{4}$ of an inch in diameter.⁵⁰⁵ And then, “In the beginning there was an explosion, not like those familiar on Earth, starting from a definite center and spreading out to engulf more and more of the circumambient air, but an explosion which occurred simultaneously, everywhere, filling all space from the beginning with every particle of matter rushing apart from every other particle.”⁵⁰⁶ Some other scientists speculated more recently that from the commencement of “the big bang,” to the ordered universe we see around us, was a process taking some 5 one-billionths of a second. It was, as they explain it, an explosion that created great order, rather than disorder which is usually associated with explosions.³

Within the tiniest split second, the temperature hit a hundred thousand million degrees Centigrade. This is much hotter than in the center of even the hottest star: so hot, in fact, that none of the components of ordinary matter; molecules, or atoms, or even the nuclei of atoms, could have held together....Matter rushing apart consisted of such elementary particles as negatively charged electrons, positively charged positrons and neutrinos, which lack both electrical charge and mass...there were also photons—the universe was filled with light.⁵⁰⁷

In his ambitious book titled *A Short History of Nearly Everything*,⁵⁰⁸ Bill Bryson wrote: “In three minutes, 98% of all the matter there is or will ever be, has been produced. We have a universe. It is a place of the most wondrous and gratifying possibility and is beautiful too. And it all was done in about the time it takes to make a sandwich.”⁵⁰⁹

For most people, a fundamental question is, how could it have happened that there was nothing, and then quite suddenly, there was a universe. Bill Bryson, along with other thinkers, speculates that somehow, the very existence of the universe is explanation enough. Using some rather fanciful scientific theories, he speculates that there was a “false vacuum,” or “vacuum energy,” that might perhaps have “introduced a measure of instability into the nothingness that was...It seems impossible that you could get something from nothing, but the fact that once there was nothing and now there is a universe, is evident proof that you can.”⁵¹⁰ As painful as it is to see this advanced as a scientific fact, it is in fact rather standard fare for evolutionists to make this or similar statements. They claim that evolution is more than a theory—that it is established fact. Commenting on this, David Berlinski says:

“Darwin,” Richard Dawkins has remarked with evident gratitude, “made it possible to be an intellectually fulfilled atheist.” This is an exaggeration, of course, but one containing a portion of the truth. That Darwin’s theory of evolution and biblical accounts of

creation play similar roles in the human economy of belief is an irony appreciated by altogether too few biologists.⁵¹¹

A true scientist is one who looks for the best possible explanation for the evidence. Reflecting on the above statements of Weinberg and Bryson, Lee Strobel reflects: “Maybe Edward Milne was right when he capped his mathematical treatise on relativity by saying: ‘As to the first cause of the universe...that is left for the reader to insert, but our picture is incomplete without Him.’”⁵¹²

In the development of the philosophy of science, and of science, in the Judeo-Christian world, the most advanced thinkers relied on philosophical and mathematical reasoning to arrive at the conclusion that the universe had a beginning. Now even Neo-Darwinists cannot escape this conclusion. However, their reasoning does not yet allow them to fully assimilate the import of this admission.

In the preceding chapter on Biological Causality, a brief reference was made to the Kalam argument, with its three seemingly simple steps:

- **Whatever begins to exist has a cause.**
- **The universe began to exist.**
- **Therefore, the universe has a cause.**

We will enter here into a current analysis of this Kalam argument, as advanced by expert William Lane Craig, Ph.D., Th.D.,⁵¹³ and reported by Lee Strobel in his book, *The Case for a Creator*.⁵¹⁴

Step #1: Whatever Begins to Exist Has a Cause.

Conventional reasoning in Judeo-Christian societies over the centuries has accepted for Biblical and theological reasons, as well as philosophical and mathematical reasons, that the universe had a beginning. In holding that, the Jewish and Christian thinkers’ position was at variance with the pagan societies of the Middle East, the East, and of Rome and Greece in the West. A century ago, more “progressive” thinkers were denying that the

universe had a beginning. Now that people have had to accept that the universe had a beginning, secular humanists are shifting their basis for arguing on behalf of the “science” of their worldview, by trying to deny that “whatever begins to exist has a cause.” Quentin Smith, an atheist, claimed: “The most reasonable belief is that we came from nothing; by nothing, and for nothing.”⁵¹⁵ This statement seems quite illustrative of how diametrically opposed the materialistic secular worldview is to the Epiclesis/Doxology in the Christian Eucharistic prayer which states, “Through Him, with Him, and in Him, is given to you, Father almighty, together with the Holy Spirit, all honor and glory, forever and ever. Amen.”

Rather than offering any rational explanation of this “most rational belief” (sic.), the proponents of this “belief” simply play the skeptic and challenge conventional thinking by saying we cannot prove otherwise. To this, Dr. Craig counters that:

They should not demand unreasonable standards of proof. In the first place, this first premise is intuitively obvious once you clearly grasp the concept of absolute nothingness. The idea that things can come into being uncaused out of nothing is worse than magic. At least when a magician pulls a rabbit out of a hat, there is the magician and the hat. But in atheism, the universe just pops into being out of nothing, with no explanation at all. I think once people understand the concept of absolute nothingness, it is simply obvious to them that if something has a beginning, that it could not have popped into being out of nothing but must have a cause that brings it into existence...We certainly have empirical evidence for the truth of this premise. This is a principle that is constantly confirmed and never falsified. We never see things coming into being uncaused out of nothing...This principle is constantly verified by science. We must admit we have better reason to think it is true than to think it is false. If you are presented with the principle and its denial, which way does the evidence point? Obviously, the premise is more plausible than its denial.⁵¹⁶

The rather new field of Quantum Physics seemed to have produced one substantive objection to this first premise of the Kalam argument. In the quantum physics world, "...strange, unexpected things happen at the subatomic level." Lee Strobel enquired of Dr. Craig whether "...our commonplace understanding of cause-and-effect does not apply in this circus-mirror environment of "quantum weirdness," a place where, as science writer Timothy Ferris writes, 'the logical foundations of classic science are violated.'"⁵¹⁷ Quoting *Discover* magazine (April 2002), Strobel raised this query to Craig, suggesting that our universe, perhaps, is simply a case of *happenstance*.

Quantum theory...holds that a vacuum...is subject to quantum uncertainties. This means that things can materialize out of the vacuum, although they tend to vanish back into it quickly. Theoretically, anything—a dog, a house, a planet—can pop into existence by means of this quantum quirk, which physicists call a vacuum fluctuation. Probability, however, dictates that pairs of subatomic particles...are by far the most likely creations and that they will last extremely briefly ... The spontaneous, persistent creation of something even as large as a molecule is profoundly unlikely. Nevertheless, in 1973 an assistant professor at Columbia University named Edward Tryon suggested that the entire universe might have come into existence this way... The whole universe may be, to use [MIT physicist Alan] Guth's phrase, "a free lunch."⁵¹⁸

Craig responded to this interesting objection,

These subatomic particles the article talks about are called 'virtual particles.' They are theoretical entities, and it is not even clear that they actually exist, as opposed to being merely theoretical constructs. However, ...these particles, if they are real, do *not* come out of nothing. The quantum vacuum...is a sea of fluctuating energy, an arena of violent activity that has a rich physical structure and can be described by physical laws. These particles are thought

to originate by fluctuations of the energy in the vacuum. So, it is not an example of something coming into being out of nothing, or something coming into being without a cause. The quantum vacuum and the energy locked up in the vacuum are the cause of these particles. ... But what is the origin of the whole quantum vacuum itself? Where does it come from? ... You've simply pushed back the issue of creation. Now you have to account for how this very active ocean of fluctuating energy came into being. ... If quantum physical laws operate within the domain described by quantum physics, you can't legitimately use quantum physics to explain the origin of that domain itself. You need something transcendent that's beyond that domain in order to explain how the entire domain came into being. Suddenly, we're back to the origins question... Even ... the famous skeptic David Hume did not deny the first premise. Hume wrote in 1754, "I never asserted so absurd a proposition as that anything might arrive without a cause."⁵¹⁹ It wasn't until the discovery of scientific confirmation for the beginning of the universe in the 20th century that people began to say, well, maybe the universe just came from nothing... Nobody has defended such an absurd position historically... which again, makes me inclined to think this is just a corner they're being backed into by the evidence for the beginning of the universe.⁵²⁰

Step #2: The Universe Had a Beginning.

A century ago, secular scientists were assuming that the material universe was eternal. In this, they resembled the early Greeks, Romans, and other pre-Christian Westerners. Of course, Bible-believing Jews and Christians denied this, based on Biblical revelation and inerrancy. Advances in science in the past century have borne out the Biblical message and sent the secularists back to the drawing board. It is hard now for any scientist, no matter how secular, to seriously deny that the universe had a beginning.

Mathematical and philosophical reasoning: The Biblical teaching, shorn up by mathematical and philosophical reasoning, demonstrates that it was impossible to have an infinite past. The early Jews, Christians and Muslims argued that it was mathematically impossible to have an infinite past because of the absurdities that would result if you had an actually infinite number of things. Craig gives this illustration:

...The notion of an actual infinite number of things leads to contradictory results....Infinity minus infinity is zero; ...infinity minus infinity is infinity; and infinity minus infinity is three. In each case, we have subtracted the identical number from the identical number but have come up with non-identical results. For this reason, mathematicians are forbidden from doing subtraction and division in transfinite arithmetic, because this would lead to contradictions....You could not have an infinite number of events in the past...because you would run into similar paradoxes... In fact, we can go even further. Even if you could have an actual infinite number of things, you could not form such a collection by adding one member after another. This is because, no matter how many you add, you can always add one more before you get to infinity. This is sometimes called the Impossibility of Traversing the Infinite. But if the past really were infinite, that would mean we have managed to traverse an infinite past to arrive at today. It would be as if someone had managed to count down all of the negative numbers and arrived at zero at the present moment. Such a task is intuitively nonsense. For this reason as well, we can conclude there must have been a beginning to the universe.⁵²¹

Strobel raised the question to Craig: “Does not your reasoning also automatically rule out the idea of an eternal deity?” Craig responded to this:

That depends. It rules out the concept of a god who has endured through an infinite past time. But that is not the classic idea of God. Time and space are creations of God that began at the Big Bang.

If you go back beyond the beginning of time itself, there is simply eternity ... in the sense of timelessness. God, the eternal, is timeless in his being. God did not endure through an infinite amount of time up to the moment of creation; that would be absurd. God transcends time. He is beyond time. Once God creates the universe, he could enter time, but that is a different topic altogether.⁵²²

The **scientific evidence** is, for many, only a recent confirmation of a conclusion already arrived at based on philosophical reasoning. However, it is valuable to look at the best scientific evidence.

Strobel and Craig are willing to accept that the scientific evidence of the universe having been created in the Big Bang billions of years ago “has impressive scientific credentials.”⁵²³ The scientific discoveries that oriented scientists in this direction were as follows:

- ✦ **Einstein:** Albert Einstein developed his general theory of relativity in 1915 and started applying it to the universe as a whole. He was shocked to discover it did not allow for a static universe. According to his equations, the universe should be either exploding or imploding. In order to make the universe static, he had to fudge his equations by putting in a factor that held the universe steady.
- ✦ **Friedman and Lemaitre:** In the 1920s, the Russian mathematician Alexander Friedman and the Belgian astronomer George Lemaitre were able to develop models based on Einstein’s theory. They predicted the universe was expanding. Of course, this means that if you go backward in time, the universe would go back to a single origin before which it did not exist. Astronomer Fred Hoyle derisively called this *the Big Bang* and the name stuck.
- ✦ **Hubble:** Starting in the 1920s, scientists began to find empirical evidence that supported these purely mathematical models. For instance, in 1929, the American astronomer Edwin Hubble discovered that the light coming to us from distant galaxies appears to be redder than it should be, and that this is a universal

feature of galaxies in all parts of the sky. Hubble explained this red shift as being due to the fact that the galaxies are moving away from us. He concluded that the universe is literally flying apart at enormous velocities. Hubble's astronomical observations were the first empirical confirmation of the predictions by Friedman and Lemaitre.

- ✦ **Gamow:** Then in the 1940s, George Gamow predicted that if the Big Bang really happened, then the background temperature of the universe should be just a few degrees above absolute zero. He said that this would be a relic from a very early stage of the universe. Sure enough, in 1965, two scientists accidentally discovered the universe's background radiation—and it was only about 3.7° above absolute zero. There is no explanation for this apart from fact that it is a vestige of a very early and very dense state of the universe, which was predicted by the Big Bang model.
- ✦ **The origin of light elements.** Heavy elements, like carbon and iron, are synthesized in the interior of stars and then exploded through supernovae into space. But the very, very light elements, like deuterium and helium, cannot have been synthesized in the interior of stars, because you would need an even more powerful furnace to create them. These elements much have been forged in the furnace of the Big Bang itself at temperatures that were billions of degrees. There is no other explanation.⁵²⁴

The Big Bang theory has had a number of predictions verified by scientific data and they have been corroborated by the failure of efforts to falsify them by alternate models. This is an impressive theory that shook loose many scientists from their assumption that the universe was a static, eternally existing object. Some scientists took the stance of being skeptics of the Big Bang theory and advanced the *Inflation theory*. This theory holds that,

...in the very, very early history of the universe, the universe underwent a period of super-rapid, or 'inflationary' expansion. Then it settled down to the more leisurely expansion we observe today.

This inflationary expansion supposedly avoids the problem of the initial conditions of the universe by blowing them out beyond the range of what we can observe... Inflation has been plagued with problems. There are probably fifty different inflationary models... There is not any empirical test that proves inflation has occurred.⁵²⁵

While conceding that even though most theorists accept inflation today, Craig is suspicious of the Inflation theory, because it appears to be motivated by a philosophical bias. He says that the Big Bang appears to have been “fine-tuned for the existence of intelligent life with a complexity and precision that literally defies human comprehension.” The observable universe today depends on a highly specialized set of conditions and this, he holds, is “strong evidence that the Big Bang was not an accident, but that it was designed.” Now, what better way is there for theorists who want to avoid this conclusion than by trying to explain how this universe could have evolved, without these special initial conditions? Inflation is one attempt to do this.⁵²⁶

In any case, as Strobel points out, even if one were to accept the inflationary period could have happened in a microsecond *after* the Big Bang occurred, it still does not solve the question of the origin of the universe. It still shrinks back to a “singularity,” which Craig defines as “the state at which the space-time curvature, along with temperature, density and pressure, becomes infinite. It’s the beginning point, the point at which the Big Bang occurred.”⁵²⁷ Craig holds that the Big Bang model is the standard paradigm of contemporary cosmology. Even evolutionist thinker Stephen Hawking said, “Almost everyone now believes that the universe, and time itself, had a beginning at the Big Bang.”⁵²⁸

Step #3: Therefore, the Universe Has a Cause.

Since there are compelling reasons to accept both the major and minor premises of this syllogism, it is logically inescapable to conclude that The Universe has a cause. This raises a sense of profound discomfort for the strict evolutionist thinker. Craig pointed out to Strobel that atheist Kai

Nielsen said, “Suppose you suddenly hear a loud bang...and you ask me, ‘What made that bang?’ and I reply, ‘Nothing; it just happened.’ You would not accept that.”⁵²⁹ So, if most modern cosmologists hold to the Big Bang theory as being the most likely explanation, the question remains: “Who lit the fuse?” Or, where did the ingredients and/or physical energy come from in the first place—the space, the time, the energy? They were logically caused. Craig concludes: “A cause of space and time must be an uncaused, beginningless, timeless, spaceless, immaterial, personal being endowed with freedom of will and enormous power. And that is a core concept of God.”⁵³⁰

Proponents of the Intelligent Design theory include both theists and atheists. However, it is understandable that arguing that the universe has a cause leads inescapably to a Causer. The leaders of the ID movement let their readers formulate their own independent judgments concerning the Causer. But this level of discussion also raises some objections. For example, in his book titled *Atheism*,⁵³¹ George Smith queries: “If everything must have a cause, how did God become exempt?”⁵³² A similar argument is advanced by David Brooks, in his book titled *The Necessity of Atheism*:⁵³³ “If everything must have a cause, then the First Cause must be caused and, therefore, who made God?” Craig answers them:

Well, that just misses the point. Obviously, they are not dealing with the first premise of the Kalam argument, which is that not *everything* has a cause, but that whatever begins to exist has a cause. I do not know of any reputable philosopher who would say everything has a cause. So, they are simply not dealing with a correct formulation of the Kalam argument. And this is not special pleading in the case of God. After all, atheists have long maintained that the universe does not need a cause because it is eternal. How can they possibly maintain that the universe can be eternal and uncaused, and yet God cannot be timeless and uncaused?⁵³⁴

Because of the discomfort caused by the reasoning leading up to the need for a Causer (Creator) of the universe if one accepts the Big Bang theory,

other theories have been advanced to get around this compelling reasoning. One such was the Steady State theory proposed in 1948, which states that the universe was expanding but, as galaxies retreat from one another, new matter comes into being out of nothing and fills the void. This is in contradiction to the First Law of Thermodynamics, which says that matter is neither created nor destroyed, the universe is supposedly being constantly replenished with new material. Craig explains that this theory was baseless because

it never secured a single piece of experimental verification. It was motivated purely by a desire to avoid the absolute beginning of the universe predicted by the Big Bang model—in fact, one of its originators, Sir Fred Hoyle, was quite overt about this. He was very up front about his desire to avoid the metaphysical and theological implications of the Big Bang by proposing a model that was eternal in the past.... There were no scientific data supporting it. It is a good illustration of how scientists are not mere thinking machines but are driven by philosophical and emotional factors as well.⁵³⁵

Astronomer Carl Sagan had a popular TV program, *Cosmos*. He was a proponent of the Oscillating Model of the Universe. This theory eliminates the need for an absolute beginning of the universe by suggesting that the universe expands, then collapses, then expands again and continues in this cycle indefinitely. This model was espoused by Soviet cosmologists, as it is in keeping with their dialectical materialism. They held that matter was eternal, to adhere to Marxist philosophy. That they did so despite the evidence should tell us all something. Craig recounts some of the problems with the Oscillating Model.

It contradicts the known laws of physics. Theorems by Hawking and Penrose show that as long as the universe is governed by general relativity, the existence of an initial singularity—or beginning—is inevitable, and that it's impossible to pass through a singularity to a subsequent state. And there is no known physics that could reverse

a contracting universe and suddenly make it bounce before it hits the singularity....

Another problem is that, in order for the universe to oscillate, it has to contract at some point. For this to happen, the universe would have to be dense enough to generate sufficient gravity that would eventually show its expansion to a halt and then, with increasing rapidity, contract it into a big crunch. But estimates have consistently indicated that the universe is far below the density needed to contract, even when you include not only its luminous matter, but also all of the invisible dark matter as well.

Recent tests, run by five different laboratories in 1998, calculated a 95% certainty that the universe will not contract, but that it will expand forever. In fact, in a completely unexpected development, the studies indicated that the expansion is not decelerating, but it is actually accelerating. This really puts the nails in the coffin for the Oscillating Model.

Furthermore, even if physics allowed the universe to contract, scientific studies have shown that entropy would be conserved from one cycle to the next. This would have the effect of each expansion getting bigger and bigger and bigger. Now, trace that backwards in time and what do you get? They get smaller and smaller and smaller, until you finally come to the smallest cycle—and then the beginning of the universe.... The evidence indicates that the Oscillating Model itself implies the beginning of the universe which its proponents sought to avoid.⁵³⁶

A new version of this argument was advanced by a Princeton Physicist. It is that “the universe undergoes an endless sequence of cycles in which it contracts with a big crunch and reemerges in an expanding Big Bang, with trillions of years of evolution in between... Mysterious ‘dark energy’ first pushes the universe apart at an accelerating rate, but then it changes its

character and causes it to contract and then rebound in cycle after cycle."⁵³⁷ Strobel asked Craig about this, and Craig said:

This model is based on a certain version of *string theory*, which is an alternative to the standard *quark* model of particle physics.... The scenario postulates that our universe is a three-dimensional membrane in a five-dimensional space, and that there is another three-dimensional membrane which is in an eternal cycle of approaching our membrane and colliding with it. When this happens, it supposedly causes an expansion of our universe from the point of collision. Then our universe retreats and repeats the cycle again, and on and on.... The idea is that this five-dimensional universe is eternal and beginningless. So, you have a cyclic model of our universe that is expanding, but nevertheless this larger dimensional universe as a whole is eternal...

Well, this is not even a model; it's just sort of a scenario, because it hasn't been developed. The equations for string theory have not even all been stated yet, much less solved. So, this is extremely speculative and uncertain. But let's consider it on its merits...

This cyclic scenario is plagued with problems. For one thing, it is inconsistent with the very string theory it is based on! Nobody has been able to solve that problem. Moreover, this is simply the five-dimensional equivalent of a three-dimensional oscillating universe. As such, it faces many of the same problems that the old oscillating model did...

Inflation theorist Alan Guth and two other physicists wrote an article in 2001 on how inflation is not past eternal. They were able to generalize their results to show that they were also applicable to multidimensional models, like the one in this newspaper article. So, it turns out the even the cyclical model in five dimensions has to have a beginning....

It's amazing how this falls into a consistent pattern. Theories designed to avoid the beginning of the universe have either turned out to be untenable..., or else they imply the very beginning of the universe that their proponents have been desperately trying to avoid.⁵³⁸

Strobel and Craig mention other cosmologist who have proposed other theories that might eliminate a beginning point. André Linde tried one in which inflation begets inflation begets inflation *ad infinitum*. But a universe that is eternally inflating toward the future cannot be past eternal, as Linde himself finally admitted. Others tried a variety of quantum models claiming that our universe is part of a bigger mother universe, which ...

is made up of a quantum vacuum where fluctuations occur and turn into baby universes." However, Craig dismisses them on the grounds that "a quantum vacuum isn't nothing, but rather a very active sea of fluctuating energy that itself demands an explanation for how it came into existence...What accounts for its beginning? And second, there is a positive—that is, a non-zero—probability that a fluctuation would occur, and a universe would be spawned at each and every point in this quantum vacuum. So, if the mother universe were eternal, eventually a universe would have formed at each point. Think about that. Finally, these universes would be running into each other or coalescing until the entire quantum vacuum in the mother universe would be filled with an infinitely old universe, which contradicts our observations. That's why this model has not survived.⁵³⁹

One cosmologist who is rather well known internationally is Stephen William Hawking. He was a theoretical physicist at Cambridge University whose book, *A Brief History of Time*,⁵⁴⁰ sold millions of copies. *Business Week* once quipped that his book is "the least-read best-seller ever."⁵⁴¹ He is a popular man who had to use a wheelchair for mobility and a synthesizer for speech due to Lou Gherig's progressive disease. He tried to find a Theory

of Everything, which would unify general relativity with quantum theory. He proposed a quantum gravity model for the universe that he claimed eliminates the need for a singularity—the Big Bang. But Hawking also said that the universe had an origin out of nothing in the sense that there's absolutely nothing that comes before it. This model has a beginning but does not involve a singularity, because the laws of physics would apply all the way back.⁵⁴²

Craig was able to pick this apart as well.

It's important to note that Hawking is only able to advance this rounding-off effect (i.e., without a singularity) by substituting 'imaginary numbers' for real numbers in his equations. ... Imaginary numbers are multiples of the square root of negative one... In this model, they have the effect of turning time into a dimension of space. The problem is that when imaginary numbers are employed, they're just computational devices used to grease the equations and get the result the mathematician wants. That's fine, but when you want to get a real, physical result, you must convert the imaginary numbers into real ones. But Hawking refuses to convert them. He just keeps everything in the imaginary realm... What happens if you convert the numbers into real ones? Presto, the singularity reappears! In fact, the singularity is really there the whole time; it's just hidden behind the device of so-called imaginary time. Hawking concedes this... He said he does not pretend to be describing reality because he says he doesn't know what reality is. So Hawking himself recognizes that this is not a realistic description of the universe of its origin; it's merely a mathematical way of modeling the beginning of the universe in such a manner that the singularity does not appear.⁵⁴³

Commenting on this information from Craig, Strobel remarked: "I was amazed! Even though Hawking's internet site says his theory implies that the universe 'was completely determined by the laws of science,'⁵⁴⁴ even he

was not able to successfully write God out of the picture.”⁵⁴⁵ To this, Craig commented to Strobel:

What’s important to understand, Lee, is how reversed the situation is from, say, a hundred years ago. Back then, Christians had to maintain by faith in the Bible that despite all appearances to the contrary, the universe was not eternal but was created out of nothing a finite time ago. Now the situation is exactly the opposite. It is the atheist who has to maintain, by faith, despite all the evidence to the contrary, that the universe did not have a beginning a finite time ago but is in some inexplicable way eternal after all. So, the shoe is on the other foot. The Christian can stand confidently within Biblical truth, knowing it’s in line with mainstream astrophysics and cosmology. It’s the atheist who feels very uncomfortable and marginalized today...

Certainly, said Craig, there have been earlier ages when the culture was more sympathetic toward Christianity...bit I think it’s indisputable that there has never been a time in history when the hard evidence of science was more confirmatory of belief in God than today.⁵⁴⁶

It is impressive to me to see that Strobel is a former skeptic, and that Craig had believed that arguments for the existence of God were weak and ineffective. However, if you pay enough careful attention to a problem, you find your way to a solution. Craig’s path has been through two doctoral programs in philosophy and theology to a systematic study of cosmology and its logical implications. Strobel is another brilliant thinker and writer who follows the evidence wherever it leads, and that brought him back to faith in God. In this, he is like Phillip Johnson, Nancy Pearcey, and several other intellectuals who are well versed in science. Strobel’s book, *The Case for a Creator*, also takes the readers through the best evidence from physics, astronomy, and other modern science to show that the best evidence points toward God. He has interviewed, and even scrutinized some of the world’s

leading authorities in these fields to support his arguments because he was on a quest himself to decide this issue for his own peace of mind for himself and his family. His squarely facing up to this struggle has brought great good, not only to himself and his family, but also to the many readers of his series of books. In a nutshell, he had to face up to the irrational consequences of accepting Darwinism and its underlying premise of naturalism. He realized that naturalism and Darwinism involves believing:

- ✦ Nothing produces everything.
- ✦ Non-life produces life.
- ✦ Randomness produces fine-tuning.
- ✦ Chaos produces information.
- ✦ Unconsciousness produces consciousness and
- ✦ Non-reason produces reason.⁵⁴⁷

I ask the readers to consider some of the astrophysical and physical evidence that cosmologists depend upon. Our universe, and our planet, earth, are extraordinarily fine-tuned with a precision that cannot be scientifically explained as having happened by “pure dumb luck.” For instance, Earth is uniquely favored with certain aspects enabling us to have a great variety of life forms. For example, the Genesis account of creation talks of the First Two Days, in which took place the creation of the proper atmosphere and the establishment of the hydrological cycle. Ralph Muncaster points out in this regard the following:

Factors necessary to achieve *just these two criteria* (proper atmosphere and hydrological cycle) are estimated to be one in a hundred trillion trillion (one in 10^{26}). Assuming the number of planets anticipated in the universe, 10^{22} (considered “generous”), the chance of another life support planet is remote. By adding the other factors needed for life...it becomes absurd. The following lists only a few examples in a list of over 60 criteria determined to be *critical* for life on earth.

Life could NOT exist if any one of the following were true:

Slower Rotation of earth	Smaller earth	Earth's crust thinner	
Faster Rotation of earth	Larger earth	Earth's crust thicker	
2-5% farther from sun	Smaller moon	Oxygen/Nitrogen ratio greater	
2-5% closer to sun		larger moon	Oxygen/Nitrogen ratio less
1% change sunlight	More than one moon	Greater or lesser ozone ⁵⁴⁸	

So it is, that from the elements in creation that we can view or detect at the miniscule submicroscopic level (biochemistry) or at the largest telescopic level (cosmology), there are confirmations of fine-tuning and design at a level of complexity that modern man had never even imagined. The mathematical probabilities of this ever having happened in such a very precise way by sheer “pure dumb luck” are zero. There is magnificent and spectacular design that we are continuing to discover through new advances of science and adherence to conventional philosophy of science. Where could this intelligent design in nature (creation) have come from?

Some evolutionists, to be slavishly faithful to their materialist worldview, have even proposed that aliens from outer space created life. Besides the lack of evidence for the existence of such aliens, this argument only begs the question because a Creator outside of space and time would still be necessary. For the believers in Biblical truths, as for example in Psalm 136, we recognize and give thanks to our Creator God, for he is good, and his mercy endures forever; to Him who alone does great wonders, to Him that by wisdom made the heavens and stretched out the earth above the waters, who made the sun to shine by day and the moon and starts to rule by night, who even considers our low estate and brings us out of the

slavery and other calamities caused by human folly, we give praise, honor and thanksgiving. And our faith is reasonably sustained by the historically supported Gospel accounts of the birth of Jesus Christ, His sacrificial death for our sins, and His resurrection from the dead. This is the same Savior who offers us eternal life in His Kingdom.

In the spirit of intellectual freedom that has been the hallmark of the Western world in recent centuries, particularly in countries such as the United States, there has been a growing willingness to avoid even the appearance of religious intolerance. Christians, Jews, Muslims, atheists and others enjoy the same legal rights, privileges and obligations to advance the common good. However, some “overcorrections” have been occurring as we take to excess the value of not coercing others to accept any formal religion. As if by common agreement, people of different faiths have conceded that science should be taught in our public schools and universities without any religious overtones. This has been taken to the excess of identification of science with naturalism. Naturalism is not distinguishable from atheism because naturalism holds that no supernatural entity has influenced the world of nature. Methodological atheism and naturalism are identical.

Furthermore, in the *Watkins vs. Torcaso* Supreme Court case (1961), the Court declared that Secular Humanism, like Taoism, Buddhism and churches of Atheism, is a religion. Granted, these are non-theistic religions, but they are, all the same, religions, most having their own churches and clergypersons, and the right to be “conscientious objectors,” as per a later Court decision. Therefore, we now have the situation in American public education wherein 100% of the students are obliged to accept their science education according to a methodologically atheistic philosophy, even though at most some 17% of Americans have accepted this kind of naturalism/atheism. The only thing worse than having the minority coerced into miseducation by the majority, is having the majority coerced into miseducation by the minority.

Nancey Murphy of Fuller Theological Seminary, for example, objects to any statement of the possibility that scientists should consider the possibility

that "...life is what it so evidently seems to be, the product of creative intelligence." For her, that option is not acceptable because "...for better or worse, we have inherited a view of science as methodologically atheistic."⁵⁴⁹ While surely Murphy would not argue that methodological naturalism/atheism should rule science because atheism is true, she and many other Americans falsely argue that only evolutionary naturalism has the right to be considered as true science, even though it is based on an unfounded premise. Her thinking seems to support that of the National Academy of Sciences, which holds that creation-science is not science because

It fails to display the most basic characteristic of science: reliance upon naturalistic explanations. Instead, proponents of "creation science" hold that the creation of the universe, the earth, living things, and man was accomplished through supernatural means inaccessible to human understanding. "Creation-science" is thus manifestly a device designed to dilute the persuasiveness of the theory of evolution. The dualistic mode of analysis and the negative argumentation employed to accomplish this dilution is, moreover, antithetical to the scientific method.⁵⁵⁰

Johnson points out that "the Academy defined "science" in such a way that advocates of supernatural creation may neither argue for their own position nor dispute the claims of the scientific establishment. That may be one way to win an argument, but it is not satisfying to anyone who thinks it possible that God really did have something to do with creating mankind, or that some of the claims that scientists make under the heading of 'evolution' may be false."⁵⁵¹ Johnson, as a professional lawyer, poses the question as to whether Darwinism is based upon a fair assessment of the scientific evidence, or whether it is another kind of fundamentalism:

Do we really know for certain that there exists some natural process by which human being and all other living beings could have evolved from microbial ancestors, and eventually from non-living matter? When the National Academy of Sciences tells us

that reliance upon naturalistic explanations is the most basic characteristic of science, it is implying that scientists somehow know that a Creator played no part in the creation of the world and its forms of life. Can something be non-science but true, or does non-science mean nonsense? Given the emphatic endorsement of naturalistic evolutions by the scientific community, can outsiders ever contemplate the possibility that this officially established doctrine might be false?⁵⁵²

The naturalistic, or evolutionary worldview is fraught with errors and contradictions, as has been compellingly argued in the fields of biology, microbiology, biological information, biological causality, physics, astronomy, and cosmology. Yet it is also important to see how Neo-Darwinism is challenged by Mind-Science; the study of Human Consciousness, which is the subject of our next chapter.

Chapter 13:
***The Challenge to Neo-Darwinism from
Philosophy of the Mind***

Neo-Darwinism holds that the physical world is all that there is. Somehow, over the millennia, the human brain evolved with ever increasing levels of capacity, structure and complexity. At some point of development, persons developed “consciousness,” whereby they have subjectivity, feelings, hope, a point of view, self-awareness, introspection and a sense of their own private selves.

The Darwinian view of consciousness, according to Darwin’s contemporary and spokesman, Thomas Huxley, was that “Mind [or consciousness] is a function of matter, where that matter has attained a certain degree of organization.”⁵⁵³ Neo-Darwinists seem unable to budge from this position. In fact, some of these seem able to advance from their prestigious university positions, in the name of science, statements such as this:

Why should a bunch of atoms have thinking ability? Why should I, even as I write now, be able to reflect on what I am doing and why should you, even as you read now, be able to ponder my points, agreeing or disagreeing, with pleasure or pain, deciding to refute me or deciding that I am just not worth the effort? No one, certainly not the Darwinian as such, seems to have any answer to this...The point is that there is no scientific answer.⁵⁵⁴

Well, of course that depends on one's definition of science, as was looked at earlier in the Chapter on the Limitations of Science. It would be good to look at some of the history of Mind Studies, also known for centuries as Rational Psychology, to see how it is that Darwinists can have gotten themselves to the point of seriously making statements such as those quoted above from "Darwin's Bulldog," Thomas Huxley, and our 21st century philosopher, Michael Ruse. I take these points listed here below from Michael Maher's excellent synthesis in the *Catholic Encyclopedia*.⁵⁵⁵

Aristotle may have been the founder of the science of psychology, and he brings up many important points in his treatise titled *Peri Psyches*, better known nowadays by the Latin title, *De Anima*. Aristotle investigated phenomena by using: observation, both internal and external; comparison; experiment; hypothesis; and induction, as well as deduction and speculative reasoning. He defines the souls as the "Entelechy or form of a natural body potentially possessing life." He distinguishes three kinds of souls, or grades of life: the vegetative, the sensitive, and the intellectual or rational. In man, the higher virtually includes the lower. He investigates the several functions of nutrition, appetency, locomotion, sensuous perception and intellect or reason. Aristotle observed carefully human anatomy and physiology, and also introspection and conscious processes. For Aristotle, knowledge starts from sensation, but sense can only apprehend the concrete, singular thing. It is the function of the intellect to abstract the universal essence. He distinguishes between thought and sentiency. The intellect, or reason (*nous*) is immortal and is separate from sense.⁵⁵⁶

With the introduction of Christianity, thinkers were very keen on studying psychological problems having to do with the origin and immortality of the soul, free will and moral habits. Therefore, they systematically built upon *De Anima*, once Aristotelian thought made its way back into the West, and they made Rational Psychology a major branch of philosophy. St. Thomas Aquinas made extensive use of Aristotelian psychology during the 13th century. His Questions LXXV to XC of Part I of his *Summa Theologica* give a rather systematic account of the main topics concerned

with the soul. In Thomistic philosophy, and in Scholastic philosophies in general, there is a use of physiological evidence as well as metaphysical analysis and deductive argument. There was of course less systematic introspective observation and induction which are characteristic of modern psychology. Francisco Suárez did a treatise on scholastic psychology at the close of the Middle Ages. In his Book III, he enquires into the nature and working of the cognitive faculties, and especially of the senses. In Book IV, he enquires into the character of the activity of the intellect. His Book V deals with faculties of appetency and free will, and his Book VI is devoted to a speculative consideration of the condition and mode of operation of the soul in a future life. His order of treatment, starting from the essence and passing from there to the faculties and their operations is typical of the scholastic treatises. The method is principally deductive and the argument metaphysical, although they also deal with recognized physiological authorities from Aristotle to Vesalius.⁵⁵⁷

Descartes encouraged using the method of internal observation and scrutiny of fundamental ideas, while also dealing with the mechanical explanation in the "Traité des Passions." This in a way made him a precursor of physiological psychology. John Locke's "Essay on the Human Understanding," done in 1690, did even more to foster the method of analytic introspection. Although replete with errors, he strove to describe mental processes and did make a number of acute observations. His widely successful book helped give a notable empirical bent to future English psychology. Bishop Berkeley then used psychological observation and analysis in his "Theory of Vision," which helped him to establish his "Idealism." Then David Hume, the founder of the Associationist school of psychology, advanced further the emphasis of the method of introspective analysis by the bold skeptical conclusions he arrived at by his methods. Following in this Associationist school, Mills, Bain and Hubert Spencer continued this method and tradition. They constantly did a direct appeal to inner experience combined with systematic efforts to trace the genesis of the highest, most spiritual and complex mental conceptions back to elementary atomic states of sensuous consciousness. Thus, they could explain universal ideas, necessary truths,

the ideas of self, time, space, causality as well as the conviction of an external material world as the outcome of sensations and associations. They denied the reality of higher activities or faculties, as well as simplicity, spirituality and substantiality of the soul. It will be necessary to pay careful attention to their errors to expose them and lay a solid foundation for an updated rational psychology in the context of a complete human being.⁵⁵⁸

So it was that Rational or Metaphysical Psychology was practically extinguished from English philosophical literature during the 19th century. French thinkers in their turn took Locke's psychology and lead it into a direction of increasingly crude materialism. In Germany, metaphysics and philosophy were never reduced to the plain positivistic science of mental facts, as had happened in England and France. Although Kant dropped the concept of a philosophical science of the nature and attributes of the soul, and Fichte, Schelling and Hegel abandoned them as well, phenomenalism never was completely triumphant in Germany. For example, Hermann Lotze laid similar stress on the importance of scientific observations of our mental states, but also insisted that our introspective experience, correctly interpreted, affords abundant metaphysical justification for the doctrine of an immaterial soul.⁵⁵⁹

Herbart's attempts to express mental activities in mathematical formulae led to a more successful line of experimental research in the hands of Weber and others. This school has the goal of attaining the possible quantitative measure of conscious states. They attempt to measure by specialized instruments, the immediate physical antecedents and effects of various mental activities, to secure accurate quantitative descriptions of the mental states themselves. Most recently, the Association for Rational Psychology has forwarded a new definition of Rational Psychology as a part of mathematics and is concerned with mathematical and conceptual analysis of psychological notions. They admit that the name Rational Psychology was used by William James and others in earlier times, mainly as a synonym for philosophical psychology before the advent of modern mathematical logic. Jon Doyle reintroduced the term in 1982 as the psychological

correspondent of the field of Rational Mechanics, the field of Isaac Newton, Clifford Truesdell, and others, seeking to apply the perspective so successful in modern mechanics to the understanding of psychology and economics. (See: www.arp.org) There are several psychological laboratories doing this kind of research in Germany, America, and elsewhere. However, the advance of physiological science, and especially of that of the brain and nervous system, has also reacted on psychology, stimulating closer inquiry into relations between mental and bodily processes. It cannot, however, be maintained that the process of physiological knowledge, considerable though it is, has brought us appreciably nearer to the solution of the great problem; how body and mind act on each other.⁵⁶⁰

The scope of modern psychology is limited to the phenomena of the mind directly observable by introspection. It is a purely positivist science from which all philosophical problems are to be excluded, as rigorously as from chemistry or geology. It is psychology *sans âme*. Such questions as the nature, origin or destiny of the soul, if discussed at all, are not to be discussed in psychology or even in science, they affirm.⁵⁶¹

Catholic thinkers have traditionally conceived of psychology as one of the most important branches of philosophy. In their view, it could be described as the philosophical science which investigates the nature, attributes and activities of the soul or mind of man. By soul, or mind, is understood the ultimate principle within me by which I think, feel, will, and by which my body is animated. While the soul and mind are conceived as fundamentally one, the latter term is usually employed to designate the animating principle views as subject of my conscious or mental operations; the former denotes it as the root of all vital activities. By defining their branch of knowledge as a philosophical science, it is implied that psychology ought to include not only a doctrine of the laws of succession and concomitance of our conscious states, but an inquiry into their ultimate cause. Any adequate study of the human mind, it is contended, naturally presents itself in two stages—empirical or phenomenal psychology, and rational or metaphysical

psychology. Though conveniently separated for didactic treatment, the two are organically connected.⁵⁶²

Our metaphysical conclusions about the nature of the soul must rest on the evidence supplied by our experience of the character of its activities. On the other hand, any effort at thorough treatment of our mental operations, and especially any attempt at explanation of the higher forms or products of consciousness, it is suggested, is quite impossible without the adoption of some metaphysical theory as to the nature of the underlying subject of agents of these states. Even Professor Dewey has justly observed,

The philosophic implications embedded in the very heart of psychology are not got rid of when they are kept out of sight. Some opinion regarding the nature of the mind and its relations to reality will show itself on almost every page, and the fact that this opinion is introduced without the conscious intention of the writer, may serve to confuse both the author and his reader. (Psychology, IV).

Ladd, and others also, recognize the evil of “clandestine” metaphysics when smuggled into what claims to be purely “scientific” non-philosophical treatments of psychology.⁵⁶³

Psychology is not in the same position as the physical sciences here. While investigating a question in geology, chemistry, or mechanics, we may, at least temporarily, prescind from our metaphysical creed, but not so—judging from past history—when giving our psychological accounts and explanations of mental products, such as universal concepts, the notions of moral obligation, responsibility, personal identity, time, or the perception of an external material world, or the simple judgment, two plus two must make four. The view, therefore, of those philosophers who maintain that the intrinsic connections between many of the questions of empirical and rational psychology are so indissoluble that they cannot be divorced, seems to have solid justification. Of course, we can call the study of the phenomena of the mind “psychology,” and that of its inner nature the “Philosophy of the Mind.” And they might treat each in a separate volume. That is merely a

matter of terminology and convenience. But the important point is that in the explanatory treatment of the higher intellectual and rational processes, it will be impossible for the psychologist to preserve a philosophically neutral attitude. A truly scientific psychology, therefore, should comprise:

- ✦ A thorough investigation by introspective observation and analysis of our various mental activities—cognitive and appetitive, sensuous and rational—seeking to resolve all products of the mind back to their original elements, determining as far as possible their organic conditions, and tracing the laws of their growth.
- ✦ Based on the results of this study, a rational theory or explanatory account of the nature of the agent or subject of these activities, with its chief properties.⁵⁶⁴

Method of Psychology.

The primary method of investigation in empirical or phenomenal psychology is introspection or reflection observation of our own mental states. This is the ultimate source of all knowledge of mental facts; even the information gathered immediately from other quarters has finally to be interpreted in terms of our own subjective experience. Introspection is, however, liable to error. Consequently, it must be employed with care and helped and corrected by all the supplementary sources of psychological knowledge available. Chief among these are: the internal experience of other observers communicated through language; the study of the human mind as exhibited in different periods of life from infancy to old age, and in different races and grades of civilization; as embodied in various languages and literatures; and as revealed in the absence of particular senses, and in abnormal or pathological conditions such as dreams, hypnotism and forms of insanity. Moreover, the anatomy, physiology and pathology of the brain and nervous system supply valuable data as to the organic conditions of conscious states. Experimental psychology, psychophysics and psychometry help toward accuracy and precision in the description of certain forms of mental activity. And the comparative study of the lower animals may also

afford useful assistance regarding some questions of human psychology. By the utilization of these several sources of information the data furnished to the psychologist by the introspective observation of his own individual mind may be enlarged, tested and corrected, and may thus acquire in a certain degree the objective and universal character of the observations on which the physical sciences are built. Introspection is frequently spoken of as the subjective method; those other sources of information are supplementary objective methods of psychological study.⁵⁶⁵

Classification.

In empirical psychology, with modern writers, the next step after determining the method of the science is to attempt a classification of the phenomena of mental life. In scholastic philosophy the equivalent operation was the systematic division of the faculties of the soul. Apart from vegetative and locomotive power, the Scholastics, following Aristotle, adopted a bipartite division of the faculties into those of cognition and appetency. The former they subdivided into sensuous, and intellectual or rational. The sensuous faculties they again subdivided into the five external sense and the internal activities of imagination, sensuous memory, *sensus communis* and *vis cognitiva*. But there was much disagreement as to the number, character and boundary lines of these internal forms of sensuous cognition. There were also divergences of opinion as to the nature of the faculties in general in themselves and to what extent there was a *distinctio realis* between faculties and the essence of the soul. But on the other hand, there was general agreement as to an essential difference between all sensuous and intellectual or spiritual powers of the mind. The possession of the latter constitutes the *differentia* which separates man from the irrational animals.⁵⁶⁶

Content of Empirical Psychology.

The psychologist naturally begins with the treatment of the phenomena of sentience. The several senses, their organic structure and functions, the various forms of sentient activity with their cognitive, hedonic and appetitive properties and their special characteristics must be carefully

analyzed, compared, and described. Next, imagination and memory are similarly studied, and the law of their operation, growth, and development diligently traced. The discussion of the organic appetites springing from sensations, and the investigation of the nature and conditions of the most elementary forms of pleasure and pain may also appropriately come here. Intellect follows. The consideration of this faculty includes the study of the processes of conception, judgment, reasoning, rational attention, and self-conscious reflection. There, however, are all merely different functions of the same spiritual cognitive power—the intellect.

Psychology inquiries into their modes of operation, their special features, and the general conditions of their growth and development. From the higher power of cognition, it proceeds to the study of spiritual appetency, rational desire and free volition. The relations of will to knowledge, the qualities of cognitive activity and the effects repeated volitions in the production of habit, constitute the chief subjects of investigation here. *In connection with these higher forms of cognition and desire, there will naturally be undertaken the study of conscience and the phenomena of the emotions.*⁵⁶⁷

Genetic Treatment a Marked Characteristic of Modern Empirical Psychology.

The constant aim of modern psychology is to analyze all complex mental operations into their simplest elements and how to trace back to their first beginning, all acquired or composite habits and faculties, and to show how they have been generated or could have been generated from the fewest original aptitudes or fundamental activities of the mind. This is sound scientific procedure accepted also by the Scholastics. We may not postulate a special faculty for any mental state which can be accounted for by the cooperation of already recognized activities of the soul. But the labor and skill developed during the past century and a half to this combined analytic and synthetic procedure has developed one feature of modern psychology by which it is differentiated in a most marked manner from that of the Middle Ages and of Aristotle. The present-day treatment is pronouncedly

genetic. Thus, while the Scholastics in their account of mental operations, such as perception, cognition, or desire, considered these processes almost solely as elicited by the normal human being already in full possession and control of matured mental powers, the chief interest of the modern psychologist is to trace the growth of these powers from their first and simplest manifestations in infancy, and to discriminate what is the product of experience and acquired habits from that which is the immediate outcome of the innate capabilities of the soul. This is particularly noticeable if we compare the treatment of the mental operation of perception as given in most Scholastic textbooks with that to be found in any modern handbook of psychology. The point of view is usually quite different. Since much of the most plausible modern attacks on Scholastic psychological doctrine has been made in this manner, the genetic treatment from the Thomist standpoint of many psychological questions seems to us to be among the most urgent tasks imposed nowadays on the Neo-Scholastic psychologist. The value of such work from a philosophical standpoint would seem to be distinctly greater than that of any results likely to be achieved in quantitative experimental psychology. Obviously, there is nothing in the Thomistic conception of the soul and its operations incompatible with a diligent investigation into the unfolding of its various aptitudes and powers.⁵⁶⁸

Rational Psychology.

From the study of the character of the activities of the mind in experimental psychology, the student now passes on to inquire into the nature of the principle from which they proceed. This constitutes the more philosophical or metaphysical division of the science. For the analysis and explanatory accounts of the higher forms and products of mental activity, which the scientific psychologist is compelled to undertake even in phenomenal psychology, involve metaphysical assumption and conclusions which he cannot escape—certainly not by merely ignoring them. Still, it is in this second stage that he will formally evolve the logical consequences to which his previous study of the several forms of mental activity leads up. His method here will be both inductive and deductive; both analytic and

synthetic. He argues from effect to cause. From the character of the mental activities already scrutinized with so much care, he now concludes as to the nature of the subject to which they belong. From what the mind does, he seeks to learn what it is. In particular, from the simple spiritual nature of the higher activities of intellect and will, he infers that the being, the ultimate principle from which they proceed, must be of a simple and spiritual nature. Consequently, it cannot be the brain or any corporeal substance.

Having established the simplicity and spirituality of the soul, he then goes on to deduce further conclusions as to its origin, the nature of its union with the body and its future destiny. In this way, by rational arguments, the Scholastic thinkers claim to prove that the human soul can only have arisen by creation, that it is naturally incorruptible, and that the boundless aspirations of the intellect, the insatiable yearnings of the will, and the deepest convictions of the moral reason all combine to establish a future life of the soul after death.⁵⁶⁹

Having surveyed this overview presented by Maher, let us now more on to review some of the modern trends.

Artificial Intelligence.

The Neo-Darwinist “physicalist” position is that the physical world is all that there is and that the evolution of the human brain was such that, “when it reached a certain level of structure and complexity, people became “conscious,” being capable of subjectivity, feelings, hopes, a point of view, self-awareness and introspection, and that ‘hidden voice of our private selves.’”⁵⁷⁰ Since the modernist conception of Rational Psychology is one of “mathematical and conceptual analysis of psychological notions...,”⁵⁷¹ and since modern society has been successfully developing computers and robots, it was perhaps foreseeable that some physicalists would speculate about “...computer intelligence surpassing human intelligence in this century,” and even “spiritual computers.” Ray Kurzweil, National Medal of Technology laureate, has this to say about “the Ultimate Thinking Machine.”

By intelligence, I include all of the diverse and subtle ways in which humans are intelligent—including musical and artistic aptitude, creativity, physically moving, and even responding to emotion.

By 2019, a thousand-dollar computer will match the processing power of the human brain...By 2050, a thousand dollars of computing will equal the processing power of all human brains on Earth....Will these future machines be capable of having spiritual experiences? They certainly will claim to. They will claim to be people, and to have the full range of emotional and spiritual experiences that people claim to have.⁵⁷²

So it is that Kurzweil is applying Darwinian evolutionary thinking to the world of artificial intelligence. But does this argument “ring true,” or is there something fundamentally wrong with this picture? John Searle, a Professor of Mind at the University of California at Berkeley said about this claim, “You can expand the power all you want, hooking up as many computers as you think you need, and they still won’t be conscious, because all they’ll ever do is shuffle symbols.”⁵⁷³ Another atheist quipped about Kurzweil’s theory [If a machine can achieve equal or greater brain power as human beings, then the computer would become conscious], “When computers reach the point of imitating human behavior, only a racist would deny them full human rights.”⁵⁷⁴

Fortunately, many western philosophers and scientists have not taken leave entirely of our conventional wisdom and philosophy, and realize that working within the “physicalist,” or “monist” position is a very limited one that hardly does justice to the reality of a sentient human being; or to that of the human mind. It is also constraining, serving more as a “mental straitjacket” than a vehicle enabling the researchers to “follow the evidence wherever it leads.” For in fact, if physicalism were true, there would be several logical implications, according to Dr. J.P. Moreland:

- ✦ First, if physicalism is true, then consciousness does not really exist, because there would be no such thing as conscious states that must be described from a first-person point of view.
- ✦ Second, there would be no free will. That is because matter is completely governed by the laws of nature....So, if I'm a material object, all the things I do are fixed by my environment, my genetics, and so forth. That could mean I'm not really free to make choices. Whatever's going to happen is already rigged by my makeup and environment. So, how could you hold me responsible for my behavior if I wasn't free to choose how I would act? Citing the example of behaviorists advisors who assured the Pentagon that multiple bombings would condition the North Vietnamese to surrender, Moreland said of them: There was more to the Vietnamese than their physical brains responding to stimuli. They have souls, desires, feelings and beliefs, and they could make free choices to suffer and stand firm for their convictions despite our attempt to condition them by our bombing. So, if the materialists are right, kiss free will good-bye. In their view, we're just very complicated computers that behave according to the laws of nature and the programming we receive. But obviously they're wrong. We do have free will. We all know that deep down inside. We are more than just a physical brain.
- ✦ Third, if physicalism were true, there would be no disembodied intermediate state...This happens in near-death experiences. People are clinically dead, but sometimes they have a vantage point from above, where they look down at the operating table that their body is on. Sometimes they gain information they couldn't have known if this were just an illusion happening in their brain. One woman died and she saw a tennis shoe that was on the roof of the hospital (later confirmed by hospital staff). How could she have known this? ...When people hear near-death stories, ... they are intuitively attributing to that person a soul that could leave the body. And clearly these stories make sense, even if we're not sure they are true. ... As far back as 1965, psychologist John Beloff wrote in

The Humanist that the evidence of near-death experiences already indicates a “dualistic world where mind or spirit has an existence separate from the world of material things.”⁵⁷⁵ He conceded that this could “present a challenge to humanism as profound in its own way as that which Darwinian evolution did to Christianity a century ago.”⁵⁷⁶ ...Regardless of what anyone thinks about near-death experiences, we do have confirmation that Jesus was put to death and was later seen alive by credible eyewitnesses. Not only does this provide powerful historical corroboration that it is possible to survive after the death of our physical body, but it also gives Jesus great credibility when he teaches that we have both a body and an immaterial spirit.⁵⁷⁷

- ✦ A fourth consideration is that, by definition, Physicalism as a worldview holds that everything that exists is nothing but a single spatio-temporal system which can be completely described in terms of some ideal forms of physics.⁵⁷⁸ If Matter/energy is all that exists, God, souls and nonphysical abstract entities do not exist. If physicalism is true at the worldview level, then obviously, mind/body physicalism would follow. But it does not.
 - First, if theism is true, then physicalism as a world view is false, because God is not a physical being.
 - Second, a number of people have argued that scientific laws, and numbers exist, and that they are abstract, nonphysical entities (e.g., sets, substances, or properties).⁵⁷⁹ But if numbers and scientific laws exist, physicalism as a worldview is false because numbers and scientific laws are not physical entities.
 - Values, in addition to God, numbers and scientific laws exist, and they are not physical. Certain objects, such as persons and animals and events, have a nonphysical property of worth or goodness.⁵⁸⁰
 - If physicalism is true, then moral laws are not absolute objective realities (e.g., one should not torture babies). If certain objects possess goodness, and if certain moral laws are objective

realities, then physicalism must be false because the property of goodness and the nature of moral laws are not physical.⁵⁸¹

- o If physicalism is true, one cannot account for the existence and nature of theories, meanings, concepts, propositions, the laws of logic, and truth itself. But Theories exist and are discovered. Laws of logic are real laws that govern the relationships between propositions. Propositions exist and are the content of thoughts which become associated with the physical scratchings of a given language called sentences. While sentences may be made of black ink and placed on 4 inches of paper, the *content* of a sentence (i.e., the proposition or thought expressed by the sentence) cannot be contained by the paper and ink. These are nonphysical entities which can be in the mind.⁵⁸² Such entities are nonphysical entities which can be in the mind. The correlation between the thought and the reality it describes is a correspondence, but this is not a physical correspondence.
- o Universals exist and they are not material. A universal is an entity that can be in more than one place at the same time (redness, hardness, triangularity). However, a clump of matter is a particular. A particular clump of matter cannot be in more than one place at the same time. Physicalists deny the existence of universals at the level of general worldview because universals are not physical entities.
- o In addition, physicalists have spent a lot of time and effort trying to do away with numbers, values, propositions, laws of logic and universals by reducing them to notions compatible with physicalism. But these reductionist attempts have failed and physicalism as a worldview cannot adequately handle the existence of these entities. Theism can embrace them, however, by holding that God created these nonphysical entities and sustains them in existence.
- o Although some may attempt to hold that numbers and values exist, while denying the existence of the soul. However, much of

the motivation for mind/body physicalism has been the desire to argue for physicalism at the worldview level. If physicalism at that level is false, then part of the reason for holding to mind/body physicalism is removed. For example, just because one cannot see the soul, weight it, or say where it is, it does not follow that the soul does not exist. One cannot see, weigh, or locate numbers or values, but they still exist.⁵⁸³

In response to Lee Strobel's question: "What positive evidence is there that consciousness and the self are not merely a physical process of the brain?" Moreland responded:

We have experimental data... For example, neurosurgeon Wilder Penfield electrically stimulated the brains of epilepsy patients and found he could cause them to move their arms or legs, turn their heads or eyes, talk or swallow. Invariably the patient would respond by saying, "I didn't do that. You did." According to Penfield, "the patient thinks of himself as having an existence separate from his body."⁵⁸⁴

No matter how much Penfield probed the cerebral cortex, he said, "There is no place...where electrical stimulation will cause a patient to believe or to decide."⁵⁸⁵ That is because these functions originate in the conscious self, not the brain.

A lot of subsequent research has validated this. When Roger Sperry and his team studied the differences between the brain's right and left hemispheres, they discovered the mind as a causal power independent of the brain's activities. This led Sperry to conclude materialism was false.⁵⁸⁶

Another study showed a delay between the time an electric shock was applied to the skin, its reaching the cerebral cortex, and the self-conscious perception of it by the person. This suggests the self is

more than just a machine that reacts to stimuli as it receives them. In fact, the data from various research projects are so remarkable that Laurence C. Wood said, “Many brain scientists have been compelled to postulate the existence of an immaterial mind, even though they may not embrace a belief in an after-life.”⁵⁸⁷

Moreland also argues that there are philosophical arguments as well.

I know that consciousness is not a physical phenomenon because there are things that are true of my consciousness that aren't true of anything physical. Some of my thoughts have the attribute of being true. Tragically, some of my thoughts have the attribute of being false—like the Chicago Bears are going to go to the Super Bowl... However, none of my brain states are true or false. No scientist can look at the state of my brain and say, “Oh, that particular brain state is true and that one is false.” So, there's something true of my conscious states that are not true of any of my brain states, and consequently they cannot be the same thing.

Nothing in my brain is *about* anything. You cannot open up my head and say, “You see this electrical pattern in the left hemisphere of J. P. Moreland's brain? That about the Chicago Bears.” Your brains states aren't *about* anything, but some of my mental states are. So, they're different.⁵⁸⁸

Furthermore, my consciousness is inner and private to me. By simply introspecting, I have a way of knowing about what is happening in my mind that is not available to you, my doctor, or a neuroscientist. A scientist could know more about what is happening in my brain than I do, but he couldn't know more about what's happening in my brain than I do. He has to ask me.

Rapid Eye Movement indicates dreaming. How do scientists know that when there is a certain movement that people are dreaming? They've had to wake people and ask them. Scientists could watch the eyes move and read a printout of what was physically happening in the brain, so they could correlate brain states with eye movements. But they did not know what was happening in the mind. Why? Because that is inner and private.

So, the scientist can know about the brain by studying it, but he can't know about the mind without asking the person to reveal it, because conscious states have the feature of being inner and private, but brain states do not."⁵⁸⁹

The Reality of the Soul.

Moreland states: I think the soul is real because:

- ✦ First, we're aware that we're different from our consciousness and our body. We know that we're beings who have consciousness and a body, but we're not merely the same thing as our conscious life or our physical life. An illustration: A young woman on her honeymoon was knocked unconscious and lost a great deal of her memory and a good bit of her personality. She did not believe she had been married. As she started to recover, they showed her videos of the wedding to convince her that she had actually married her husband. She eventually got to the point where she believed it and she got remarried to him. Well, we all knew that was same person all along. She was Jamie's sister. She was not a different person, though she was behaving differently. But she had totally different memories. She had lost her old memories and she did not even have the same personality. What that proves is you can be the same person even if you lose old memories and gain new memories, or you lose some of your old personality traits and gain new personality traits. Now, if I were just my consciousness, when

my consciousness was different, I'd be a different person. But we know that I can be the same person even though my consciousness changes, so I can't be the same thing as my consciousness. I've got to be the "self," or "soul, that contains my consciousness.

- The same is true with the body. I can't be the same thing as my body or brain. There was ... an epileptic who underwent an operation in which surgeons removed fifty-three percent of her brain. When she woke up, nobody said, "we have 47% of a person here." A person cannot be divided into pieces. You are either a person or you are not. But your brain and your body can be divided. So that means I cannot be the same thing as my body.⁵⁹⁰

It is true that the soul and consciousness are invisible and that makes it difficult to conceptualize them. But no matter how much you study a person's physical matter, his ego and his conscious life are invisible. As Moreland says,

I *am* a soul, and I *have* a body. We don't learn about people by studying their bodies. We learn about people by finding out how they feel, what they think what they're passionate about, what their worldview is, and so forth. Staring at their body might tell us whether they like exercise, but that is not very helpful. That's why we want to get "inside" people to learn about them. ... So, my conclusion is that there is more to me than my conscious life and my body. In fact, I am a "self," or an "I," that cannot be seen or touched unless I manifest myself through my behavior or my talk. I have free will because I'm a "self," or a "soul," and not just a brain.⁵⁹¹

In contrast, a computer has no awareness, first person point of view, no insight into problems. A computer does not think or have consciousness. Consciousness is what causes behavior in conscious beings, but what causes behavior in a computer is electric circuitry. They can imitate human intelligence, but will never have consciousness, be alive and sentient. Even if a computer could be

programmed to say it is conscious or act as though it were conscious, it can never truly become conscious, because consciousness is an immaterial entity apart from the brain. We have self-reflection and self-thinking, and the human soul outlives the death of its body.⁵⁹²

Consciousness and Evolution.

For Darwinists, this is a problem because the emergence of consciousness is a mystery, and one to which materialism fails to provide an answer. Atheist Colin McGinn agrees: “How can mere matter originate consciousness? How did evolution convert the water of biological tissue into the wine of consciousness? Consciousness seems like a radical novelty in the universe, not prefigured by the aftereffects of the Big Bang. So how did it contrive to spring into being from what preceded it?”⁵⁹³ Moreland responds to his question:

Here’s the point: *you can’t get something from nothing*. It’s as simple as that. If there were no God, then the history of the entire universe, up until the appearance of living creatures, would be a history of dead matter with no consciousness. You would not have any thoughts, beliefs, feelings, sensations, free actions, choices or purposes. There would be simply one physical event after another physical event, behaving according to the laws of physics and chemistry....If you apply a physical process to physical matter, you’re going to get a different arrangement of physical materials. For example, if you apply the physical process of heating to a bowl of water, you’re going to get a new product—steam—which is just a more complicated form of water, but it’s still physical. And if the history of the universe is just a story of physical processes being applied to physical materials, you’d end up with increasingly complicated arrangements of physical materials, but you’re not going to get something that is completely nonphysical. That is a jump of a totally different kind...

At the end of the day, as Phillip Johnson put it, you either have “In the beginning were particles,” or “in the beginning was the *Logos* (Divine mind, word, meaning)”. If you start with particles, and the history of the universe is just a story about the rearrangement of particles, you may end up with a more complicated arrangement of particles, but you’re still going to have particles. You’re not going to have minds or consciousness.

However, ...if you begin with an *infinite* mind, then you can explain how finite minds come into existence. That makes sense. What does not make sense—and which many atheistic evolutionists are conceding—is the idea of getting a mind to squirt into existence by starting with brute, dead, mindless matter. That is why some of them are trying to get rid of consciousness by saying it’s not real and that we’re just computers....However, that’s a pretty difficult position to maintain when you are conscious.⁵⁹⁴

The Emergence of the Mind.

Lee Strobel protested to Moreland, “Some scientists maintain that consciousness is just something that happens as a natural byproduct of our brain’s complexity. They believe that once evolution gave us sufficient brain capacity, consciousness inexorably emerges as a biological process.” Moreland brings up four problems with that:

- First, they are no longer treating matter as atheists and naturalists treat matter—namely, as brute stuff that can be completely described by the laws of chemistry and physics. Now they are attributing spooky, soulish, or mental potentials to matter.
- They’re saying that prior to this level of complexity, matter contained the potential for mind to emerge—and at the right moment, guess what happened? These potentials were activated and consciousness was sparked into existence. ...That is no longer naturalism: that’s panpsychism, which is the view that matter is not just inert physical

stuff, but that it also contains proto-mental states in it. Suddenly, they've abandoned a strict scientific view of matter and adopted a view that is closer to theism than to atheism. Now they're saying that the world began not just with matter, but with stuff that is mental *and* physical at the same time. Yet they can't explain where these pre-emergent mental properties came from in the first place. And this also makes it hard for them to argue against the emergence of God. If a finite mind can emerge when matter reaches a certain level of complexity, why cannot a far greater mind—God—emerge when millions of brain states reach a greater level of consciousness? You see, they want to stop the process where they want it to stop—at themselves—but you cannot logically draw that line. How can they know that a very large God has not emerged from matter because, after all, haven't a lot of people had religious experiences with God? This is a problem for atheists.

- ✦ There's a second problem. They would still be stuck with determinism because if consciousness is just a function of the brain, then I'm my brain and my brain functions according to the laws of chemistry and physics. To them, the mind is to the brain as smoke is to fire. Fire causes smoke, but smoke doesn't cause anything. It's just a byproduct. Thus, they're locked into determinism.
- ✦ Third, if mind emerged from matter without the direction of a superior Intelligence, why should we trust anything from the mind as being rational or true, especially in the area of theoretical thinking? Let me give you an analogy. Let's say that you had a computer that was programmed by random forces or by nonrational laws without a mind being behind it. Would you trust a printout from that machine? Of course not. Well, same with the mind—and that's a problem for Darwinists. And by the way, you cannot use evolution as an explanation for why the mind should be considered trustworthy, because theoretical thinking does not contribute to survival value. (To this, Strobel brought up J.B.S. Haldane's quote: "If my mental processes are determined wholly by the motions of

the atoms in my brain, I have no reason to suppose that my beliefs are true...and hence I have no reason for supposing my brain to be composed of atoms.”

- ✦ Fourth; If my mind were just a function of the brain, there would be no unified self. Remember, brain function is spread throughout the brain, so if you cut the brain in half, like the girl who lost 53% of her brain, then some of that function is lost. Now you've got 47% of a person? Well, nobody believes that. We all know she's a unified self because we all know her consciousness and soul are separate entities from her brain.
- ✦ Recent brain studies have shown activity in certain areas of the brain during meditation and prayer. They do not demonstrate that there is a physical basis for these religious experiences. All it shows is that there is a physical *correlation* with religious experiences.... Just because there is a correlation between fire and smoke does not mean smoke is the same as fire.
- ✦ Sometimes brain states can cause your conscious states. For example, if you lose brain functioning due to Alzheimer's disease ...you lose some of your mental conscious life. But there is also evidence that this goes the other way as well. There are data showing that your conscious life can actually reconfigure your brain. For example, scientists have found that the mental state of worry changed persons' brain chemistry. Scientists have also done comparative studies of the brain patterns of little children who were not nurtured and loved, compared to the brain patterns of children who have warm experiences of love and nurture. So, it's not just the brain that causes things to happen in our conscious life; conscious states can also cause things to happen to the brain. Consequently, I would not want to say there is a physical basis for religious experiences, even though they might be correlated. Sometimes it could be cause-and-effect from brain to mind, but it can also be cause-and-effect from mind to brain.⁵⁹⁵

Intentionality.

Moreland develops this argument in his book *Scaling the Secular City*:

Some have argued that the mark of the mental is intentionality. This is the mind's *aboutness*, or *oneness*. Mental states point beyond themselves to other objects, even if those objects do not exist. I have a thought about my wife, I hope for a new car, I dream of a unicorn. The mind has the ability to transcend itself and be of or about something else. This aboutness is not a property of anything physical. Some physicalists have tried to reduce intentionality to the mere ability to receive input, give output, and advance to some other internal state. Computers can do this, but they have no awareness of or about anything. Therefore, physical states do not have intentionality and thus the fact of intentionality is evidence that the self is not physical but mental.⁵⁹⁶

Personal Identity.

We all recognize that our physical body changes all the time and, about every 7 years, every cell in our body is replaced. Moreland discusses this question:

Our baby pictures—are they of us or of ancestors who resemble us? Does each person—you—maintain literal, absolute identity through change or not? We substance dualists hold that persons do maintain absolute identity through change, because they have, in addition to their bodies, a soul that remains constant through change, and personal identity is constituted by sameness of soul, not sameness of body.

But physicalists hold that personal identity is not absolute. They argue that persons are really ancestral chains of successive “selves” which are connected with one another in some way. At each moment, a new self exists (since the self or physical organism is constantly in flux, losing and gaining parts) and this self resembles the self prior to and after it. So, substance dualists hold

to a loose, relative sense of personal identity which amounts to a stream of successive selves held together into “one” person by resemblance between each self (also called a person stage), similarity of memory, and spatial continuity. For the physicalist, a person becomes a “space-time worm,” a path traced through space and time. The person is the entire path marked off at the time and place of his birth and death. At any given moment and location, where “I” happen to be, “I” am not a person, just a person stage. The person is the whole path. So, there is no literal sameness through change.⁵⁹⁷

So, are there any problems with this picture? Moreland cites these:

- ✦ Why should I ever worry about the future? When it gets here, “I” will not be present; rather another self who looks like me will be there, but “I” will have ceased to exist.
- ✦ Why should anyone be punished? The self who did the crime in the past is literally not the same self who is present at the time of punishment. This seems to call for a radical readjustment of our common-sense notions of future expectations and past actions because both presuppose a literal identity of the same self present in past, present and future.
- ✦ Physicalists can also not explain the unity of the self—not even over time, but also the unity of the self at any given time. As Harvard philosopher W.V.O. Quine puts it, “according to physicalism the self becomes a sum or heap of scattered physical parts. There is no self which *has* each experience. The self has no real unity. In contrast, the dualist says that the soul is diffused throughout the body and is present before each experience. The soul has each experience. The unity of consciousness is due to the fact that the same soul is the possessor of each and every experience of consciousness. But the physicalist just say that each experience is possessed by different parts of the body and there is no real unity. However, my own experience of the unity of my consciousness shows this unity to be genuine and not arbitrary. I have my experiences. They are all *mine*. Physicalism cannot adequately explain this fact.”⁵⁹⁸

The Return of Ockham's Razor.

Ockham's Razor is a philosophical principle which states that we should not multiply entities beyond what's needed to explain something. Strobel therefore asked Moreland if Ockham's Razor might favor a simple alternative, such as the brain accounting for everything, rather than a more complicated explanation like the two entities of dualism. Moreland replied:

No, it really does not. Actually, Ockham's Razor favors dualism, and here's why... The thrust of this principle is that when you're trying to explain a phenomenon, you should only include the elements that are necessary to explain the phenomenon. And as I've demonstrated through scientific evidence and philosophical reasoning, dualism is necessary to explain the phenomenon of consciousness. Only dualism can account for all the evidence and hence it does not violate Ockham's Razor. ... There will never be a scientific explanation for mind and consciousness, and this is because scientists go about explaining things by showing that something had to happen due to antecedent condition.... Scientists need to show why something has to happen, given the cause. They're not content simply to correlate things and leave it at that. ...The relationship between the mind and the brain is contingent, or dependent. ...The mind isn't something that *had* to happen. One atheist asked: "How could a series of physical events, little particles jostling against one another, electric currents rushing to and fro, blossom into conscious experience? Why should not pain and itches be switched around? Why should any experience emerge when these neurons fire in the brain?" He's pointing out that there is no necessary connection between conscious states and the brain. But *correlation is not explanation*. To explain something scientifically, you've got to show *why* the phenomenon *had* to happen given the causes. And scientists cannot explain the "why" behind consciousness because there is no necessary connection

between the brain and consciousness. It did not have to happen this way.⁵⁹⁹

Given the severe limitations of physicalist or “monist” philosophy, it is understandable that philosopher Alvin Plantinga of Notre Dame University stated about the mind/body debate: “Things don’t look hopeful for Darwinian naturalists.”

Faced with data and logic that support dualism, and unable to offer a plausible theory for how consciousness could have erupted from mindless matter, atheists are pinning their hopes on some as-yet-undetermined scientific discover to justify their faith in physicalism. And even there, physicist and atheist Steven Weinberg said scientists may have to “bypass the problem of human consciousness” altogether because “it may just be too hard for us.”⁶⁰⁰

Moreland agrees with Plantinga’s bleak assessment for atheists.

Darwinian evolution will never be able to explain the origin of consciousness...Perhaps Darwinists can explain how consciousness was shaped in a certain way over time, because the behavior that consciousness caused had survival value. But it can’t explain the *origin* of consciousness because it cannot explain how you can get something from nothing....In Darwin’s notebooks, he said if there was anything his theory cannot explain, then there would have to be another explanation—a creationist explanation. Well, he can’t explain the origin of mind. He tried to reduce consciousness down to the brain because he could tell a story about how the brain evolved. But...consciousness cannot be reduced merely to the physical brain. This means the atheist creation story is inadequate and false. And yet this is an alternative explanation that makes sense of all the evidence; our consciousness came from a Greater Consciousness.

The Christian worldview begins with thought and feeling and belief and desire and choice. That is, God is conscious. God has thoughts, beliefs, desires, awareness, He is alive and He acts with purpose. We start there. And because we start with the mind of God, we don't have a problem with explaining the origin of our mind. We deduce about God that he is rational, intelligent, creative and sentient. And He is invisible because that's the way conscious beings are.

Furthermore, the existence of my soul gives me a new way to understand how God can be everywhere. That's because my soul occupies my body without being located in any one part of it. That is why, if I lose part of my body, I don't lose part of my soul... God occupies space in the same way the soul occupies the body. If space were cut in half, God would not lose his being. So now I have a new model, based on my own self, for God's omnipresence. And shouldn't we expect this? If we were made in the image of God, wouldn't we expect there to be some parallels between us and God?⁶⁰¹

When Moreland was asked if he foresaw more scientists concluding that the soul, though immaterial, is very real, he answered:

Yes, if they are willing to open themselves up to nonscientific knowledge. I believe in science, but there are other ways of knowing as well. Remember, most of the evidence for the reality of consciousness and the soul is from our own first-person awareness of ourselves and has nothing to do with the study of the brain. The study of the brain allows us to correlate the brain with conscious states, but it tells us nothing about what consciousness itself is... I'm asking that scientists become willing to listen to all the evidence and see where it leads—which is what the quest for truth should be about. If they do that, they will come to believe in the reality of the soul and the immaterial nature of consciousness. And this could open them up personally to something even more important—to

a much larger Mind and a much bigger Consciousness, who in the beginning was the Logos, and who made us in His image.⁶⁰²

Lee Strobel agrees with philosopher Robert Augros and physicist George Stanciu, who explored the depths of the mind/body controversy and concluded that “physics, neuroscience and humanistic psychology all converge on the same principle: mind is not reducible to matter... The vain expectation that matter might someday account for mind...is like the alchemist’s dream of producing gold from lead”⁶⁰³

TWILIGHT OF DARWINISM

Part V:

*Darwinism's Tragic Legacy in Philosophy,
Education and Law*

Chapter 14: *Applied Darwinism in Ethics*

Ideas Have Consequences.

After the great bloodbath of the Second World War, in trying to make some sense out of our Western civilization that had just run so badly amok, and do a badly needed *post mortem*, Richard Weaver wrote in the latter 1940s, while Europe was still covered in ashes and rubble—the remains of monuments, institutions and murdered human beings—a monumental book titled *Ideas Have Consequences*. He found it necessary to draw up a deductive account that led to that decline. He found it necessary to start with “an assumption that the world is intelligible, and that man is free, (so) that these those consequences (they) were then expiating (were) the product not of biological or other necessity but of unintelligent choice.” He went on to propose, “...if not a whole solution, at least the beginning of one, in the belief that man should not follow a [merely] scientific analysis with a plea of moral impotence.”⁶⁰⁴

One difficulty needing to be faced, he argued, is that of overcoming

...the prevailing Whig theory of history, with its belief that the most advanced point in time represents the highest development, aided no doubt by theories of evolution which suggest to the uncritical a kind of necessary passage from simple to complex. Yet, the real trouble is found to lie deeper than this. It is the appalling problem, when one comes to actual cases, of getting men to distinguish between better

and worse. Are people today provided with a sufficiently rational scale of values to attach these predicates to intelligence? There is ground for declaring that modern man has become a moral idiot. So few are those who care to examine their lives, or to accept the rebuke, which comes of admitting that our present state may be a fallen state, that one questions whether people now understand what is meant by the superiority of an ideal...

Surely, we are justified in saying of our time: "If you seek the monument to our folly, look about you." ... At the height of modern progress, we behold unprecedented outbreaks of hatred and violence; we have seen whole nations desolated by war and turned into penal camps by their conquerors; we find half of mankind looking upon the other half as criminal. Everywhere occur symptoms of mass psychosis. Most portentous of all, there appear diverging bases of value, so that our single planetary globe is mocked by worlds of different understanding. These signs of disintegration arouse fear, and fear leads to desperate unilateral efforts toward survival, which only forward the process.

Like Macbeth, Western man made an evil decision, which has become the efficient and final cause of other evil decisions. Have we forgotten our encounter with the witches on the heath? It occurred in the late fourteenth century and what the witches said to the protagonist of this drama was that man could realize himself more fully if he would only abandon his belief in the existence of transcendentals. The powers of darkness were working subtly, as always, and they couched this proposition in the seemingly innocent form of an attack upon universals. The defeat of logical realism in the great medieval debate was the crucial event in the history of Western culture; from this flowed those acts which issue now in modern decadence.

... I take the view that the conscious policies of men and governments are not mere rationalizations of what has been brought about by unaccountable forces. There are rather deductions from our most basic ideas of human destiny, and they have a great, though not unobstructed, power to determine our course.

For this reason, I turn to William of Occam as the best representative of a change which came over man's conception of reality at this historic juncture. It was he who propounded the fateful doctrine of nominalism, which denies that universals have a real existence... The issue ultimately involved is whether there is a source of truth higher than, and independent of, man; and the answer to the question is decisive for one's view of the nature and destiny of humankind. The practical result of nominalist philosophy is to banish the reality which is perceived by the intellect and to posit as reality that which is perceived by the senses. With this change in the affirmation of what is real, the whole orientation of culture takes a turn, and we are on the road to modern empiricism.

It is easy to be blind to the significance of a change because it is remote in time and abstract in character. Those who have not discovered that *worldview* is the most important thing about a man, as about the men comprising a culture, should consider the train of circumstances which have with perfect logic proceeded from this. The denial of universals carries with it the denial of everything transcending experience... With the denial of objective truth, there is no escape from the relativism of "man, the measure of all things." The witches spoke with the habitual equivocation of oracles when they told man that by this easy choice, he might realize himself more fully, for they were actually initiating a course that cuts one off from reality. Thus began the "abomination of desolation" appearing today as a feeling of alienation from all fixed truth.

Because a change of belief so profound eventually influences every concept, there emerged before long a new doctrine of nature. Whereas nature had formerly been regarded as imitating a transcendent model and as constituting an imperfect reality, it was henceforth looked upon as containing the principles of its own constitution and behavior. This encouraged a careful study of nature, which has come to be known as science, on the supposition that by her acts she revealed her essence. Second, it did away with the (Aristotelian) view of an element of unintelligibility in the world. The expulsion of the element of unintelligibility in nature was followed by the abandonment of the doctrine of original sin. If physical nature is the totality and if man is of nature, it is impossible to think of him as suffering from constitutional evil; his defections must now be attributed to his simple ignorance or to some kind of social deprivation. One comes thus by clear deduction to the corollary of the natural goodness of man.

And the end is not yet. If nature is a self-operating mechanism and man is a rational animal adequate to his needs, it is next in order to elevate rationalism to the rank of a philosophy. Since man proposed now not to go beyond the world, it was proper that he should regard as his highest intellectual vocation methods of interpreting data supplied by the senses. There followed the transition to Hobbes and Locke and the 18th century rationalists, who taught that man needed only to reason correctly upon evidence from nature. The question of what the world was made for now becomes meaningless because the asking of it presupposes something prior to nature in the order of existents. Thus it is not the mysterious fact of the world's existence which interests the new man but explanations of how the world works. This is the rational basis for modern science, whose systemization of phenomena is, as Bacon declared in the *New Atlantis*, a means to dominion.

At this stage, religion begins to assume an ambiguous dignity, and the question of whether it can endure at all in a world of rationalism and science, has to be faced. One solution was deism, which makes God the outcome of a rational reading of nature. But this religion, like all those which deny antecedent truth, was powerless to bind; it merely left each man to make what he could of the world open to the senses. There followed references to “nature and nature’s God,” and the anomaly of a humanized religion.

Materialism loomed next on the horizon, for it was implicit in what had already been framed. Thus it soon became imperative to explain man by his environment, which was the work of Darwin and others in the 19th century (it is further significant of the pervasive character of these changes that several other students were arriving at similar explanations when Darwin published in 1859). If man came into this century trailing clouds of transcendental glory, he was now accounted for in a way that would satisfy the positivists.

With the human being thus firmly ensconced in nature, it at once became necessary to question the fundamental character of his motivation. Biological necessity, issuing in the survival of the fittest, was offered as the *causa causans*, after the important question of human origin had been decided in favor of scientific materialism.

After it has been granted that man is molded entirely by environmental pressures, one is obliged to extend the same theory of causality to his institutions. The social philosophers of the 19th century found in Darwin powerful support for their thesis that human beings always act out of economic incentives, and it was they who completed the abolishment of freedom of the will. The great pageant of history thus became reducible to the economic endeavors of individuals and classes; and elaborate prognoses were constructed on the theory of economic conflict and resolution. Man created in the divine image, the protagonist of a great drama in

which his soul as at stake, was replaced by man the wealth-seeking and consuming animal.

Finally came psychological behaviorism, which denied not only freedom of the will but even such elementary means of direction as instinct. Because the scandalous nature of this theory is quickly apparent, it failed to win converts in such numbers as the others; yet it is only a logical extension of them and should in fairness be embraced by the upholders of material causation. Essentially, it is a reduction to absurdity of the line of reasoning which began when man bade a cheerful goodbye to the concept of transcendence.

There is no term proper to describe the condition in which he is now left unless it be "abysmality." He is in the deep and dark abyss, and he has nothing with which to raise himself. His life is practice without theory. As problems crowded upon him, he deepens confusion by meeting them with *ad hoc* policies. Secretly he hungers for truth but consoles himself with the thought that life should be experimental ... He struggles with the paradox that total immersion in matter unfits him to deal with the problems of matter.

His decline can be represented as a long series of abdications. He has found less and less ground for authority at the same time he thought he was setting himself up as the center of authority in the universe; indeed, there seems to exist here a dialectic process which takes away his power in proportion as he demonstrates that his independence entitles him to power.

This story is eloquently reflected in changes that have come over education. The shift from the truth of the intellect to the facts of experience followed hard upon the meeting with the witches. A little sign appears, "a cloud no bigger than a man's hand," in a change that came over the study of logic in the fourteenth century—the century of Occam. Logic became grammaticized, passing from a science

which taught men *vere loqui* (speaking truth) to one which taught *recte loqui* (speaking correctly) or from an ontological division by categories to a study of signification, with the inevitable focus upon historical meanings. Here begins the assault upon definition: if words no longer correspond to objective realities, it seems no great wrong to take liberties with words. From this point on, faith in language as a means of arriving at truth weakens, until our own age, filled with an acute sense of doubt, looks for a remedy in the new science of semantics. ... Institutions of learning did not check but rather contributed to the decline by losing interest in *Homo sapiens* to develop *Homo faber*.⁶⁰⁵

... It must be apparent that logic depends on the dream, and not the dream upon it. We must admit this when we realize that logical processes rest ultimately in classification, that classification is by identification, and that identification is intuitive. It follows then that a waning of the dream results in confusion of counsel, such as we behold on all sides in our time. Whether we describe this as decay of religion or loss of interest in metaphysics, the result is the same; for both are centers with power to integrate and, if they give way, there begins a dispersion which never ends until the culture lies in fragments. There can be no doubt that the enormous exertions made by the Middle Ages to *preserve a common worldview*, exertions which took forms incomprehensible to modern man because he does not understand what is always at stake under such circumstances—signified a greater awareness of realities than our leaders exhibit today. The Schoolmen understood that the question, *universalia ante rem or universalia post rem* (i.e., *universal before the thing, or after the thing*), or the question of how many angels can stand on the point of a needle, so often cited as examples of Scholastic futility, has incalculable ramifications so that, unless there was agreement upon these questions, unity in practical matters was impossible. For the answer supplied that with which they bound up their world; the ground of this answer was the fount

of understanding and of evaluation; it gave the heuristic principle by which societies and arts could be approved and regulated. It made one's sentiment toward the world rational, with the result that it could be applied to situations without plunging man into sentimentality on the one hand or brutality on the other.⁶⁰⁶

The imposition of this ideational pattern upon conduct relieves us of the direful recourse to pragmatic justification. Here, indeed, lies the beginning of self-control, which is a victory of transcendence. When a man chooses to follow something which is arbitrary as far as the uses of the world go, he is performing a feat of abstraction; he is recognizing the *noumenal*, and it is this, and not that self-flattery which takes the form of a study of his own achievements, that dignifies him.

Such is the wisdom of many oracular sayings: man loses himself in order to find himself; he conceptualizes in order to avoid an immersion in nature. It is our destiny to be faced originally with the world as our primary datum but not to end our course with only a wealth of sense impressions. In the same way that our cognition passes from a report of particular details to a knowledge of universals, so our sentiments pass from a welter of feeling to an illumined concept of what one ought to feel. This is what is known as refinement.... Without the transcendental truth of mythology and metaphysics, that task is impossible. One imagines that Jacob Burckhardt had a similar thought in mind when he said, "Yet there remains with us the feeling that all poetry and all intellectual life were once the handmaids of the holy, and have passed through the temple."⁶⁰⁷

Morality, Responsibility and Punishment.

Physicalism seems to imply determinism. J.P. Moreland argues that, If I am just matter, then my actions are not the result of free choice. They are determined by the laws of chemistry and physics plus boundary

conditions. But then it is hard to make sense of moral obligation and responsibility. If I “ought” to do something, it seems to be necessary to suppose that I can do it. But if physicalism is true, I do not have any genuine ability to choose my actions. It is safe to say that physicalism requires a radical revision of our common-sense notions of freedom, moral obligation, responsibility and punishment. If these common-sense notions are true, then physicalism is false.⁶⁰⁸

It is important to be aware of the meaning of moral statements to persons who hold to different schools of Metaethics. Metaethics is that branch of philosophy which analyses the meaning of certain moral terms (right, wrong, good, bad, ought, worth, etc.). The major schools of Metaethics are: Noncognitive Theories, [such as Emotivism and Imperativism] Cognitive Theories, [such as Subjectivist theories like private subjectivism and cultural relativism] and Objectivist theories, [such as Ethical naturalism and Ethical Nonnaturalism].⁶⁰⁹ Here are some examples of how they reason:

- ✦ Noncognitivist theories of moral statements deny that moral statements are indicative statements which can be either true or false. They have ontological implications. Indicative statements are cognitive in the sense that they can be either true or false and they have ontological implications because they assert that some state of affairs obtains in the world. E.g., this apple is red, or is green and thus not red. Noncognitivist theories deny that moral statements are either true or false and that moral statements have ontological implications. Emotivists hold that the meaning of moral statements consists in the *expression of emotions*. For example, “X” is right really means “Horray for X!”, while “X” is wrong really means , “Down with X.” When someone says that murder is wrong, emotivists hold that the person is merely expressing the feeling, “I hate murder!” Imperativists agree with emotivists that moral statements are not indicative statements of fact. But they do not think that moral statements are expressions of feelings. Rather, they hold that moral statements are merely moral commands.⁶¹⁰

Noncognitivist theories fail to do justice to the nature of morality for three reasons:

- o First, moral judgments can occur in the absence of feelings, or some commands are not moral judgments. Feelings and commands may be a part of a general theory of morality, but they do not exhaust the nature of morality. Moral judgments can occur without feelings or commands and vice versa. Therefore, they cannot be identical.
 - o Emotivism and imperativism imply that there is no such thing as moral education since there is no cognitive information to learn and there is no such thing as a moral disagreement. In a dispute, neither claim can be true or false. Thus emotivism and imperativism imply the impossibility of moral disagreement. But any view which implies such an implausible assertion as this is inadequate as a general theory of moral meaning.
 - o Some moral statements seem to stand in logical relations with other moral statements. For example, the statement, "I have a duty to do X" seems to logically imply the statement "I have a right to do X." But emotional utterances or mere imperatives do not stand to other emotional utterances or mere imperatives in logical relationships. Only indicative statements can stand in logical relationships to one another. So, emotivism and imperativism fail to account for this feature of morality.⁶¹¹
- ✦ Cognitive Theories of the meaning of moral statements agree in holding that moral statements make truth claims because they are indicative statements which convey descriptive factual information. The statement "X is right!" may be either true or false. Cognitivist theories differ, however, over what the object is which ethical statements describe.⁶¹²
- o Subjectivist Theories hold that moral statements convey information about the speaker of the moral statement.

According to private subjectivism, "X is right!" states the psychological fact that "I dislike X!" Emotivism, on the other hand, holds that moral statements merely *express* feelings. Private subjectivism holds that moral statements do not *express* feelings but describe the psychological state of the speaker. An expression of feeling cannot be false. But if person A says, "I dislike X!" then this can be false if he really likes x but does not want to admit it. Cultural relativism is the view that statements like "x is right" states the sociological fact that "we in our culture dislike x." Cultural relativism and private subjectivism are very much alike and will be criticized more fully in chapter 8. But for now, it should be pointed out that few philosophers hold these metaethical theories are adequate treatments of morality. The main reason is that they make moral statements into non-moral statements. The statement "X is right" appears to be a *moral* statement which makes a normative claim about right and wrong, and it carries with it a statement about what one *ought* to do. But the psychological and sociological translations of these statements "I like X!" make no normative claims whatever. They merely assert what people happen to like. So they do not translate moral statements; they transform them inappropriately into non-moral statements. Thus, private subjectivism and cultural relativism cannot be adequate understandings of moral meaning.⁶¹³

- o Objectivist theories. Agree with the subjectivist theories of moral meaning in holding that moral statements assert true or false statements of fact. However, they do not think that moral statements are stating facts about the speakers of moral statements but about the acts of morality themselves or the objects which are said to have value. Moral statements assert that persons or moral acts have certain properties. In short, objectivist theories hold that moral statements convey information about persons or moral acts by describing

properties of these persons or acts.⁶¹⁴ But here the agreement ends. There are two major versions of objectivism, ethical naturalism and ethical nonnaturalism, and they disagree over the nature of the moral properties that moral judgments ascribe to persons or acts. The debate between them is over the issue of moral reductionism (i.e., over whether or not moral properties can be reduced to and identified with non-moral properties). Ethical naturalists say that such a reduction is correct and ethical nonnaturalists say that moral properties are unique and cannot be reduced to nonmoral properties.

- ✦ Ethical naturalism is a reductionist view which holds that ethical terms (goodness, worth, and right) can be defined by or reduced to natural, scientific properties which are biological, psychological, sociological, or physical in nature. For example, according to ethical naturalism, the term *right* in “X is right!” means one of the following: “what is approved by most people,” “What most people desire,” “what is approved by an impartial, ideal observer,” “what maximizes desire or interests,” or “what furthers human survival,” etc. The important point here is that these moral terms and properties are not irreducibly moral in nature. Moral properties (e.g., worth, goodness, or rightness) turn out to be properties which are biological or psychological. These properties can, in turn, be measured by science (pleasure, pain, heart rate, absence of certain impulses in the nervous system, slight coloration of the skin, etc.) by giving them operational definitions.

Two major obstacles can be raised against ethical naturalism.

- ✦ First, it confuses “is” with an “ought” by reducing the latter to the former. Moral properties are normative properties. They carry a moral ought with them. If some act has

the property of rightness, then one ought to do that act. But natural properties like the ones listed do not carry normativeness; They just are.

- Second, every attempted reduction of a moral property to a natural one has failed because there are cases where an act is right even if it does not have the natural property, and an act can have the natural property and not be right. For example, suppose one reduces the moral property of rightness in “X is right,” to “X is what is approved by most people.” This reduction is inadequate. For one thing, the majority can be wrong. What most people approve of can be wrong. If most people approved of torturing babies, then according to this version of ethical naturalism, this act would be right. But even though it was approved by most people, it would still be wrong. On the other hand, some acts can be right, even if they are not approved (or even thought of) by most people.⁶¹⁵

Ethical nonnaturalism is the only view which holds that irreducible moral facts and properties really exist as part of the universe. In addition to natural properties, there are moral properties (rightness, goodness, worth) which persons and acts have and which moral statements ascribe to persons and acts. “X is good” ascribes an unanalyzable, irreducible moral property to X, just as just as “the apple is red” ascribes the natural property redness to the apple. Most Christian theists have been some form of ethical nonnaturalists since they hold that God himself has moral properties (goodness, holiness, etc.), persons made in his image have worth and dignity (as he does) and some acts have the property of moral rightness.⁶¹⁶

Critics of nonnaturalism often use what J.L. Mackie calls the “argument from queerness,” which has both a metaphysical and an epistemological component.⁶¹⁷ Mackie argues:

If there were objective values, then they would be entities of qualities or relations of a very strange sort, utterly different from anything else in the universe. Correspondingly, if we were aware of them, it would have to be by some special faculty of moral perception or intuition, utterly different from our ordinary ways of knowing everything else. Furthermore, Basil Mitchel shows the subtle danger of denying the existence of real, irreducible values and redefining them in the operational terms of science, in *Morality, Secular and Religious*.⁶¹⁸

Mackie is asserting that moral values are so odd that their existence would be strange and our ability to know them would be odd. By why should anyone agree with Mackie about this? If morals do exist, why would anyone expect them to be like other kinds of things? Mackie appears to be faulting moral values for not behaving like physical objects. But this is an absurd example of fault-finding. If moral values are not physical objects, then why should we expect them to be like physical objects? If Mackie is correct in his view, then a host of entities—numbers, persons, laws of logic, universals, sets, and other nonphysical entities—got by the boards because they are “queer.” Mackie’s objection is a mere assertion of bias in favor of naturalism.⁶¹⁹

These are the major options in metaethics. Different views about the meaning of life will entail different views about the meaning of moral statements and the existence and nature of moral values.

Reasons for Being Moral.

Why should I be moral? Let’s clarify.

First one can distinguish specific moral acts (an act of kindness, an act of self-sacrifice) from what philosophers call the moral point of view. Why should I adopt the moral point of view, is what is meant when I ask, “why should I be moral?” If one adopts the moral point of view, then one does the following:

1. He subscribes to normative judgments about actions, things (persons, the environment), and motives.
2. He is willing to universalize his judgments.
3. He seeks to form his moral views in a free, unbiased, enlightened way.
4. He seeks to promote the good.⁶²⁰

In other words, says, Moreland, if one adopts the moral point of view, one submits to and seeks to promote the dictates of normative, *universalizable* morality in a mature, unbiased, impartial way. One embraces the dictates of morality and seeks to live in light of the moral point of view.

Second, one can distinguish between motives and reasons for adopting the moral point of view.

- Regarding the former, Motives do not have to be rational factors. For example, one could say that he was motivated to adopt the moral point of view because it gave him approval with his parents and with society.
- Regarding reasons, the question is asking what rational justification can be given for adopting the moral point of view.⁶²¹

Third, there is a rational sense of using the word “should.” That is, what rational justification can be given to me as to why it would be reasonable for me to adopt the moral point of view rather than some other point of view (e.g., an egotistic self-interested point of view where I govern my life for my own best interests without regard for the moral point of view at all). As I seek to formulate a rational life plan for myself, a well-thought-out reasonable approach to the way I will live my life so as to be a rational person, why should the moral point of view be a part of that rational life plan?

In sum, according to Moreland, the question, “Why should I be moral?” is asking for the motives, but more importantly, the reasons why someone should adopt the moral point of view as a part of a rational plan of life. It is now time to consider four major options for the question of the meaning of life.

Nihilism and Naturalism.

Nihilism is the view that human existence is totally and irremediably meaningless and that nothing is of real value. Nihilism is a pessimistic philosophy of life and has been held by philosophers Friedrich Nietzsche and Albert Camus. According to nihilism, life is absurd. There is no purpose toward which the cosmos is moving, and human history has no goal or end. Human beings are not the favored creation of a loving God but are modified monkeys. Humans are the chance product of random mutations, natural selection and the struggle for survival. There is no life after death. There is no objective reason why suicide is not a more rational option than the desire to continue living.

Nihilists deny the existence of values. The theory of metaethics most consistent with nihilism would be private subjectivism. Values are mere expressions of individual likes and dislikes. According to nihilism, one is free to adopt a set of likes which bring personal satisfaction, such as the desire to be free and open to the present moment, and to obtain pleasure and satisfaction in life. Cultural relativism and noncognitivism would also be options for a nihilist.

Why should a nihilist be moral? As Moreland says, there is no rational justification for adopting the moral point of view. Private egoism (the view that I will do right if and only if it is in my own interests to do so) is the only motivation for being moral. If I find a moral life satisfying or if doing what society says is moral will help me enjoy the moment, then I will be motivated to be moral on that occasion. But if the demands of morality go against my own personal interests, then morality has no rationally justified demand on me.⁶²²

Nihilism and the Death of God.

Two main reasons are often given for adopting nihilism. **First**, some nihilists are that since God is dead (i.e., since the concept of God can no longer be

believed and no longer hold sway for modern man) then life is absurd, and values do not exist. If God is dead, do whatever you please.⁶²³

Two things can be said against this argument:

1. The concept of God is not vanishing from Western culture. In fact, it seems that the view which asserts that God is dead is itself dying. Christian theism has experienced a small revival in the last few decades in culture in general and in the academic community in particular.
2. It is false that values do not exist. I know with a high degree of certainty that torturing babies is wrong, that what the Nazis did to the Jews was wrong, and that one ought to treat persons with respect and dignity. These values exist and they can be used in an argument for the existence of God.⁶²⁴

A nihilist might object that one must have some criterion for asserting that you know that values exist.⁶²⁵ Nihilists assert that this question cannot be sufficiently answered, so when one asserts the truth of *p*, one has begged the question. But Roderick Chishold has pointed out that there are many things one can know without having a criterion for knowing them.⁶²⁶ If this were not the case, (that is, if there were not cases where I could simply know something without having a criterion for my knowledge), then every time I make a knowledge claim, I would have to supply criteria for that claim. But then I would be asserting that I know these criteria are true ones and before I could make that claim, I would need criteria for my first criteria, and so on to infinity. This would lead to a vicious infinite regress such that I could never know anything. But I do know some things (e.g., that I exist, that there is an external world, that other persons exist, and that values exist).⁶²⁷

One assumes that in the absence of criteria for borderline cases, one cannot have knowledge of clear cases. In general, criteria are not needed in clear cases of different areas of knowledge claims, but they are needed in borderline cases. And the criteria I use to judge the borderline cases are ones I surmise after I know the clear ones. I extend the criteria to the

borderline cases.⁶²⁸ In the area of values, I just know some values are true directly. I do not need general criteria for this knowledge before I can assert this fact, even though in some difficult moral cases (e.g., in bioethics), I may need criteria. If the nihilist tells me that the Nazis were not really wrong or that torturing babies is not really a violation of a true moral value, then he is simply mistaken. It is proper to save resources for future generations even though they do not yet exist, and if nihilism cannot justify that value, it is a false theory. So, it is rational to assert that values do exist despite what nihilism says.

Nihilism and Science.

A **second** reason for nihilism is the view that science has shown that life is meaningless. Moreland cites as an example of an inadequate attempt to wrestle with the problem of values within the constraints of science, Francis Crick's, *Life Itself, Its Origins and Nature*.⁶²⁹ Science allegedly shows that the cosmos is just a brute given, that final causes or movements toward goals are not a part of the natural world, that man is the product of blind evolutionary forces, that he is a biochemical animal who does not survive the grave and who must struggle for survival during his brief stay on a small planet in a spatially and temporally immense universe that is silent and uncaring. Some responses are in order.

1. The question of meaning and value are outside the limits of science. They are not scientific questions at all, although admittedly science can make a contribution to a discussion of broad questions of worldview. But the point is that science is just one voice in that discussion and not the only voice.
2. Second, it is a self-refuting claim to assert that philosophical questions are meaningless or false and only scientific claims are true and rational. For this is itself a philosophical claim *about* science, not a claim of science. For example, science is itself committed to epistemic values (one should prefer simple theories over less simple ones) and moral values (one should conduct and report

experiments honestly). So if values do not exist, how can science itself be justified?

3. Some moral value can be known with more certainty than some scientific theories. I know more certainly that torturing babies is wrong than I know that carbon atoms exist, at least as they are currently construed by chemistry and physics.⁶³⁰ We have known for thousands of years that torturing babies is wrong by the great majority of people. The concept of carbon atoms might change and be obsolete in another 50 years. Will the current concept of chemistry and physics fifty years from now will conceive of carbon atoms in a way that is close enough to current concepts to warrant the claim that the future picture will merely be a refinement of current conceptions? It is not unreasonable to say that future theories will replace current ones altogether. But could the same be said for the moral value of torturing babies?

Two Final Objections to Nihilism.

1. A nihilist cannot rationally recommend that others have a moral responsibility to be nihilists. At best, he can only say that if you find nihilism to be in your own best interests, then you may like to try nihilism. But a nihilist may not even wish to do this, for it may not be in his own best interests for everyone to adopt nihilism. A nihilist may have a more satisfying life if society in general adopts the moral point of view, since in that case, others may continue to treat *him* with respect when it is not in their best interests. A nihilist may be happiest if others do not adopt nihilism.
2. Nihilism is unlivable. A person's real views are often seen in his spontaneous reactions to life rather than in his stated views. One test for Truth is whether a view can consistently be lived out. It does not seem that nihilism can. Why should one rush to embrace nihilism when it is such a pessimistic, unlivable view?⁶³¹

Temporal Purpose and Optimistic Humanism.

Optimistic humanism holds much in common with nihilism. There is no reason why something rather than nothing exists, there is no purpose toward which the cosmos or human history is moving, humans are modified monkeys which have result from a blind process of chance mutations, and real, irreducible moral values do not exist.

But it is here that optimistic humanists say they part company with nihilists. They do not draw the pessimistic conclusion that life has no meaning. Suicide is not an option. Nihilism is essentially a life-denying enterprise whereas optimistic humanism is life-affirming enterprise. How does life have meaning? Because we create our own values and given life whatever meaning we choose to give it. A.J. Ayer put it this way:

But without the help of such a myth [religion] can life be seen as having any meaning? The simple answer is that it can have just as much meaning as one is able to put into it. There is indeed no ground for thinking that human life in general serves any ulterior purpose, but this is no bar to a man's finding satisfaction in many of the activities which make up his life, or to his attaching value to the ends which he pursues, including some that he himself will not live to see realized.⁶³²

Philosopher Paul Kurtz, one of the leading humanists in North America, says this:

The humanist maintains as his first principle that life is worth living, at least that it can be found to have worth... The universe is neutral, indifferent to man's existential yearnings. But we instinctively discover life, experience its throb, its excitement, its attraction. Life is here to be lived, enjoyed, suffered and endured.⁶³³

When optimistic humanists say that life has meaning they do not mean that objective values or an objective point to life exists. Rather, they mean that

life can be subjectively satisfying if we create values and live life for them. Why should I be moral? Because this will give me personal satisfaction to be moral.

It is not clear what it means to “create” values. What metaethical theory is involved here? Perhaps the optimistic humanist means that we should ask *as if* real, irreducible values exist. But this would merely be to live one’s life in a self-induced delusion on the humanist’s own views, so if this is what he means, then satisfaction comes from living a lie. Life would be a placebo effect.

It seems that the metaethical theory of optimistic humanism is either imperativism for Kurtz or private subjectivism or emotivism for Ayer, though an optimistic humanist could adopt cultural relativism or ethical naturalism (provided that one merely chose the relevant reduction term for a moral term—what people desire, what promotes survival—and did not argue that any particular reduction was the right one). Kurtz holds that values do not describe the world or offer truth but are mere regulational guides for life. They command by offering us imperatives. Ayer holds that morals either express our desires (emotivism) or describe our desires (private subjectivism).⁶³⁴

Three Objections to Optimistic Humanism.

Three objections are raised by Moreland against optimistic humanism.

1. There is no rational justification for choosing it over nihilism. As far as rationality is concerned, it has nothing to offer over nihilism. Therefore, optimistic humanism suffers from some of the same objections we raised against nihilism. Kurtz himself admits that the ultimate values of humanism are incapable of rational justification.
2. A specific area where optimistic humanism is especially vulnerable is in its metaethical views...When Kurtz tells us that we simply must chose guidelines in keeping with our natural instincts (which find satisfaction in the throb and excitement of life), and when Ayer

tells us that we can find satisfaction by attaching values to ends we desire to pursue, then it would seem that neither of them can offer a *rational* objection to Nazi treatment of the Jews in World War II.. After all, many of the Nazis found a lot of excitement in killing other humans, and this activity was obviously one to which they attached value. If an optimistic humanist responds by saying that we ought not to do this, then he is inconsistent. For now he is using an absolutist sense of ought. It even seems he uses an absolutist sense of ought if he tells us we have a moral obligation to be optimistic humanists. So, optimistic humanism either fails to provide the rationale for a moral objection to obviously immoral behavior, or if it does provide such a rationale, it becomes inconsistent.

3. Optimistic humanism really answers the question of the meaning of life in the negative, just as nihilism does. For the optimistic humanist, life has no objective value or purpose; it offers only subjective satisfaction. One should think long and hard before embracing such a horrible view. If there is a decent case that life has objective value and purpose, then such a case should be given as good a hearing as possible.⁶³⁵

Immanent Purpose and Transcendentalism.

The View.

This view is like the first two in some respects. The immanent purpose view holds that there is no reason why something rather than nothing exists, that there is no purpose for human history, that there is no life after death, and that humans are the result of a blind process of evolution. But while there may be no reasons to believe that there is any objective meaning or purpose outside human life which gives it meaning, this does not mean that life is not objectively meaningful. Life has objective meaning because objective values can be found within life.

According to the philosophy of immanent purpose, objective values exist and are part of the furniture of the universe. Values are there as brute givens. They are like Platonic forms (according to one reading of Plato)—they are ultimate entities which do not need to come from anywhere, including God, to exist. This could be understood along the lines of ethical naturalism. But it is more reasonable to see in this view of values a statement of ethical nonnaturalism. Values exist as irreducible, moral entities, and they attach to various things within life—the pursuit of truth, the intrinsic values of persons, and so on. As Karl Britton says, “The relationships between persons matter in themselves and many are of value in themselves.”⁶³⁶

Why should I be moral? My motives may be varied, but some of them can be the desire to love persons, to do right, and to be a virtuous person. It is simply morally right to be moral. And it is rational to adopt the moral point of view in my life plan because that point of view allows my life to have objective meaning. Life becomes objectively meaningful, as opposed to merely subjectively satisfying, when I pursue the realization of objective values which exist. When I seek to promote the good, moral values are realized within my life and my life becomes virtuous. This provides meaning in life, but this meaning does not come from God or some overarching meaning to the cosmos. Rather it comes from objective values which are immanently realized in life itself.⁶³⁷

In sum, the immanent purpose view seeks to give real, objective meaning to life, not mere subjective satisfaction, and it does so by postulating the existence of objective moral values. But the meaningfulness of life does not depend on the existence of God or of some external purpose outside human life. Values realized within human life can give it real meaning. This view is an improvement over the first two views, for it recognizes the existence of objective, irreducible moral values. It also recognizes that a major contributor to an objectively meaningful life is that one has a duty to live according to the dictates of the moral point of view. But despite its advantages, several objections can be raised against the immanent purpose

view. Taken together, these objections make it inadequate as an answer to the meaning of life.⁶³⁸

Objections to the Immanent Purpose View.

For one thing, the immanent purpose view cannot account for at least three features of moral life as we really experience it.

1. Moral responsibility seems to imply free will. It makes no sense to say one “ought” to do something if someone has no ability whatever to do it. But we argued in Chapter 3 that free will makes sense on the assumption of substance dualism, and substance dualism makes more sense if theism is true. So the immanent purpose view must either deny free will (which undercuts the possibility of morality) or postulate substance dualism as an unexpected fact about the world.
2. A feature of the moral life is the feeling of moral guilt or shame at moral failure. H.P. Owen in *The Moral Argument for Christian Theism* argues that it is often rational to have guilt feelings in the face of moral failure even when no human is present toward whom one feels shame, or even if someone is present, the sense of shame goes beyond what would be appropriate if only another human were involved. Owen goes on to argue that guilt *feelings* make sense if one feels shame in the presence of a Person. So, if the depth and presence of guilt feelings is to be rational, there must be a Person toward whom one feels moral shame.⁶³⁹
3. Concerning Moral Life, we often believe in retributive punishment, i.e., punishment of a crime which is not merely for the purpose of rehabilitation, protection of society, or deterrence. We sometimes feel that we should pay back evil for evil. As Joel Feinbert, H.L.A. Hart, and others point out, retributive punishment makes sense only if we think that in such cases, we are balancing the moral universe (i.e., setting the moral record straight by balancing the good and evil in the universe by paying the moral universe back for

the evil). But if such talk is to make sense when no clear victim of the crime is present, then there must be some being that we have in mind when we “pay the moral universe back.” Such talk makes sense if God exists, for he is always a victim of crime, and thus his justice deserves to be paid back in the presence of evil. But without God, there is often no victim to pay back, and in such cases, it is hard to make sense of retribution.⁶⁴⁰

These three features of the moral life—free will, guilt feelings, and retribution without a human victim—do not have an adequate explanation in the immanent purpose view, but they do in light of Christian theism.

Second, the existence of moral values as an ultimate, brute given in any impersonal universe is counterintuitive and puzzling. Dom Illyth Trethouwan in *Absolute Value* and Robert Adams in, “Moral Arguments for Theistic Belief,” in *Rationality and Religious Belief*, argue that we usually think of a command involving a commander. Propositions or principles usually come from or exist in minds, so absolute moral propositions—ones which existed before humans evolves (as they would in the immanent purpose view)—would seem to come from or exist in on objective Mind. So, either we take moral claims to be self-evident modes of impersonal existence or we explain them in terms of an ultimate Person. The latter makes their existence less puzzling than the former.⁶⁴¹

This point can be strengthened by Moreland’s example of a person I claim to see sitting in front of me. In the absence of defeaters of this claim, I am *prima facie* justified in making this claim. I am entitled to my knowledge claim unless there is some reason to suspect I am wrong. One source of defeaters of my knowledge claim is background information about the way the world is in general. For example, suppose I have background knowledge that when people think they see water on a highway when it is hot, they are really seeing heat waves—this experience is a mirage. If I saw water in front of my car while driving in the desert, I would not be justified in believing that water was really there.

Now consider the claim of the immanent purpose advocate who says that he knows moral values exist. If one also accepts current evolutionary theory (and denies the existence of God), then this would constitute background information that goes against the claim that moral values exist and can be known. According to that theory, the entire cosmos came from a blind explosion and life arose by random mutation and struggle for survival. Morality is merely the result of this struggle, for men discovered that life was safer when they banded together in communities.⁶⁴² For them, moral rules are not reflections of an objectively existing moral universe. They are social conventions grounded in the human instinct to survive. They have *evolutionary origin* and promote survival.⁶⁴³

One could argue that the evolutionary account of morality commits the genetic fallacy—it confuses how morality came about, with what morality is, and what justifies it. There is a point in the rejoinder. Taken by itself, the evolutionary account of morality is an example of the genetic fallacy. But there are some cases where the genetic fallacy is not really inappropriate. These are cases where the causal account of the origin of an idea serves to discredit that idea in some way. For example, in a trial, if the testimony of a witness comes from someone with bad motives, then one can rule out his testimony because of the source. His testimony could still be true, but it is unlikely. In the case of the mirage, one can rule out the veridicality of this experience by citing what caused it (hot air waves), even though it *could* still be an accurate experience.⁶⁴⁴

If evolutionary theory is all there is to the development of the cosmos from the big bang to man, then any view which postulates the brute existence of morals would seem to do so in an *ad hoc* way. The general background theory would count against the veridicality of the claim to know that morals exist, even though it would still be locally possible for them to exist. If theism is true, one's background theory explains the existence of human morality. However, if one denies God and accepts evolution, then it would seem more reasonable to accept an evolutionary, subjectivist view of morality. The existence of objective values would still be possible, but it would be

unlike and *ad hoc*, given this background theory. The claim to intuitively perceive such values would have such a background theory as a defeater. The background theory of theism supports such claims and makes them *prima facie* justified because it removes the background theory (atheistic evolution as the only account for human life and morality), which is the defeater. So objective morality is puzzling in the immanent purpose view.⁶⁴⁵

Third, even if we grant that moral values are an integral part of the universe, it is hard to see why they would have anything whatever to do with human beings.⁶⁴⁶ Given that moral values are brute entities which simply exist, why would those entities refer to a small, short-lived species on a little planet circling around a moderate star called the sun? What would cause the moral universe to overlap with the physical universe at the point where human life exists? Scientists John Barrow and Frank Tipler have argued that humans are just one stage in evolutionary development, which is moving toward higher and higher forms. All intermediate stages from amoebas to humans have only instrumental value insofar as they contribute to later stages. Earlier stages do *not* have intrinsic value. In fact, Barrow and Tipler argue that humans do not have intrinsic value, but the DNA program in humans is what has value. We exist to perfect that program for life that will exist in the future.⁶⁴⁷

It is easy to see why humans would have value if Christian theism is true, but it is hard to see in the immanent purpose view how morality ever came to be related to human beings at all. It was just a happy coincidence. In fact, evolution itself could be used to argue that the coincidence never occurred. We have only instrumental value, not intrinsic value.⁶⁴⁸

Fourth, it would seem inconsistent to allow that moral values can exist and be known and not allow that God exists and can be known. According to the immanent purpose view, some of the reasons for atheism count against their own moral views as well. They cut both ways. For example, it is sometimes said that science has explained features of the world and made God unnecessary, but the same could be said about evolutionary ethics. Sometimes it is claimed that God, heaven and the soul are unclear,

odd concepts which seem out of place in a scientific world where scientific concepts (allegedly) are clear, can be quantified, and so forth. But the same can be said about the existence and nature of moral values. Sometimes it is said that religious experience is not good evidence for God because the notion of spiritual intuition by which God is directly experienced or perceived is problematic. But spiritual intuition is similar to moral intuition. Most thinkers who hold to the immanent purpose view are intuitionists when it comes to moral values. They believe that a faculty of the self exists which enables one to be aware of moral values. I agree with this view, but the point is that ethical experience is very similar to religious experience, and one cannot have it both ways.⁶⁴⁹

Fifth, even if one grants that there is some sort of lateral law of objective morality which can be known by intuition—a view which seems to me to be true—one still cannot know much about morality from such cases of intuition, except broad, general ethical knowledge: “Pursue the good; treat humans with dignity; truth has value, and so forth.”⁶⁵⁰ But this is fine as far as it goes, but it does not go very far. The immanent purpose view cannot offer much help in trying to decide what specific values are true and worthwhile. This epistemological problem is solved in Christian theism by supplementing natural law or general revelation—broad ethical principles which exist and can be known by all men—with special revelation in the Bible. This is not to deny the reality of natural law. It is merely to point out its epistemological inadequacy, if it is unsupplemented by a special revelation.

Speaking of the problem of defining human rights—a task that the immanent purpose view sees as important—John Warwick Montgomery points out that natural law is not adequate by itself: “This is not in any sense to deny the reality of natural rights: it is only to say that their content is left epistemologically ill-defined by natural law thinking, and it is precisely their content that is essential to solve the human rights dilemma.”⁶⁵¹

Finally, the immanent purpose view does not really have an adequate answer for why I should be moral when doing so goes against my own interest.

Consider the problem of what are called supererogatory acts. These are acts of heroism which are not morally obligatory—no one would be immoral for failing to do them—but are morally praiseworthy if they are done—for example, falling on a grenade to save others.

Are such acts rational? Why is it ever rational to do such acts or why is it ever rational to do such acts or why is it ever rational to do a morally obligatory act (e.g., turning myself in for murder) if it is not in my own best interest to do so? The answer cannot merely be that such acts are right. The question is why I would be rational in such cases to do what is right. The only answer the immanent purpose view can give is that such acts give objective purpose to life. This may be a sufficient answer, but if such acts cause me to lose my life, it is hard to see how I can be rational in paying this price for a short period of objective meaning.⁶⁵²

According to Christian theism, God works all things together for those who love him. He guarantees the *summum bonum*, the harmony of happiness and the moral right. God has created human nature such that doing the right will bring happiness in the long run and, as Immanuel Kant argued, the presence of an afterlife and the omniscience and omnipotence of God provide a rational justification for acts which appear to pit happiness against duty. God wants us to do our duty in part because it is right. But such acts are not futile or irrational, because he will harmonize happiness and duty. The immanent purpose view has no such guarantee and is less satisfying because of it. And the immanent purpose view has difficulty justifying the rationality of acts where my own interests, even my own life, are in conflict with the dictates of duty. Christianity says that such cases are moral duties, and they can be rationally performed in part because God will reward us for them.⁶⁵³

These are some of the reasons why the immanent purpose view is an inadequate answer to the question of the meaning of life.

Cosmic Purpose and Christian Theism.

The View.

Moreland sums up this view in this precise way: the view that, according to Christian theism, the cosmos exists to glorify God and to promote the good of God's creatures, especially man. Human history has a purpose and can be seen as a struggle between good and evil, the kingdom of God and the kingdom of darkness, which moves toward the vindication of God, justice, righteousness, and the reward of those who have trusted Christ and lived in accord with the dictates of morality (Which come from God). Humans are creations of God, they have value in that they bear his image, they are objects of God's love and affection, and there is life after death. Values exist, they come from God, they can be known through intuition in the natural law and through inspection of the Holy Scriptures. My motive for being moral should be because I love God, I recognize him as my creator, I want to do what is right for its own sake, and I desire my own welfare in this life and in the life to come. I am rationally justified in adopting the moral point of view because it is morally right to do so and because God guarantees that he will reward and honor me if I obey him.⁶⁵⁴

Christian theism provides an answer to all the aspects of the questions of the meaning of life and it does so in such a way that it succeeds where the other views fail and provides more meaning than the others even when they succeed. As an example of this last point, one can grant that the immanent purpose view gives some sort of answer to the question of how life can be objectively meaningful by postulating the existence of values. But Christian theism does this as well, and it explains why those values exist and relate to man, it provides more reasons for pursuing them (e.g. it is rational to obey a kind Being {God}) and it offers more satisfaction in this life and the life to come.⁶⁵⁵

Objections to the Cosmic Purpose View.

Moreland considers objections raised against the answer of Christian theism:

The first objection is that God does not solve the problem of values; he only complicates the problem. As Plato pointed out in the *Euthyphro*, either something is moral because God commands it, or God commands it because it is moral. In the former case, God's commands are entirely arbitrary, his authority (the right to command compliance), is reduced to his power (the ability to command compliance) and God becomes a bare willer of morality. His nature has nothing to do with the moral law; morality comes from a *fiat* act of his will alone, and obeying God makes no more sense than obeying a cosmic Hitler. In the latter case, God's commands are based on some reason outside God for why some things are right, and one ought to be moral for those reasons and not because God commanded them.

Theists respond by splitting the horns of the dilemma. Morality does not come from an arbitrary act of God's will or from some reason or property outside of God. Morality is grounded in God's nature. Some things are right because a *good, loving God* commands them. So, God's laws are not arbitrary or based on something outside Himself. Rather, they are based on something inside his own being, namely, his own moral attributes.⁶⁵⁶

Second objection: The presence of God undercuts the meaning of life, for God dictates to man what will and will not count as meaningful and man cannot choose this for himself. Further, man becomes a mere tool in God's own plan to promote His ends.

Theists respond that this objection is a caricature of the biblical view. For one thing, God has given man freedom to choose what he will do with his life. Second, God's establishment of moral values is not "dictated" to man in any inappropriate way. The existence of such values is a necessary precondition of the very possibility of meaning. Further, the nature of moral values is not arbitrary; rather, they are grounded in human natures as a reflection of the divine nature itself. And God has made us such that these

values are not mere duties, but they also come from a kind, good God who has made us in such a way that we are protected, satisfied, and fulfilled best by doing what is right. Finally, man is not a mere tool in God's eyes. Man is a valuable end, according to the biblical view, and he is the object of a God who cares for him. True, God does wish to glorify himself, but the wisdom of God implies that he uses means appropriate to his ends and he chooses appropriate ends to begin with. So, he will not use men as mere instruments (unless they freely reject his love, and even then, they are not *mere* instruments, and he also has created man to enter the joy of God for man's own good. So this objection may count against some conceptions of God, but it is a misrepresentation of the Christian view.⁶⁵⁷

The third objection is that the existence of God and an afterlife does not give meaning to life. Bestowing eternity on an empty life does not make it meaningful. It may yield only an eternity of emptiness. It is also possible to conceive of the existence of God in such a way that life is still meaningless even God exists. If life is not meaningful and valuable in itself, then even God cannot bestow meaning on it in a non-arbitrary way. Two things can be said against this objection.

1. At best it shows only that God and an afterlife are not sufficient conditions of a meaningful life. It is possible to imagine an afterlife and a type of deity which do not give life meaning. But this does not show that God and an afterlife are not necessary conditions for an objectively meaningful life. Christian theism does not assert that any kind of God or any kind of afterlife gives meaning. Christian Theism asserts that the Christian God and the biblical worldview give meaning to life.
2. This objection is a form of the Euthyphro dilemma. It assumes that either God confers meaning and value on life arbitrarily or else he does so because it already has meaning and value independently of him. But Christian theism holds that human life has value and purpose because humans reflect God's very nature and that the purpose of human life and history also reflects God's nature. So

the value and purpose of life are neither arbitrary nor grounded in something outside God. They are grounded in God's nature.⁶⁵⁸

The final objection is that the Christian answer to why one should be moral, collapses into personal egoism. One should be moral because it is in one's own selfish interests to do so. One will get a payoff in the sky. But egoism is against the very nature of duty, which demands that we do what is right merely because it is right, and not because it is in our own interests to do so. Two things are stated by Moreland in response to this.

1. Personal rewards are not the only motive or rational justification for being moral according to Christian theism. Other motives or reasons are given as well: because I love God, because I think it is rational to obey a kind, benevolent Being who created me and knows what is right and what is best for me, because I think it is simply right to do one's moral duty. There is no reason to suppose that Christian theism cannot embrace all of these, and more, at the same time.
2. The desire for rewards is not grounded in a selfish, egoistic self-interest. According to Christian theism, I must recognize that I am a creature of value. I am an end in myself. Thus, I promote my own good, not in a selfish, greedy way where I attend to myself as a bundle of prudential desire I want to have satisfied. Rather, I attend to myself as an image-bearer. Just as the Christian view is against suicide (such acts fail to treat the subject himself as an end, but as a mere means to some other end, perhaps relief from pain), so the Christian view is against any act by which I dehumanize or trivialize my own existence, including acts where I choose to live for satisfactions which hurt me or minimize my humanness. But rewards from God are recognitions of my dignity. So I am justified in seeking them because in obtaining them, I affirm that I am a creature of value who is worthy of such rewards.

Given my nature as a human being, some desires are appropriate, and some are inappropriate. The former are natural desires grounded in my nature as a human being who reflects the image of God. The latter are grounded in my sinful tendencies to violate my humanness or the dictates of morality. The desire to be rewarded and recognized before a Being who is holy, kind, and good is not an inappropriate egoism. It is an appropriate expression of a need which God himself made me to have, and that need is grounded in my human nature which itself has value as it reflects God's image.⁶⁵⁹

We have investigated the different nuances advanced by Moreland concerning the question of the meaning of life and have explored his four answers to the question. The first two deny that life is objectively valuable and purposeful, and opt for a view of life which is personally satisfying. Nihilism takes a pessimistic attitude toward life; optimistic humanism takes a more life-affirming attitude. The last two views affirm the existence of objective values and purpose, but Christian theism was judged to be superior to the immanent purpose view. The former explains the existence and nature of meaning in life better than the latter, and Christian theism offers more meaning than does the immanent purpose view. Objections against Christian theism's solution to the meaning of life are not successful.⁶⁶⁰

In light of the options discussed in this chapter, Moreland's view is that would seem reasonable to end with a brief statement of a version of what is called Pascal's Wager.

If one chooses Christian theism, he has lost very little if he was wrong. In fact, it could even be argued that he gains more happiness in this life if he adopts this Christian worldview. If he is right and Christian theism is true, he gains a great deal.

On the other hand, if he chooses to deny Christian theism, there is a great deal to lose. If Christianity is true, one can lose his real meaning in life and suffer the fate of hell in the next life. If Christianity false, then he has not really lost that much anyway.

For Christianity offers virtually everything the other views offer and more. Assuming that Christianity is false, the only loser would be someone who adopted a version of the good life so out of step with the basic moral structure of Christianity that adopting that structure would be a painful adjustment. In that case, it would be a factual question as to whether such a change would produce more satisfaction in this life than would be the discarded version of the good life.⁶⁶¹

In sum, it is both rational and prudent to wager that Christian theism is the best answer to question about the meaning of life. This is as true now as it was in Blaise Pascal's day.

Modern Western society had generalized before the mid-19th century, a philosophy of man whereby he was seen as a rational animal and much more—that he was indeed made in the image and likeness of God, as per the first chapter of Genesis. However, the forces of elitist thinkers from that time, including of course Darwin, along with Nietzsche, Freud and Marx, reconstructed the image of man in a mechanistic way, seeing him as a complex biological organism. It does very little for an explanation of the humanness of the person, other than endow him with certain capacities for survival and reproduction. It does not speak convincingly of any purpose or meaning in life, or suffering and death, or love, or work, and so forth.⁶⁶² The secular humanist worldview, for which the final pillar of support is Neo-Darwinism, does not have an adequate definition for the need for a human conscience; yet conscience is basic to man's ability to live humanly and in community. By taking the strain of thought through Occam's nominalism, on through Locke's and Hobbes's rationalism, to the inevitable 19th century conclusions of "nature being all that exists," and that "God is Dead," persons have been philosophically dehumanized and depersonalized as *personae* and as individuals. That they are no longer seen by the intelligentsia as rational and free, can be illustrated by world events since that time.⁶⁶³

For millennia, Ethics was considered the pinnacle of philosophy and wisdom, even in pagan Rome and Greece. All of this has been challenged by the advance of post-Christian European and American intellectuals who profess to be non-denominational and non-sectarian, while at the same time advancing a worldview that is in fact a religion of atheism. It is not that they never make ethical statements, but they undercut their own arguments by arguing that “there is no such thing as objective truth,” that “there is no such thing as objective morality,” much less a divine “Great Lawgiver.” Truth is now what we decide it is; morality is now what we decide it is, and there are no objective standards that we can hold up our moral judgments against.

There has been a shift in worldviews and the dominant worldview in academia, Hollywood, the press and frequently the American Judiciary, is a Darwinian worldview.

“Darwinism functions as the scientific support of an over-arching naturalistic worldview, which is being promoted aggressively far beyond the bounds of science. Some even say that we are entering an age of universal Darwinism, when it will no longer be just a scientific theory but a comprehensive worldview. This worldview, as Francis Schaeffer said, is based on the idea that the final reality is impersonal matter or energy shaped into its current form by impersonal chance.”⁶⁶⁴

So it is, for example that Dawkins argues in *The Selfish Gene* that human behavior is ultimately programmed by “selfish genes.” The theme in this and similar books [e.g., *The Moral Animal*; and *Evolutionary Origins of Morality*] is to convince us that morality is a product of natural selection. Therefore, we learn to be kind and helpful only because that helps us survive and produce more offspring.”⁶⁶⁵ Nancy Pearcey gives these illustrations of Darwinian thought:

- ✦ The Basis of ethics does not live in God’s will, according to Wilson and Ruse. Ethics for them is an “illusion fobbed off on us by our genes to get us to cooperate. For unexplained reasons, humans simply “function better if they are deceived by their genes into

thinking that there is a disinterested objective morality binding upon them, which all should obey.”⁶⁶⁶

- ✦ If natural selection is the reason we're good, it's also the reason we're bad. So says a book titled *Demonic Males: Apes and the Origins of Human Violence*. The authors take aim at the biblical teaching of “original sin,” insisting that even the September 11 attacks had nothing to do with moral evil—they merely show that a “predisposition to violence” is written in the molecular chemistry of DNA.” Their genes made them do it?
- ✦ After September 11, the Science Desk of the *New York Times* speculated that the heroism of the rescue workers was a product of evolution—akin to the cooperative instincts of ants and bees. This article claimed that selfless behavior is a process of “kin selection” the idea that your genes are passed on not only to your own children but also to close relatives. As a result, you can enhance your own reproductive success by caring for a wider group of genetic relatives. A leading evolutionist, J.B.S. Haldane, once explained the calculus of kind selection by saying he was prepared to sacrifice his life for two brothers, or possibly eight cousins.⁶⁶⁷
- ✦ Parents can read *The Truth About Cinderella: A Darwinian View of Parental love*.⁶⁶⁸)
- ✦ In *Executive Instinct: Managing the Human Animal in the Information Age*, the author asks, “How do we manage people whose brains were hardwired in the Stone Age?”⁶⁶⁹
- ✦ In the book titled *The Natural History of Rape: Biological Bases of Sexual Coercion*, the university professor authors argued rape is not a pathology, biologically speaking. Instead, it is an evolutionary adaptation for maximizing reproductive success. For these professors, “Rape is a natural biological phenomenon that is a product of the human evolutionary heritage...[akin to] “the leopard’s spots and the giraffe’s elongated neck.”⁶⁷⁰ When later challenged by angry callers on National Public Radio, Randy Thornhill, one of the authors, insisted that “If evolution is true, then

every feature of every living thing, including human beings, has an underlying evolutionary background. That is not a debatable matter.”⁶⁷¹ That many of the victims of rape are too old or too young to bear children seems to be a nuance overlooked by these authors. However, as Pearcey points out, some of Thornhill’s critics were hamstrung by accepting the same evolutionary assumptions as the book... The critics were disarmed by their shared worldview.⁶⁷² When a leading feminist expert on rape challenged Thornhill’s judgment, he insulted her by saying she was starting to sound just like “the extreme religious right.” Says Pearcey, “No doubt she was insulted, but Thornhill was saying the evolution and evolutionary ethics are a package deal. If you accept the premise, then you must accept the conclusion. And if you don’t like it, you may as well join the ‘religious right’ and challenge evolution itself. It’s just as Schaeffer said: ‘all the dots connect back to your view of origins.’”⁶⁷³

- ✦ Biologist William Provine of Cornell University tells university students that the Darwinian revolution is still incomplete because we have not yet embraced all its moral and religious implications. “There is no ultimate foundation for ethics, no ultimate meaning in life, and no free will.”⁶⁷⁴
- ✦ A Princeton University professor, Peter Singer, published an article supporting sexual relations between humans and animals. The Article, titled “Heavy Petting,” teaches that in the west, we have a Judeo-Christian tradition that teaches that “humans alone are made in the image of God. “in Genesis, God gives humans dominion over the animals.” But evolution has thoroughly refuted the biblical account, Singer maintains: Evolution teaches us that “We are animals—and the result is that “sex across the species barrier ceases to be an offence to our status and dignity as human beings.”⁶⁷⁵ Pearcey says that this also trickled down into popular culture where they have a much greater impact on the public. For example there was a Broadway play in 2002, *The Goat; or Who is Sylvia?*,⁶⁷⁶ about a husband who tells his wife he has fallen in

love with the goat, Sylvia. Pearcey concludes, “A culture is driven by a kind of logic: it will eventually begin to express the logical consequence of the dominant worldview. If evolution is true—if there really is an unbroken continuity between humans and animals—then Singer is absolutely right about what he calls “sex across the species barrier. Once again, all the dots connect back to your view of origins”⁶⁷⁷

- ✦ Evolutionary psychologists are putting out books with all-encompassing titles like *The Evolution of Culture* and *Darwinizing Culture*, which contend that culture can no longer be separated from biology but is itself merely a product of evolutionary forces. Pearcey advises us, “Darwinists are connecting all the dots, tracing everything back to origins. And that’s why Christians had better connect the dots themselves. If they offer “universal Darwinism,” then we had better offer “Universal Design,” showing that design theory gives scientific support of an all-encompassing Christian worldview.”⁶⁷⁸
- ✦ Steven Pinker wrote an article a few years back about the Prom Mom who delivered her baby at a school dance and then dumped it the trash. Some other such cases of teen couples killing their newborn were reported on at the same time. Pinker advised that we must “understand” them because “infanticide has been practiced and accepted in most cultures throughout history.” Its sheer ubiquity implies that it must have been preserved by natural selection—which in turn means it must have an adaptive function. Says Pinker, “If a newborn is sickly, or if its survival is not promising, they may cut their losses and favor the healthiest in the litter or try again later on...[Thus] the emotional circuitry of mothers has evolved” to commit infanticide in certain situations. Because of natural selection, “a capacity for neonaticide is built into the biological design of our parental emotions.” In this same trend, an earlier symposium in 1982, studying infanticide among animals was reported in *Newsweek*, and this symposium was convened

with the hope that it might explain similar behavior in humans. Many of the participating scientists agreed that “infanticide can no longer be called ‘abnormal’. Instead, it is as normal as parent instincts, sex drives and self-defense,” and may even be a beneficial evolutionary adaptation.”⁶⁷⁹

At least some of this worldview with its appalling morality can fairly and directly be laid at the doorstep of Charles Darwin. What could he have foreseen? Perhaps not all of what has been going on in the past 150 years, but I would argue that a very good part of it can. For example, if we look at one aspect of the modern “culture of death,” from embryonic stem cell research that kills the embryos “in the name of science” for the good of humanity, all the way to euthanasia, we can identify one aspect, Infanticide, that Darwin himself commented on in *The Descent of Man*. Darwin argued here that the “murder of infants has prevailed on the largest scale throughout the world, and has met with no reproach... Infanticide, especially of females, has been thought to be good for the tribe.”⁶⁸⁰ In this case, and others, clearly Darwin had already understood where the logic of his theory led.

How much worse could it get? We have only to look at some of the major players of the 20th century and their admitted debt to Darwin.

Chapter 15:
***Applied Darwinism in the Philosophy
of Conscience***

In his appropriately titled book, *The Descent of Man*,⁶⁸¹ Darwin advanced this thesis[Q1]:

It has, I think, now been shewn that man and the higher animals, especially the Primates, have some few instincts in common. All have the same senses, intuitions, and sensations, —similar passions, affections and emotions, even the more complex ones, such as jealousy, suspicion, emulation, gratitude and magnanimity; they practice deceit and are revengeful; they are sometimes susceptible to ridicule, and even have a sense of humour; they feel wonder and curiosity; they possess the same faculties of imitation, attention, deliberation, choice, memory, imagination, the association of ideas, and reason, though in very different degrees. The individuals of the same species graduate in intellect from absolute imbecility to high excellence. They are also liable to insanity, through far less often than in the case of man.⁶⁸²

One argument advanced against this idea was that only man has the moral sense of conscience. Darwin set about explaining how to give a biological explanation for man's moral faculties in chapters 4 and 5 of *The Descent of Man*. He puts forth this hypothesis [Q3]:

Any animal whatever, endowed with well-marked social instincts, the parental and filial affections being here included, would inevitably acquire

a moral sense or conscience, as soon as its intellectual powers had become as well, or nearly as well developed, as in man.⁶⁸³

Darwin points out that man is a social animal: human beings live in a family, or group, and in a society; and this is biological fact, just like bees and ants live in colonies. Any social animal has social instincts which support their social life. These social instincts are innate or genetic propensities to “take pleasure in the society of its fellows, to feel a certain amount of sympathy with them, and to perform various services for them”⁶⁸⁴ These essential social instincts persist and work continually in the whole life of any individual. However, these instincts may work quite differently depending on what species that animal belongs to: in the case of bees and ants, social instincts may determine particular jobs and roles an individual must perform; but in a higher animal, social instincts may work as a mere tendency to prefer social life and to aid fellow members.⁶⁸⁵

These instincts are useful for these animals, and they have been acquired by natural selection. This is the beginning of the process by which the complex faculty of moral sense may be developed from the combinations of simpler faculties of social instincts and intelligence, hopefully by means of natural selection. However, if this assumption of “usefulness of social instincts” is granted, one must answer—useful to whom? To the group or to the individual?⁶⁸⁶

Darwin from there argues that there is an imaginary psychological process which might develop into something similar to a moral sense or moral feeling. Once a social animal has acquired high intelligence enabling it to remember past actions and motives, this increases the ability to sympathize, which is a social instinct. Sympathy is an ability to represent others’ feelings, as well as one’s own, within oneself; so that if this animal acquires better knowledge about others, the extent of sympathy will also be broadened.

However, Darwin still holds that more is needed than intelligence increasing sympathy as a development of the social instincts. He recognizes that on occasion the animal can give into temporarily stronger appetites or

motives. On some occasions, animals, including humans, have anti-social or selfish motives too, and higher intelligence can even serve to create more selfish motives.⁶⁸⁷

Persistence of the social instincts is the answer for Darwin. When social instincts are overcome by selfish motives, there is a disagreeable feeling that overcomes one. Because the social instincts are enduring, every recall the animal has of this event increases this disagreeable feeling. Therefore, the memory of these feelings associated with social instincts becomes dominant. Likewise, agreeable feelings are associated with agreeable feelings when the animal follows his social instincts. This becomes dominant as it is part of the animal's enduring social nature. This, for Darwin, is the beginning of the formation of moral feelings. The ability to experience these feelings is an essential part of what is "the moral sense."⁶⁸⁸

Social Norms, Sympathy and Habits.

Darwin goes on to explain that high intelligence would be accompanied by the ability to use some sort of language, and this would allow the animal to express its wishes or desires as a member of its community. At this point, their community can form their social norms concerning what they could do for the common good. Interestingly, because they are mutual agreements, they are conventional and are therefore not genetically determined. Still, "... however great weight we may attribute to public opinion, our regard for the approbation and disapprobation of our fellows depends on sympathy which...forms an essential part of the social instinct and is indeed its foundationstone."⁶⁸⁹

Therefore, for Darwin, the underlying sympathetic ability is instinctive or genetically determined. This is a product of evolution. Darwin states by way of explanation, "sympathy is (more) excited, in an immeasurably stronger degree, by a beloved, than by an indifferent person."⁶⁹⁰ Darwin saw this as a basis for ethics, although he was not clear about the biological mechanism which produces such tendencies.

This constitutes the main part of Darwin's moral sense of conscience[Q4]:

At the moment of action, man will no doubt be apt to follow the strongest impulse; and though this may occasionally prompt him to the noblest deeds, it will more commonly lead him to gratify his own desires at the expense of other men. But after their gratification when past and weaker impressions are judged by the ever-enduring social instinct, and by his deep regard for the good opinion of his fellows, retributions will surely come. He will then feel remorse, repentance, regret, or shame; ...He will consequently resolve more or less firmly to act differently for the future; and this is conscience; for conscience looks backwards and serves as a guide for the future.⁶⁹¹

Darwin argued that his statements are based upon his observations of undeveloped people, who seem only observant of strictly social virtues but deficient in terms of personal development virtues. Darwin's view is that the development of self-regarding virtues depends upon the improvement of intelligence and knowledge, as well as personal habits. Virtues must be acquired as a habit and most habits may originate from individuals and spread within, or even beyond, their groups. At this point, "culture" is evolving, while positive habits reinforce social instincts. The biological process thus merges into a cultural process.⁶⁹²

This is all being processed due to natural selection because intelligence is useful to an individual animal. The social instinct includes sympathy, which played a crucial role in generating the moral sense of conscience. Altruistic or moral tendencies originate from sympathy. Darwin attributes this to natural selection. While a species of animals demonstrates variations that are more advantageous than others in the struggle for existence, the individuals with these variations will gradually increase within the species and they will eventually become dominant in number. Therefore natural selection works in terms of the hereditary characteristics of individuals, and these are of use primarily to individuals in the group.

In terms of the society, Darwin argues that the moral faculties useful to a group have been developed by the competition among such tribes or groups in their struggle for existence.

When two tribes of primeval man, living in the same country, came into competition, if...the one tribe included a great number of courageous, sympathetic and faithful members who were always ready to warn each other of danger, to aid and defend each other, this tribe would succeed better and conquer the other.

...But it may be asked how, within the limits of the same tribe did a large number of members first become endowed with these social and moral qualities, and how was the standard of excellence raised? It is extremely doubtful whether the offspring of the more sympathetic and benevolent parents, or of those who were the most faithful to their comrades, would be reared in greater numbers than the children of selfish and treacherous parents belonging to the same tribe...

Therefore, it hardly seems probable that the number of men gifted with such virtues, or that the standard of their excellence, could be increased through natural selection; that is, by the survival of the fittest; for we are not here speaking of one tribe being victorious over another.⁶⁹³

Here, according to Uchii, Darwin's program for explaining the genesis and development of morality by means of natural selection seems to have failed at a crucial point... He tried to appeal to what we now call 'group selection' (i.e., an advantageous group survives, and individuals of that group indirectly change), but he admitted that this group selection is not likely to be supported by natural selection working on individuals."

But Darwin tried to solve this difficulty by what is now known as "kin selection." Just before discussing the development of moral faculties, Darwin argues for the development of intelligence by natural selection [Q7]:

If such men [i.e., intelligent men] left children to inherit their mental superiority, the chance of the birth of still more ingenious members would

be somewhat better, ...Even if they left no children, the tribe would still include their blood relations; and it has been ascertained by agriculturalists that, by preserving and breeding from the family of an animal, which when slaughtered was found to be valuable, the desired character had been obtained.⁶⁹⁴

For Uchii, the Darwinian view suggests

A certain approach to ethics, say the Reductionist approach (I borrow this word from Parfit, who uses it in the context of the problem of personal identity; and Daniel Dennett also defends this approach, with respect to cognitive science, in his *Darwin's Dangerous Idea*, 1995). This is the view that all ethical concepts can be analyzed into more basic concepts which are not themselves ethical. In other words, it is the view that concepts such as "conscience" or "moral goodness" will be well understood only in terms of concrete workings of human faculties and feelings, without postulating any peculiar realm of moral value. *This is exactly what Darwin has done in his theory of the moral sense; conscience or moral sense is so called because of its workings in a certain way, not because it is related to some irreducible moral value.* Since this position is very likely to be misunderstood, I will hasten to add a few explanatory remarks.

By reductionism, I do not mean that ethical or evaluative concepts can be reduced to factual or descriptive concepts; this is what Moore called "naturalism" and I do not support it. In order to be a reductionist in my sense, one need not be a naturalist.

All one has to admit as an ethical reductionist is that morality can be related to a bunch of natural or conventional elements and their workings. Morality needs intelligence, but this intelligence does not come from any peculiar realm, divine or angelic. Morality needs some instinctive factors, but one can find similar factors in other animals. And again, moral feelings and preferences have an origin in a non-moral animal world, and you don't have to suppose any peculiar "respect for the divine moral law." All the factors

necessary for full understanding of morality can be found in this world and the workings of its constituent parts.⁶⁹⁵

We will, in the following chapter, have a careful look at where this materialistic or reductionist explanation of conscience and morality have gotten society in the past century. I will like, however, [as though putting brackets on either side of Darwinian considerations of ethics and conscience] to compare the Darwinian concept of conscience with that of another great 20th century thinker who, like Weaver whom I quoted at the beginning of the 14th chapter, had the vantage point of one whose thought was crystallized in surveying the ruins of post-World War II Europe. Unlike Weaver, however, Dr. Viktor E. Frankl, M.D., Ph.D., [1905-1997] actually lived through the Second World War in Europe and was a survivor of the death camps. His young bride, his brother and parents did not survive.

Out of that crucible, Frankl, a neurologist and psychiatrist and founder of the Third Viennese School of Psychiatry, developed his thought to counter the deficiencies established by the naturalistic philosophy of science and ethics which was implemented by Nazi (National Socialist) Germany and its socialist sisters throughout the other socialist countries of the world. It is interesting that Dr. Frankl's most popular book, *Man's Search for Meaning*, was written after the war in a period of nine days and has sold over 9 million copies. He did this after he finally completed an earlier beloved work, the manuscript of which had been taken from him as he entered the death camp years earlier. Frankl also authored some 30 other scholarly books translated into 27 languages. He achieved this in addition to his senior clinical and administrative responsibilities as the Director of the Vienna Neurological Polyclinic.

Dr. Frankl's theory and therapy were not developed in a sailing voyage or country cottage: rather they were constructed first in the abstract during his formal studies in medicine, psychiatry, and philosophy, and later in practice in his work (while still in medical school) setting up counseling centers for troubled adolescents; then as a doctor in Vienna, in saving the mentally

ill from Nazi extermination; and most poignantly, in caring for his fellow inmates of the death camps.

As a young student, Dr. Frankl had first met with Freud. He came to like more, however, Alfred Adler's theory. In any case, Frankl was already moving beyond both their contributions. In 1925, he published an article "Psychotherapy and *Weltanschauung* [Worldview]" in Adler's *International Journal of Individual Psychology*. By the next year, Frankl used the term *logotherapy* for the first time in a public lecture and continued thereafter to refine his distinct variety of psychiatry.

Logotherapy.

This form of therapy is taken from the Greek word *Logos* which has several weighty meanings, including study, word, spirit, God, or meaning. Most frequently, Frankl focuses on the word *meaning*, although the others are by no means excluded. Comparing his thought with those of Freud and Adler, Frankl in brief stated that while Freud essentially postulated a *will to pleasure* as the root of all human motivation; and Adler a *will to power*; Logotherapy postulates a *will to meaning*.

In traditional psychology, one focuses on "psychodynamics," which sees people as trying to reduce psychological tension. Frankl affirms that there is a need to focus on "noöynamics," [*noös* is, of course, from the Greek word for "mind" or "spirit"] wherein tension is needed for health, at least when it comes to meaning. Frankl knows that people need and want the tension involved in striving for some worthy goal.⁶⁹⁶

From early on, Frankl was chiefly concerned with the false teaching of reductionism.

Then, as now, medical schools emphasized the idea that all things come down to physiology. Psychology, too, promoted reductionism: mind could be best understood as a "side effect" of brain mechanisms. The spiritual aspect of human life was (and is) hardly considered worth mentioning at all! Frankl believed that entire generations of doctors and scientists were

being indoctrinated into what could only lead to a certain cynicism in the study of human existence.

He set it as his goal to balance the physiological view with a spiritual perspective and saw this as a significant step towards developing more effective treatment. As he said, "...the de-neuroticization of humanity requires a re-humanization of psychotherapy."⁶⁹⁷

Frankl on Conscience.

Frankl holds that the concept of conscience is of major importance. He views conscience as a sort of unconscious spirituality, different from the instinctual unconscious that Freud and others emphasize. Frankl holds that conscience is not just one factor among many; it is at the core of our being and the source of our personal integrity. "...Being human is being responsible—existentially responsible, responsible for one's own existence. Furthermore, conscience is intuitive and highly personalized, referring to a real person in a real situation, and cannot be reduced to simple "universal laws." It must be lived.

Frankl refers to consciousness as a "pre-reflective ontological self-understanding," or "the wisdom of the heart," "more sensitive than reason can ever be sensible."⁶⁹⁸ Conscience "sniffs out" that which gives our lives meaning.

Like Eric Fromm, Frankl notes that animals have instincts to guide them. In traditional societies we have done rather well in replacing instincts with our social traditions, as was noted in Weaver's statements at the beginning of the previous chapter, Frankl states that "...today we hardly even have that. Most attempt to find guidance in conformity and conventionality, but it becomes increasingly difficult to avoid facing the fact that we now have the freedom and the responsibility to make our own choices in life, to find our own meaning. However, 'meaning must be found and cannot be given.'"⁶⁹⁹ He holds that meaning is like laughter. "You cannot force someone to laugh;

you must tell him a joke! The same applies to faith, hope and love—they cannot be brought forth by an act of will, our own or someone else's.”⁷⁰⁰

Meaning is something to discover rather than to invent. It has a reality of its own, independent of our minds. It is objectively real and not something we imagine. It is primarily a perceptual phenomenon.⁷⁰¹

Tradition and traditional values are quickly disappearing from many people's lives. But, while that is difficult for us, it need not lead us into despair: Meaning is not tied to society's values. Certainly, each society attempts to summarize meaningfulness in its codes of conduct, but ultimately, meanings are unique to each individual.

“...Man must be equipped with the capacity to listen to and obey the ten thousand demands and commandments hidden in the ten thousand situations with which life is confronting him. And it is our job as physicians, therapists and educators to assist people in developing their individual consciences and finding and fulfilling their unique meanings.”⁷⁰²

As an anecdote, Frankl writes in one of his books about a client who came to see him after having been disillusioned by a Freudian psychiatrist. The man was suffering from an advanced, terminal case of cancer. In fact, his body was riddled with cancer. The Freudian tried to help this client by explaining that his psychological tension was due to fear of castration! It was at that point that the client decided he needed to visit a psychiatrist who could more adequately help him find meaning and dignity even in his present suffering and preparing for death.⁷⁰³

With regard to the practice of finding meaning, and living conscientiously, Frankl advances three approaches.

- ✦ Through **experiential values**, that is, by experiencing something—or someone—we value. This can include Maslow's peak experiences and esthetic experiences, such as appreciating great art or natural wonders. The most important example of experiential values is the love we have for one another. Through love, we can enable our

beloved to develop meaning and, by doing so, we develop meaning ourselves. “Love is the ultimate and highest goal to which man can aspire.”⁷⁰⁴ Love, for Frankl is the recognition of the uniqueness of the other person, with an intuitive understanding of their full potential as human beings. Frankl believes that true sexual intimate love is only possible within monogamous relationships. As long as partners are interchangeable, they remain objects, or tools to be used. Frankl uses the word “responsibility” with an important qualifier: we must be responsible *to* other persons, but not *for* other persons.

- ✦ One discovers meaning through **creative values**, by actually “doing a deed.” One provides oneself with meaning by becoming involved in one’s projects and, more importantly, in the “project” of one’s own life. Frankl views creativity (as well as love) as a function of the spiritual unconscious, that is, the conscience.
- ✦ One discovers meaning also through **attitudinal values**. These include such virtues as compassion, bravery, a good sense of humor, and even by way of suffering. With meaning, suffering can be endured with dignity, and grief is the price we pay for love. He also advises us to help the seriously ill to retain their dignity. We haven’t to make them feel ashamed of their pain and unhappiness. Frankl teaches that “...everything can be taken from a man but one thing: the last of the human freedoms—to choose one’s attitude in any given set of circumstances, to choose one’s own way.”⁷⁰⁵

Supra-meaning.

These experiential, creative and attitudinal values are merely surface manifestations of something more fundamental called supra-meaning, or transcendence. This means that there is an ultimate meaning in life that is not dependent on others, on our projects, or even our dignity. This has to do with God and spiritual meaning. In this sense, Frankl’s existentialism is quite different from that of Jean Paul Sartre and other existentialists. Most of them held that life is ultimately meaningless, and we have to have

the courage to face and endure that meaninglessness. Frankl says instead that we must learn to endure our inability to fully comprehend ultimate *meaningfulness* because “Logos is deeper than logic.”⁷⁰⁶

His experiences in the death camps led him to these conclusions. “In spite of all the enforced physical and mental primitiveness of life in a concentration camp, it was possible for spiritual life to deepen ... They were able to retreat from their terrible surroundings to a life of inner riches and spiritual freedom.”⁷⁰⁷ This is quite a contrast with Sigmund Freud’s perspective, as expressed in *The Future of an Illusion*, (quoted in 1975, p.69) “Religion is the universal compulsive neurosis of mankind...”

For Frankl, God is the God of the inner human being, a God of the heart. Even an atheist or agnostic may accept the idea of transcendence without even making use of the word God:

This unconscious religiousness, revealed by our phenomenological analysis, is to be understood as a latent relation to transcendence inherent in man. If one prefers, he might conceive of this relation in terms of a relationship between the immanent self and a transcendent Thou. However one wishes to formulate it, we are confronted with what I should like to term “the transcendent unconscious.” This concept means no more or less than that man has always stood in an intentional relationship to transcendence, even if only on an unconscious level. If one calls the intentional referent of such an unconscious relation “God,” it is apt to speak of an “unconscious God.”⁷⁰⁸

God, as spoken about by Frankl, is both transcendent and yet profoundly personal and present to us in a profoundly personal way. Therefore, Frankl holds that, as God is there within each one of us, we have only to acknowledge that presence in order to find suprameaning. On the other hand, turning away from God is the ultimate source of all the ills: “Once the angel in us is repressed, he turns into a demon.”⁷⁰⁹

As is true in the case of so many other aspects of life, an evolutionary explanation of conscience, as of ethics, is sheer conjecture and is woefully inadequate. Dr. Pierre P. Grassé, the former president of the French

Academy of Science and editor of the 28 volume *Traité de Zoologie*, has concluded this about evolution:

Their success among certain biologists, philosophers and sociologists notwithstanding, the explanatory doctrines of biological evolution do not stand up to an objective, in-depth criticism. They prove to be either in conflict with reality or else incapable of solving the major problems involved.⁷¹⁰

As I read more and more about evolution and evolutionary thinkers, particularly in areas of ethics and conscience, it comes clearer to me that they have started out with a very restrictive first premise and, rather than admitting their own self-imposed limitations and inadequacies, they attempt to “superimpose” rational content available from other (Judeo-Christian) sources onto their suppositions.

To me, this is analogous, for example, to Eric Fromm, who did a masterful treatise on communism in his book *Escape From Freedom*,⁷¹¹ only to later try to chat up “Socialist Humanism,” in the tragic aftermath of the Soviets’ invasion of Prague in 1968. Apparently, he wanted to make the best of a very bad deal in view of the lasting power of the Soviets.⁷¹²

Not many years later in 1975, however, even the French intellectuals who lead the 1968 French university student revolution had forsaken Socialism as “the inevitable road to the concentration camps.” This helped lead to the decline of the Soviet Empire. Similarly, I once met a French soldier in Africa who, after a rather dissipated and disoriented youth, gave his life to God as a Muslim. This brought him great order and peace for a season; however, he soon found himself trying to find in Islam and in Muslims some of the moral philosophy that he had only passively known about Christianity from his having lived in Europe. His Muslim guides were rather appalled at his expectations. This led him to enquire for the first time into Christianity, which he found much more intellectually satisfying and then he became for the first time a Christian. He recognized that he had been wishfully superimposing on Islam what was not really there.

Our Western society has so very much to offer in academic freedom, in science and philosophy, in law and Government and social institutions, precisely due to the worldview provided by Biblical thinking. Yet the modern dogmatic orthodoxy is one of still championing mindless, meaningless, purposeless and godless evolution. Our next chapter will deal with some of the historic applications of Darwinism in governments and nations. This is for the purpose of showing where this evolutionary dogmatism has gotten us.

Chapter 16:
***Darwin's Contribution to the Philosophy of
Racial Conflict***

Darwin.

Modern Western secular humanistic thought has been heavily influenced by the 19th century teachings of Darwin, Nietzsche, Marx and Freud and their writings over the period 1850 to 1920. While they all differ in various ways, they all had in common their “reductionism,” and claimed that realities that had long been thought of as belonging to a “higher” realm of existence could, and should, be explained by the lower.

Darwin, while not the originator of evolutionary thinking, became the most influential thinker in this class. He of course insisted that humanity must be understood biologically; thus, we are an extension of the anthropoids who fortunately evolved the skills enabling us humans to dominate nature. Although Darwin started out as a Christian, and even got a degree in Theology, he decided by the time of his graduation from Cambridge that he would not seek to be a theologian or clergyman but would instead become a naturalist—and eventually an atheist who believed that his findings had eliminated the possibility of a true spiritual nature of humans. He was one of an important group of 19th century thinkers and writers who espoused—and even advanced—the theory of “Monism,” (as opposed to “Dualism,”) which holds that all reality consists only of matter. This theory of course is atheistic, going even beyond the previously held doctrine of some 18th

century intellectuals known as “Deism.” Darwin’s theory is a “leap of faith” in materialistic philosophy, which is a greater leap of faith than that taken by believers in God.

One of Darwin’s basic premises is that the development of living things depends on the struggle for survival, and that the strong will win the struggle, while the weak are consigned to the dustbins of history. The strong always overcome the weak and this is the basis for all real development in nature. This is exemplified by the subtitle Darwin gave to his book that catapulted him to international fame: *The Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*.⁷¹³ This subtitle is unfortunately often overlooked but deserves our serious and critical attention.

Darwin held that the struggle for survival also applied between human races. “Favored Races” were, for Darwin, certain white Europeans. During his lifetime, one spoke of the British race, the Latin, particularly the French race, the Irish race, etc. Of course, Africans, Asians, Pacific Islanders, Australian Aborigines or South Americans were not considered by him to be favored races in this struggle for survival. He even suggested that they should soon lose this struggle for survival entirely and thus disappear.

At some future period, not very distant as measured by centuries, the favoured races of man will almost certainly exterminate the savage races throughout the world. At the same time the anthropomorphous apes...will no doubt be eliminated. The break between man and his nearest allies will then be wider, for it will intervene between man in a more civilised state, as we may hope, even between the Caucasian, as some ape as low as a baboon, instead of as now between the Negro or Australian and the gorilla.⁷¹⁴

Harun Yahya points out, with support from a UNESCO report, that “Darwin’s theory of the survival of the fittest...was warmly welcomed by the social scientists of the day. They believed mankind had achieved various levels of evolution culminating in the white man’s civilization. By

the second half of the nineteenth century, racism was accepted as fact by the vast majority of Western scientists."⁷¹⁵

A source of inspiration for Darwin was another British intellectual, the economist Thomas Malthus who authored in 1798 *An Essay on the Principle of Population*.⁷¹⁶ In view of his observation that populations were increasing rapidly, it was practically inevitable that population growth had to be controlled by disasters such as war, famine and disease. According to his views, some people must die for others to live, and thus human existence came to require "permanent war." So important were Malthus' views that:

In the opening half of the nineteenth century, throughout Europe, members of the ruling classes gathered to discuss the newly discovered "population problem" and to devise ways of implementing the Malthusian mandate, to increase the mortality rate of the poor. "Instead of recommending cleanliness to the poor, we should encourage contrary habits. In our towns we should make the streets narrower, crowd more people into the houses, and court the return of the plague. In the country we should build our villages near stagnant pools, and particularly encourage settlements in all marshy and unwholesome situations..."⁷¹⁷

According to Robert E. D. Clark, "Darwin often said quite plainly that it was wrong to ameliorate the conditions of the poor, since to do so would hinder the evolutionary struggle for existence."⁷¹⁸

To make room for "the right people," those who lost in this struggle for survival needed to be eliminated. Therefore the "oppression of the poor" policy was implemented. Children from the age of eight or nine were made to work sixteen hours daily in coal mines in terrible conditions. As a result, thousands died in this terrible way. Darwin was influenced by these ruthless ideas. He integrated Malthus' ideas in his synthesis concerning the conflict of all nature and claimed that the strongest and fittest had to be victorious in this war for existence. Darwin saw this as an immutable law of nature.⁷¹⁹

Peter Kropokin states the following criticism of Darwin's remarks in the *Descent of Man* (1871) about the "alleged inconveniences of maintaining what Darwin called the 'weak in mind and body' in civilized societies. Darwin seemed to think advanced societies were burdened with too many 'unfit individuals.'"⁷²⁰ By espousing Darwin's materialistic explanation of life and society, his followers were able to discard religious beliefs and values that could mitigate the ruthlessness of the "struggle for survival."⁷²¹ This "new Morality" opened the door for "struggles for survival" in terms of militarism and cultural imperialism.⁷²²

Darwin's evolutionary thought would have an even greater impact on the world than perhaps even he foresaw, although a man of his high intelligence certainly foresaw some of the serious implications. From the biological and racial implications of his works, it was predictable that Darwinism would be extended to social phenomena. Webster's Dictionary says of Social Darwinism:

It is an extension of Darwinism to social phenomena; specifically, a theory in sociology: sociocultural advance is the product of intergroup conflict and competition and the socially elite classes (as those possessing wealth and power) possess biological superiority in the struggle for existence. Social Darwin has two basic components:

1. Society is subject to natural selection. Therefore, there is a hierarchy according to power and wealth. Since natural selection acts upon genetic factors, the poor must be genetically inferior.
2. The most biologically fit races will be dominant over the weaker races. Through competition and war, humanity will advance.⁷²³

Some would argue that "Social Darwinism" is a distortion of Darwin's thought. However, Adrian Desmond and James Moore take issue with that view:

"Social Darwinism" is often taken to be something extraneous (to Darwin's theory), an ugly concretion added to the pure

Darwinian corpus after the event, tarnishing Darwin's image. But his notebooks make plain that competition, free trade, imperialism, racial extermination and sexual inequality were written into the equation from the start—Darwinism was always intended to explain society.⁷²⁴

Darwin was a racist. In *The Descent of Man*, Darwin proposed that ...

Certain races of human beings were actually sub-species, that a race war among mankind's different races, with the extermination of one race and the survival of another, would bring beneficial results in evolutionary terms, and he did explicitly state that black people were intermediate on the evolutionary ladder between apes and white people. He also wrote that it was his hope that, in the near future, blacks, aborigines and the African gorillas would become extinct, thus enhancing the evolutionary potential of the Caucasian race.⁷²⁵

Darwin began the first Chapter of his *Descent of Man* by posing this interesting question: "He who wishes to decide whether man is the modified descendant of some pre-existing form, would probably first enquire whether man varies, however slightly, in bodily structure and in mental faculties; and if so, whether the variations are transmitted to his offspring in accordance with the laws which prevail with the lower animals."⁷²⁶ Thus Darwin is asking whether the same law or laws that govern the evolution of what he refers to as the lower animals also govern in the affairs of man as well. What law could he be referring to? To find this out, we must go back to his *Origin* where, in the final paragraph of his chapter on Instinct, he wrote:

...To my imagination, it is far more satisfactory to look at such instincts as the young cuckoo ejecting its foster-brothers, ants making slaves, the larvae of *Ichneumonidae* feeding within the live bodies of caterpillars, not as specially endowed or created instincts, but as small consequences of one general law leading to

the advancement of all organic beings—namely, multiply, vary, let the strongest live and the weakest die.⁷²⁷

Thus, concludes Fouad, Darwin is asking at the beginning of his *Descent* if this law of his leading to the advancement of all organic beings, “multiply, vary, let the strongest live and the weakest die,” also applies to the race of humankind as well.⁷²⁸

[Darwin] goes on to ask in his *Descent* if the races of man actually differ enough to be divided up into what he later refers to as sub-species of man: “It might also naturally be enquired whether man, like so many other animals, has given rise to varieties and sub-races, differing but slightly from each other, or to races differing so much that they must be classed as doubtful species?”⁷²⁹

Finally, again on the very first page of his *Descent of Man*, for any reader to see, he poses the genocidal question as to whether or not a race war might produce “beneficial” results for mankind, with one race of man surviving and another race being exterminated:

The enquirer would next come to the important point, whether man tends to increase at so rapid a rate, as to lead to occasional severe struggles for existence; and consequently to beneficial variation, whether in body or mind, being preserved, and injurious ones eliminated. Do the races or species of men, whichever term may be applied, encroach on and replace one another, so that some finally become extinct?

We shall see that all these questions, as indeed is obvious in respect to most of them, must be answered in the affirmative, in the same manner as with the lower animals.⁷³⁰

Further on in his *Descent*, Darwin elaborates on this theme describing his dream of a future for mankind when the black races of man, as well as the mountain gorilla of Africa, will hopefully become extinct, thus enhancing

the chances for the evolutionary advancement of the more “civilized” races of man:

At some future period, not very distant as measured by centuries, the civilized races of man will almost certainly exterminate and replace the savage races throughout the world. At the same time, the anthropomorphous apes...will no doubt be exterminated. The break between man and his nearest allies will then be wider, for it will intervene between man in a more civilized state, *as we might hope*, even than the Caucasian, and some ape as low as a baboon, instead of as now between the Negro or Australian and the gorilla.⁷³¹

Fouad points out that Darwin proposed here in horrifying and explicit language that black Africans and Australian aborigines occupied a sub-species position between white Europeans and baboons! He not only stated this as his belief, but proposed that, in the near future, “as we may hope,” according to his evolutionary theory, these “sub-races” of man will eventually be exterminated in a struggle for survival, along with the endangered mountain gorilla of Africa! This type of statement makes the term “ethnic cleansing” seem mild by comparison.⁷³²

As will be discussed later in the next chapter, social Darwinism soon evolved into something known as *scientific* Socialism, with horrifying outcomes.⁷³³

Just seventeen days after *Origin* went on sale in Britain, the German geologist, Heinrich Bronn was already planning a German translation. Bronn added a chapter, identifying the religious problems created by Darwin's theory. He argued that unless it can be proved that life can comfrom non-life, “readers must consider descent with modification an unproven suggestion.”⁷³⁴ However, Darwin was displeased with this free translation that was met in 1860 with mixed reviews. He was more pleased with an 1867 translation done by Professor Julius Victor Carus, who worked closely with Darwin in translating the fourth edition.⁷³⁵ As Tom De Rosa reports, *Origin* entered German culture when the anti-Christian ideas of Ludwig Feuerbach were

already widely disseminated among Germans. Feuerbach helped prepare the German mind for evolution. Although he did not win broad public support, his views were influential among the elite. Darwin's work was seen as more compelling because he had employed concrete observations from nature.⁷³⁶

Dr. Ernst Haeckel.

The founder of the Monist League was Dr. Ernst Haeckel, who was "... the most vigorous promoter of both biological Darwinism and social Darwinism in continental Europe in the late-nineteenth and early twentieth centuries."⁷³⁷ We have already seen in our chapter on Biology the account of Haeckel's famous fraud, which Darwin unfortunately chose to believe in, quite uncritically. This fraud has been perpetrated on many students of biology, in textbooks well into our times, according to Dr. Jonathan Wells, even though it was publicly declared a fraud by several of Haeckel's most able scholarly contemporaries in the 1800s.

Haeckel was also persuasive in convincing some of the most influential persons among his countrymen that they should accept that it was their evolutionary destiny as a "master race" to "outcompete" inferior peoples, since it was right and natural that only the "fittest should survive." His version of Darwinism was incorporated in Adolf Hitler's *Mein Kampf* (1925), which means "My Struggle," taken from Haeckel's German translation of Darwin's phrase, "The Struggle for Existence."⁷³⁸

Haeckel was to influence many people in his day. In fact, he became in 1918 "a member of the *Thule Gesellschaft*, which was a radical right-wing organization that played a key role in the establishment of the Nazi movement. Rudolf Hess and Hitler attended the meeting as guests."⁷³⁹

Haeckel's influence on Darwin was not only in the field of embryology. According to Tom De Rosa, Darwin also looked to Haeckel for expertise on racial matters:

Again, Haeckel proved [to be] a source of faulty and false information. In his 1868 book, *Natural History of Creation*, Haeckel includes illustrations of 12 facial profiles—six human, six simian—arranged by number according to their ranking on the evolutionary scale. Number one is a European, after which the following profiles are shown in “descending” order: an East Asian, a Fuegian, an Australian, a black African, and a Tasmanian. After the Tasmanian came a gorilla and other apes. Haeckel had no empirical evidence on which to base his ordering of men and apes... Nonetheless, this was part of what Darwin described in the 1882 edition of *Descent of Man* as Haeckel's full discussion of “the genealogy of man.” Indeed, Darwin praises Haeckel's work, writing that “almost all the conclusions at which I have arrived I find confirmed by this naturalist, whose knowledge on many points is much fuller than mine.”⁷⁴⁰ ...

Wilhelm His, a well-known embryologist and professor of anatomy at the University of Leipzig, also uncovered [Haeckel's] fraud. He showed in 1874 that Haeckel had doctored the drawings presented in his book. He was scathing in his judgment of Haeckel, stating that Haeckel had disqualified himself as a science researcher by his blatant fraud.⁷⁴¹ ...

With Haeckel exposed as a fraud in 1868, it is amazing that Darwin cited Haeckel as a resource in his 1871 book, *The Descent of Man*.⁷⁴² ...

Haeckel's *Natural History of Creation* contained enormous speculation about the tree of life that went beyond Darwin's *Origin*. Even so, Huxley approved, stating that any effort to advance Darwin's theory, even if in the wrong direction, was preferable to no movement at all.⁷⁴³ He also came up with the claim of a “missing link,” *Pithecanthropus alalus*, or “silent ape.” He even had imaginary and fraudulent drawings produced of a male and female.⁷⁴⁴ ...

Haeckel likened Australian aborigines and the Bushmen of South Africa to the apes. This led to some grotesque attempts to crossbreed ... Approached by a German sexologist about another similar project, Haeckel recommended “trying to inseminate a chimpanzee with the sperm of a black African.”⁷⁴⁵ ...

Haeckel’s “hideously ugly” contribution to human affairs is even more pronounced in efforts to purify the race by getting rid of the weak. He favored infanticide for babies with congenital deformities, disabilities or mental retardation....He believed Abortion and infanticide were equivalent to killing beings at lower stages of evolutionary development.⁷⁴⁶ ...

This also applied to the mentally ill. He believed in forced euthanasia.

Haeckel endorsed German colonialism and annexation of other European territories... He also believed in the extermination of the “inferior” races. Haeckel’s pseudo-scientific justification for German Military aggression, as well as eliminating the sick, weak and unfit, gained a broad audience in Germany and helped lay the foundation for Hitler’s Nazi ideal.⁷⁴⁷

Other German intellectuals who were influenced by Darwin included Bartholomaeus von Carneri, an Austrian politician who wrote *Morality and Darwinism* (1871), and the economist Albert E.F. Schaffle. Schaffle applied Darwin to ethics in the 1870s. He claimed that morality is not God-given, but the outcome of the evolutionary process.

Francis Galton’s teachings on eugenics were also popular in German thought. The German eugenics movement became evident in academic circles in the 1890s and spread to the public in the early 1900s through journal articles, newspapers and books. The German populace was very

much aware of evolution and its implications.⁷⁴⁸ ...According to Galton (a relative of Darwin's) "the creed of eugenics is founded upon the idea of evolution; not on a passive form of it, but on one that can to some extent direct its own course."⁷⁴⁹ De Rosa states that

Darwin himself classified humans along racial lines when he determined that black Africans should occupy a lower limb on the tree of life than civilized Europeans. Darwin may not have agreed entirely with everything his favorite disciples said and did with respect to his theory, but it was his ideas that led logically to the conclusions reached in Germany. Eugenics was not an aberration of Darwinism, but a linear consequence of the principles elaborated by Darwin in *Origin, Descent, and Emotions*.³⁷

Richard Weikart, the author of *From Darwin to Hitler*,⁷⁵⁰ writes that "The Darwinian ferment in Germany was such that by the "1890s and early 1900s, Darwinism had become well-entrenched in Germany... By this time, racial theorizing, most of which was laced with Darwinian rhetoric, was heating up, capturing the imagination of ever wider audiences."⁷⁵¹

Another element that was fundamental to Hitler's thinking was that of The Pan-German League, which sought national expansion by annexing lands in Europe and colonization in Africa. Hitler admired the Pan-German Party leader, Georg von Schönerer, and paid tribute to him in *Mein Kampf* for his beliefs that Jews were an obstacle to German racial purity.⁷⁵²

In brief, Weikart argues that there is a link between Darwin and Hitler:

First, Darwinism undermined traditional morality and the value of human life. Then, evolutionary progress became the new moral imperative. This aided the advance of eugenics, which was overtly founded on Darwinian principles. Some Eugenicists began advocating euthanasia and infanticide for the disabled. On a parallel track, some prominent Darwinists argued that human racial competition and war is part of the Darwinian struggle for

existence. Hitler imbibed these social Darwinist ideas, blended in virulent anti-Semitism, and—there you have it—Holocaust!⁷⁵³

Friedrich Nietzsche (1844-1900).

This German philosopher and critic of culture was a brilliant man who had some interesting and provocative ideas and has been called a “master of aphoristic form and use of contradictions.”⁷⁵⁴ Unlike some expert philosophers who excelled in legitimate uses of analogies and paradoxes, Nietzsche unfortunately slipped all too frequently into outright contradictions. Perhaps it is for this reason that many academics still find in his writings sufficient reasons to praise him—however, one must also see the weak side of his written products and what would have been the entirely predictable effects they could have on the general population.

When discussing Nietzsche, it seems appropriate to mention some of the suffering in his life which probably contributed to his contradictions and tragic ideas. He was the son of a Lutheran pastor who unfortunately died, quite mad, when Friedrich was only 5 years old. He was brought up by some female relatives who were Christian believers. However, Nietzsche rebelled against Christianity throughout his life. He was a successful student and, at age 25, became a professor of philosophy in the University of Basel, Switzerland. He served as a medical orderly with the Prussian army in the Franco-Prussian war but was released early from this duty due to dysentery and diphtheria. In January 1889, he suffered a mental breakdown in Turin, Italy. He was committed to an asylum and finally to his family’s care. His insanity was probably due to an early syphilitic infection. He was also diagnosed as acting in a manic-depressive way, and this was some 60 years, or more, before there was any known effective medical treatment for this condition.

Once having taken leave of his Christian upbringing, Nietzsche became a “monist,” and was able to write, for example, in *Thus Spake Zarathustra*:

All beings hitherto have created something beyond themselves: and ye want to be the ebb of that great tide, and would rather go back to the beast than surpass man? What is the ape to man? A laughingstock, a thing of shame: And just the same shall man be to the Superman: a laughingstock, a thing of shame. Ye have made your way from the worm to man, and much within you is still worm. Once were ye apes, and even yet man is more of an ape than any of the apes."⁷⁵⁵

H. James Birx has the following to say about Darwin's profound influence on Nietzsche's dynamic philosophy:

The scientist Charles Darwin had awakened the philosopher Friedrich Nietzsche from his dogmatic slumber by the realization that, throughout organic history, no species is immutable (including our own). Pervasive change replaced eternal fixity. Going beyond Darwin, the German thinker offered an interpretation of dynamic nature that considered both the philosophical implications and theological consequences of taking the fact of biological evolution seriously.

Nietzsche was not previously oblivious to either geological time or the paleontological record. He accepted the most controversial ramification of Darwin's theory: humankind had evolved from remote apelike ancestors, in a completely naturalistic way, through a process of chance and necessity (fortuitous random variations appearing in, and inevitable natural selection acting on, individuals within a changing environment.) Even the mental faculties of human beings, including love and reason, were acquired during the course of evolutionary ascent from earlier primate forms.

For Nietzsche, evolution is the correct explanation for organic history but ...it has far reaching truths for both scientific cosmology and philosophical anthropology... He held that Darwinian

evolution led to a collapse of all traditional values because both objective meaning and spiritual purpose had vanished from reality and consequently, there can be no fixed or certain morality...

Nietzsche offered an interpretation of reality that accepted the fluidity of nature, species, ideas, beliefs and values...

He had assumed that the outcome of Darwinian evolution could only account for the success of inferior forms of life simply in terms of sheer numbers...Nietzsche argued that Darwin's blind species-struggle of the masses for existence needed to be replaced by his own discovery of the individual struggle of a few for self-creation and excellence.

Nietzsche saw the explanatory mechanism of natural selection as merely accounting for the quantity of species within organic history, but it is a vitalistic force that increases the quality-of-life forms throughout progressive biological evolution. He held that nature is essentially the will to power that increases the quality of life... Nietzsche's vitalism had substituted Darwin's adaptive fitness with creative power.

While he held that the evolution of organisms had its origin in primordial slime, our species now stands high and proud on the pyramid of life. Even so, he saw a natural tendency for the human animal to evolve toward common mediocrity. But through the will to power, superior individuals have the potential to master their lives (overcoming nihilism and pessimism) and the intellect to actualize creative activity.

As with Thomas Huxley, Ernst Haeckel and Darwin himself, Nietzsche taught the historical continuity between human beings and other animals (especially the chimpanzees). However, he did assert that some individuals will rise far above the beasts,

including our own species, but that this would only occur in the remote future.⁷⁵⁶

It is true that Nietzsche wrote an attack on Darwin's theory, but this is once again only indicative of how self-contradictory Nietzsche could be. He was principally objecting to certain aspects of Darwinism as taught by Darwin and some of his followers. John M. Moore, who is a neo-Darwinian writes:

An attack on Darwin's theory brings him into some unfortunate company, for Nietzsche shares more with Darwin than he does with most of Darwin's opponents. Early commentators often plausibly characterized him as a variety of Darwinist. Simmel claimed that Nietzsche underestimated the influence of Darwin upon him and described him as a fanatic of evolution. He is committed to egoism, atheism and elements of the invisible hand...

There are a number of reasons why Nietzsche might have been expected to be sympathetic to Darwin's theory. In the first place its atheism must have been attractive to him...Nietzsche was conscious of this from his enthusiastic reading of Lange's *History of Materialism*. Darwin's achievement was to have destroyed so-called "natural religion," which was something like 18th century deism. This did great service for the cause of atheistic enlightenment.⁷⁵⁷

In his writings, starting in 1872, Nietzsche wrote in *The Birth of Tragedy* that human beings were subject to unconscious involuntary overwhelmingly self-destructive Dionysian instincts. Thus, according to Nietzsche, the Greeks struggled against this tendency by "erecting the sober, rational, and active Apollonian principle."⁷⁵⁸

Reality, for Nietzsche, has to do with endless Becoming, and "Apollonian power" comes from the creation of an illusion, and this is the only way that the Greeks were able to control the Dionysian flood. However, after some of his own experiments were discovered to be only temporary, and after seeing some of his Apollonian spells were dashed, he concluded that each loss

would make the return to Dionysian reality even more painful. Although in his earlier work he seems to have favored more Apollo, his thesis was that it took both to make possible the birth of tragedy.⁷⁵⁹

Concerning religion, Nietzsche stated that he respected the sincere and genuine Christianity which he considered “possible in all ages,” but he maintained that only Christ himself proved himself capable of living this. *Thus Spoke Zarathustra*, deals with the notions of the “will to power,” radical nihilism, and the eternal recurrence. His notion of tragedy was such that in a note entitled “Anti-Darwin,” he lamented that “man, as a species, is not progressing.” He seems to have reverted to an earlier pre-Judeo-Christian worldview in that he substituted the ordinary conception of progress for a doctrine of eternal recurrence, and stressed the positive power of heroic suffering. He states in his *The Twilight of the Idols* (1888) the following. “I call Christianity the one great curse, the one enormous and innermost perversion, the one great instinct of revenge, for which no means are too venomous, too underhanded, too underground and too petty—I call it the one immortal blemish of mankind.”⁷⁶⁰

His view of religion was such that he decided that all life evidences a will to power, and that hopes for a better life after death are only compensations for the sense of failure one has in this life. As a result of this worldview and of his observations of the movement from traditional beliefs to a belief in self-actualization, in science and in commerce, he came up with his famous writing about “God is dead. God remains dead. And we have killed him. What was holiest and most powerful of all that the world has yet owned has bled to death under our knives: who will wipe this blood off us?”⁷⁶¹

If a person decides to live without God, either by concluding that he never existed or that he died, this person is still left with a need to have a rational explanation of man and have an “ideal image of man,” which is so earnestly sought after in so many fictional books and other literary works. If we have no supernatural deity,⁵¹ we are left with the option of deifying man, or else the State. As Collins points out, “The infamous declaration “God is dead,” is but a segue for the introduction of a new god.⁷⁶² This god has had

numerous manifestations, as is evidenced by the following delineation by W. Warren Wagar:

Nineteenth and early twentieth-century thought teems with time-bound emergent deities. Scores of thinkers preached some sort of faith in what is potential in time, in place of the traditional Christian and mystical faith in a power outside of time. Hegel's *Weltgeist*, Comte's *Humanité*, Spencer's organismic humanity inevitably improving itself by the laws of evolution, Nietzsche's doctrine of superhumanity, the conception of a finite God given currency by J.S. Mill, Hastings Rashdall and Williams James, the vitalism of Bergson and Shaw, the emergent evolutionism of Samuel Alexander and Lloyd Morgan, the theories of divine immanence in the liberal movement in Protestant theory, and duNouy's telefinalism—all are exhibits in evidence of the influence chiefly of evolutionary thinking, both before and after Darwin, in Western intellectual history. The faith in progress itself—especially the idea of progress as built into the evolutionary scheme of things—is in every way the psychological equivalent of religion. Nietzsche's *Übermensch* was but one more link in this ideational chain.⁷⁶³

And the deification of the State comes with its own variety of Messianism. Nikita Khrushchev once declared to the assembled troops at the May Day celebration in Red Square, "You have already given your lives for the State. Now, go out and prove it!"⁷⁶⁴

Since for Nietzsche the other world is an illusion, man should not worship gods but rather concentrate on his own elevation, which Nietzsche symbolizes in the *Übermensch*. Consequently, it was not hard for Nietzsche to argue that no single morality can be appropriate to all men. For him, the real meaning of history was the appearance, on rare occasions, of the exceptional individual. By creating in his writings the figure of Zarathustra he presented the teacher of the coming superman.⁷⁶⁵

As Nietzsche often contradicted himself, he can be quoted by anyone for different purposes. His defenders point out that Nietzsche rejected biological racism—and he despised his brother-in-law for being anti-Semitic and a German nationalist. He personally refused German citizenship, being firstly a Prussian citizen and finally *apatride*. Yet he “...railed against parliaments, preached the will to power, and proclaimed the coming of the master race and the superman. He also adores “the magnificent blond brute, avidly rampant for spoil and victory.” The blond brute was Nietzsche’s *Übermensch*.⁷⁶⁶

One other apparent contradiction is what Nietzsche has to say about the Jews. Shirer and many other good scholars say that Nietzsche was never an anti-Semite. Yet Nietzsche considered Christianity as inextricably linked with Judaism and derisively called the Jews a “nation of priests.” Nietzsche makes it clear he hated the “priestly caste.”⁷⁶⁷

Nietzsche also frequently espoused eugenics, suggesting that he did place significant value in race and heredity.

Society as the trustee of life is responsible to life for every botched life that comes into existence; and as it has to atone for such lives, it ought consequently to make it impossible for them ever to see the light of day: it should in many cases actually prevent the act of procreation and may, without any regard for rank, descent, or intellect, hold in readiness the most rigorous forms of compulsion and restriction and, under certain circumstances, have recourse to castration... “Thou shalt not murder” is a piece of ingenuous puerility compared with “Thou shalt not beget!!!” The {unhealthy} must at all costs be eliminated, lest the whole fall to pieces.⁷⁶⁸

One finds here Malthusian demands for the prohibition of procreation amongst certain populations and mandates for compulsory sterilization. Even here, there are contradictions, as this eugenical rule should be

undertaken without regard for “rank, descent or intellect,” while holding simultaneously that the unhealthy population must at all costs be eliminated. Obviously, Nietzsche believes in some connection between heredity and unhealthiness.⁷⁶⁹

While some argue [www.kirjastro.sci.fi/nietzsch.htm] that Nietzsche “was deeply opposed to collective tendencies of socialists,” others correctly point out that his “bestowal of primacy upon the social ‘whole’ betrays his collectivist proclivities,” which would later be shared by others who would “virtually deify the collective.” Nietzschean philosophy “comprises an ideational continuum binding...socialist totalitarians.”⁷⁷⁰

In Academia, according to Collins, there is a great desire to “redeem” Nietzsche’s writing and character. However, one must see the whole panorama and concede the ominous parallels between Nietzsche’s thought and the thought of some of the world’s most reprehensible and effective mass murderers.

Ye shall love peace as a means to new war, and the short peace more than the long. You I advise not to work, but to fight. You I advise not to peace but to victory...You say it is the good cause which halloweth even war? I say unto you; it is the good war which halloweth every cause. War and courage have done more great things than charity.⁷⁷¹

Nietzsche’s prophecy of the coming elite who would rule the world and from whom the superman would spring. In *The Will to Power*, he exclaims: “A daring and ruler race is building itself up... The aim should be to prepare a transvaluation of values for a particularly strong kind of man, most highly gifted in intellect and will. This man and the elite around him will become the ‘lords of the earth.’”⁷⁷² However much his supporters may try to “guild the lily,” his philosophy included *inter alia* the following:

The strong men, the master, regain the pure conscience of a beast of prey; monsters filled with joy, they can return from a fearful

succession of murder, arson, rape and torture with the same joy in their hearts; the same contentment in their souls as if they had indulged in some student's rag...When a man is capable of commanding, when he is by nature a "Master," when he is violent in act and gesture, of what importance are treaties to him? ...To judge morality properly, it must be replaced by two concepts borrowed from zoology: the *taming* of a beast and the *breeding* of a specific species.⁷⁷³

In a way, Nietzsche could foresee the logical consequences of the atheistic worldview that he and his contemporaries had ushered in:

There will be wars, such as have never been waged on earth. I foresee something terrible, chaos everywhere. Nothing left which is of any value, nothing which commands "Thou Shalt!" Nietzsche and others prefigured and predicted the moral nihilism of the twentieth century, the revolt against reason and the limitless pursuit of the irrational. ... Nietzsche despised religion in general and Christianity in particular...

Nietzsche was quick to attack the ethics of love as taught by Christ in the Beatitudes from the Sermon on the Mount. He believed that if mankind sought to show responsibility toward the poor and the weak, then the losers would be in control. He predicted that the twentieth century would become the bloodiest century in history and that universal madness would break out.⁷⁷⁴

Nietzsche was to have a profound influence on the future of Germany. According to Schier:

Yet I think no one who lived in the Third Reich could have failed to be impressed by Nietzsche's influence on it...Nazi scribblers never tired of extolling him. Hitler often visited the Nietzsche museum in Weimar and publicized his veneration for the philosopher by

posing for photographs of himself staring in rapture at the bust of the great man.

That in the end Hitler considered himself the superman of Nietzsche's prophecy cannot be doubted.⁷⁷⁵

Once established this naturalist philosophy which glorifies not God, but rather man or the state, the consequences of the *segue* would be to decide which would be the most efficient way to socially engineer the lives of humans and their societies, for the sake of creating a natural superman. All the resources of various governments would be placed at the service of this new kind of naturalist messianism, as we shall see in the next chapter.

Chapter 17:
***Applied Darwinism and the
Morality of War***

The Franco-Prussian War.

This 1870 war was the first large conflict in which both sides used Darwinism as an excuse for their attempts to murder one another in organized warfare.⁷⁷⁶ This led Max Nordau in “The Philosophy and Morals of War”⁷⁷⁷ to claim: “The greatest authority of all the advocates of war is Darwin. Since the theory of evolution has been promulgated, they can cover their natural barbarism with the name of Darwin and proclaim the sanguinary instincts of their innermost hearts as the last word of science.” In a similar vein, Columbia University professor Jacques Barzun argued that Darwinism clearly enticed people to warfare in this 1870 conflict and many others.

In every European country between 1870 and 1914 there was a war party demanding armaments, an individualist party demanding a free hand over backward peoples, a socialist party demanding the conquest of power, and a racialist party demanding internal purges against aliens—all of them, when appeals to greed and glory failed, or even before, invoked Spencer and Darwin, which was to say, science incarnate...Race was biological, it was sociological; it was Darwinian.”⁷⁷⁸

As Darwinism permeated more and more European culture, "...the effects of the struggle for survival started to emerge. Colonialist European nations in particular began to portray the nations they colonized as 'evolutionary backward nations' and looked to Darwinism for justification."⁷⁷⁹

"Frederich von Bernhardi was a German military officer who, upon retiring in 1909, wrote a book on evolutionary theory, extolling war and appealing to Germany to start another one! His book was titled *Germany and the Next War*.⁷⁸⁰

The First World War.

British Historian James Joll, in his book titled *Europe Since 1870*,⁷⁸¹ explains that one element in preparing the way for World War I was the European leaders' acceptance of Darwinism. This is illustrated by a statement by the Austro-Hungarian Chief of Staff, Baron Conrad von Hoetzendorf, written in his post-war memoirs:

Philanthropic religions, moral teaching and philosophical doctrines may certainly sometimes serve to weaker mankind's struggle for existence in its crudest form, but they will never succeed in removing it as a driving motive of the world ... It is in accordance with this great principle that the catastrophe of the Word War came about as the result of the motive forces in the lives of states and peoples, like a thunderstorm which must by its nature discharge itself.⁷⁸²

Lest one might think that Conrad von Hoetzendorf, as a military man, was an isolated case, consider what Kurt Riezler, the personal assistant and confidant of the German Chancellor Theobald von Berthmann-Hollweg wrote in 1914: "Eternal and absolute enmity is fundamentally inherent in relations between peoples. The hostility which we observe everywhere...is not the result of a perversion of human nature but is the sense of the world and the source of life itself."⁷⁸³

Fredierch von Bernhardi went on to become a General in World War I, and he claimed that “War is a biological necessity. It is as necessary as the struggle of the elements of nature. It gives a biologically just decision since its decisions rest on the very nature of things.”⁷⁸⁴ This same person stated that “[war] is not only a biological law, but a moral obligation and, as such, an indispensable factor in a civilization.”⁷⁸⁵ Von Bernhardi was not unique in thinking that way at that time. Many other German Generals and political leaders accepted Darwin, Nietzsche and Haeckel’s teachings, leading them to conclude that suffering, bloodshed and war were a kind of “development,” and an unchanging law of nature.⁷⁸⁶

R. Milner points out that:

During World War I, German intellectuals believed natural selection was irresistibly all-powerful (*Allmacht*), a law of nature impelling them to bloody struggle for domination. Their political and military textbooks promoted Darwin’s theories as the “scientific” basis of a quest for world conquest, with the full backing of German scientists and professors of biology.⁷⁸⁷

Harun Yahya is in agreement with this and concludes:

The ideological root that dragged all of that generation to destruction was nothing else than Darwin’s concepts of the ‘struggle for survival’ and the ‘favored races.’ World War I left behind it 8 million dead, hundreds of ruined cities, and millions of wounded, crippled, homeless and unemployed.

The basic cause of World War II, which broke out 21 years later and left 55 million dead behind it, was also based on Darwinism.⁷⁸⁸

World War II.

Germany.

Just as was true in the First World War, the Second World War was started by Germany. The personality of Adolf Hitler dominated the scene in Europe and led the continent into the War. While some Darwinian authors claim that Hitler carried the works of Schopenhauer and not Darwin in his rucksack while soldiering in World War I, some others claim, more to the point, that

Adolf Hitler's mind was captivated by evolutionary thinking—probably since the time he was a boy. Evolutionary ideas, quite undisguised, lie at the basis of all that is worst in *Mein Kampf* and in his public speeches. A few quotations, taken at random, will show how Hitler reasoned ... [Hitler said] “He who would live must fight; he who does not wish to fight, in this world where permanent struggle is the law of life, has not the right to exist.”

One need not read very far in Hitler's *Mein Kampf* to find that evolution likewise influenced him and his views on the master race, genocide, human breeding experiments, etc.⁷⁸⁹

The celebrated British evolutionist, Sir Arthur Keith, wrote in the 1940s:

The German Führer, as I have consistently maintained, is an evolutionist. He has consciously sought to make the practice of Germany conform to the theory of evolution. ... [Hitler] is an evolutionist, not only in theory but, as millions know to their cost, in the rigor of its practice. For him, the “national front” of Europe is also the “evolutionary front;” he regards himself, and is regarded, as the incarnation of the will of Germany, the purpose of that will being to guide the evolutionary destiny of its people.⁷⁹⁰

L.H. Gann reports that

A strong Darwinist influence can be seen in Nazi ideologues. When one examines this theory, which was given shape by Adolf Hitler and Alfred Rosenberg, one comes across such concepts as “natural selection,” “selected mating,” and “the struggle for survival between the races,” which are repeated dozens of times in *The Origin of Species*. When calling his book *Mein Kampf*, (My Struggle), Hitler was inspired by the Darwinist struggle for survival and the principle that victory went to the fittest. He particularly talks about the struggle between the races. “History would culminate in a new millennial empire of unparalleled splendor based on a new racial hierarchy ordained by nature herself.”

In the 1933 Nürenberg party rally, Hitler proclaimed that “a higher race subjects to itself a lower race... a right which we see in nature, and which can be regarded as the sole conceivable right.”⁷⁹¹

Many historians accept that the Nazis were influenced by Darwinism. One historian, R. Hickman, says that “Hitler was a firm believer and preacher of evolution. Whatever the deeper, profound complexities of his psychosis, it is certain that ... his book, *Mein Kampf*, clearly set forth a number of evolutionary ideas, particularly those emphasizing struggle, survival of the fittest and the extermination of the weak to produce a better society.”⁷⁹²

R. Milner affirms that:

Hitler’s position was that Man must conform to nature’s processes, no matter how ruthless. The “fittest” must never stand in the way of the law of evolutionary progress. In its extreme form, that social view was used in Nazi Germany to justify sterilization and mass murder of the “unfit,” “incompetent,” “inferior races.” ... During the 1930s, Adolf Hitler believed he was carrying Darwinism forward with his doctrine that undesirable individuals (and inferior races) must be eliminated in the creation of the New Order dominated by Germany’s Master Race.⁷⁹³

Daniel Gasman noted that “Hitler hated Christianity as fiercely as he loved Darwin’s theory.” That is at least comprehensible, because the two are incompatible.

[Hitler] stressed and singled out the idea of biological evolution as the most forceful weapon against traditional religion and he repeatedly condemned Christianity for its opposition for the teaching of evolution...For Hitler, evolution was the hallmark of modern science and culture, and he defended its veracity as did Haeckel.⁷⁹⁴

Hitler is quoted by Larry Azar as having said, “I regard Christianity as the most fatal, seductive lie that has ever existed.”⁷⁹⁵ Azar also states about Hitler’s love for evolution: “This doctrine of racial supremacy Hitler took at face value...He accepted evolution much as we today accept Einsteinian relativity ... Sixty-three million people would be slaughtered in order to obey the evolutionary doctrine that perishing is a law of nature.”⁷⁹⁶

A Jewish biology professor at Purdue University, writing for the Association of Orthodox Jewish Scientists, said “I cannot deny that the theory of evolution and the atheism it engendered, led to the moral climate that made a holocaust possible.”⁷⁹⁷

Although there were a number of influences on the eventual evolution of thought into National Socialism (Nazism) in Germany, Nietzsche’s *Übermensch* was one important link in this ideational chain.

The thematic continuity is a religious faith in humanity’s evolutionary ascent towards apotheosis. This is by no means new. This doctrine of transformationism dates back nearly 6,000 years, finding its crucible in Mesopotamia. It was the religious doctrine promulgated by the ancient Babylonian and Egyptian Mystery cults. Masonic scholar W.L. Wilmshurst verified this contention: “This—the *evolution* of man into superman—was always the purpose of the ancient Mysteries. It comes as little surprise that Nietzsche viewed

the gods of the Bacchic and Dionysian Mysteries so favorably. They embodied his religious faith in humanity's emergent deity.

Likewise, Hitler adhered to the religion of apotheosized man. In *Hitler Speaks*, Hermann Rauschning quotes Hitler as having declared, "Man is becoming God—that is the simple fact. Man is God in the making. In his coming kingdom of deified humanity, the Führer envisioned a caste system where the "god-man" ruled the "mass animal."⁷⁹⁸ This was purely derivative of Nietzsche's racialist vision for the future. In *The Will to Power*, Nietzsche declares:

A daring and ruler race is building itself up... The aim should be to prepare a transvaluation of values for a particularly strong kind of man, most highly gifted in intellect and will. This man and the elite around him will become the 'lords of the earth.'"

Such rantings from one of Germany's most original minds must have struck a responsible chord in Hitler's littered mind. At any rate he appropriated them for his own—not only the thoughts but the philosopher's penchant for grotesque exaggeration, and often his own words, "Lords of the Earth" is a familiar expression in *Mein Kampf*. That in the end Hitler considered himself the superman of Nietzsche's prophecy cannot be doubted.⁷⁹⁹

To the apologists for Nietzsche, who say that his thought was very different from that of Hitler's in the sense that Nietzsche was an anti-nationalist, it must be said that Hitler's nationalism was only a steppingstone in the path to world government ruled by a supernational elite. For Nietzsche, his *Übermensch* was an aristocrat who would arrive at the pinnacle of evolution, where he would "overcome" his own humanity. For both Hitler and Nietzsche, this post-human condition represented godhood. Hitler's own words were:

I had to encourage 'national' feelings for reasons of expediency; but I was already aware that the 'nation' idea could only have a temporary value. The day will come when even here in Germany

when what is known as ‘nationalism’ will practically have ceased to exist. What will take its place in the world will be a universal society of masters and overlords.⁸⁰⁰

In implementing his evolutionary Reich, Hitler proved that he really did mean what he was saying and writing.

Hitler exterminated over 273,000 persons even before the holocaust. He started with the aged [those who are an economic burden, who detract from the happiness of society as a whole], the infirm, the senile, the mentally retarded and defective children [that included epileptics]. Then there were World War I veterans—amputees still in hospitals. Their reward for giving an arm or leg for Germany was extermination as “undesirable.” Even bed-wetters and children with badly modeled ears were put to death—all part of the euthanasia project of Germany.⁸⁰¹

Instead of letting chance factors dominate reproduction decisions, Hitler proposed that the scientists use the power of the state to influence these decisions so that the gene pool would shift to what “informed conclusions” concluded was the desired direction.

An important argument that Hitler used to support his programs of racial genocide of the Jews, Blacks and other groups was they were genetically “inferior” and that their interbreeding with the superior Aryan race would adversely affect the latter’s gene pool, polluting it, and lowering the overall quality of the “pure race.”⁸⁰²...

From the *Preservation of Favored Races in the Struggle for Life* [Darwin’s subtitle to *The Origin of Species*], it was a short step to the preservation of favored individuals, classes or nations—and from their preservation to their glorification... Thus, it has become a portmanteau of nationalism, imperialism, militarism, and dictatorship, of the cults of the hero, the superman, and the master

race...recent expressions of this philosophy, such as *Mein Kampf* are, unhappily, too familiar to require exposition here.”⁸⁰³

Lest one should think that this Darwinian paradise was being implemented only by soldiers who had little choice in the matter, it should be remembered that other professionals were involved:

Hospitals became killing centers so that by 1939, for example, over 70,000 Germans already perished in the Nazi eugenics program with the full approval and concrete of the German medical establishment. The penetration of the Darwinian social ethic ran so deep that the entire Judeo-Christian moral traditional was overthrown. Diabolical crackpots like Joseph Mengele actually believed their experiments would help the human race.

After Auschwitz and the Gulags, it shouldn't be difficult to recognize the speciousness of the claim that totalitarian ideologies are in any way “scientific.” The millions killed in the name of Nazism and Marxism alone should evoke some humility toward the limits of science and reveal the transparency of attempts to confer authority where in fact none exists. In pre-war Germany, however, the faith that secular ideology could improve human society towered as high as Babel and would not waiver until the bombs rained down on Berlin.

In due course the Darwinian moral logic would be applied to nations. Germany saw itself as the most educated and cultivated in Europe, and by the light of social Darwinism the German advancement served as proof of German supremacy. These racist ideas would fuel German aggression first as colonial occupiers and later as European conquerors. The seeds of Hitler's *Aryan supremacy* and *Lebensraum* were sown here.⁸⁰⁴

By the time Hitler rose to power, Social Darwinism was firmly entrenched in German culture. Hitler was able to direct the machinery of state toward genocide without any appreciable public resistance because the moral barriers against this evil were overturned long before he came to power. Germans could already justify killing their own. Killing others would prove even easier to justify...

“Darwinism did not produce the Holocaust,” writes Weikart, “but without it the social and scientific underpinnings would not have existed that justified genocide as morally beneficent by Hitler and his followers. Darwinism turned Judeo-Christian morality on its head. By elevating death as progress and jettisoning any notion that life is inherently sacred, the moral foundation for unprecedented barbarism was laid.”⁸⁰⁵

Hitler once stated that we Nazis are “...barbarians! We want to be barbarians. It is an honorable title [for, by it] we shall rejuvenate the world⁸⁰⁶ ... He consciously sought to make the practice of Germany conform to the theory of evolution:

If war be the progeny of evolution—and I am convinced that it is—then evolution has “gone mad,” reaching such a height of ferocity as must frustrate its proper role in the world of life—which is the advancement of her competing “units,” these being tribe, nations or races of mankind. There is no way of getting rid of war save one, and that is to rid human nature of the sanctions imposed on it by the law of evolution. Can man make the law of evolution null and void? ...I have discovered no way that is at once possible and practicable. “There is no escape from human nature.” Because Germany has drunk of evolution to its last dregs, and in her evolutionary debauch has plunged Europe into a bath of blood, that is no proof that the law of evolution is evil. A law which brought man out of the jungle and make him king of beasts cannot be altogether bad.⁸⁰⁷

Fascist Italy.

Benito Mussolini (1883—1945) was the son of a confused socialist activist who was a drinker and a man who was “primed for violence and animated by revolutionary dreams. His mother was a fervent catholic often caught between her faith and the extreme ideas of her husband.” As a youngster, he was a violent bully, often beating little girls on their way to school. He was sexually active as a teenager and looked especially for young married women whose husbands were away on active military duty. He graduated at age 19 with an “educational diploma that allowed him to teach. His teaching career lasted for only a short while because the parents did not accept his licentious behavior. He was a drinker and gambler and, when he lost his teaching job, he became a drifter. He went to Switzerland, where he presented himself as some sort of socialist revolutionary. At age 21, he met and fell in love with Angelica Balabanoff, a Ukrainian “professional rioter.” She introduced him to the writings and thought of Nietzsche, which was a great influence in his life. She also helped lead him into greater prominence among the socialists until he became a member of the Italian Socialist Party’s Central Committee. From there, he went on to become in 1912 the editor of their daily newspaper, *Avanti*.⁸⁰⁸

After returning to Italy in 1904, he was drafted into the Italian Army in 1905. He spent almost two years in the army, then took a teaching job again. He left that for a full-time job as a socialist agitator. For some years, as a journalist, he was able to shape public opinion through several newspapers. During World War I, Mussolini at first advocated non-intervention as the means to achieve solidarity among the international working class and a united front against imperialistic war mongering. However, as the war lingered on, he changed his opinion and started to heartily endorse Italy’s intervention on the side of the Allied forces. For this, his socialist friends dismissed him from his position and membership in the Socialist party.

After World War I, the Italian socialists wanted to do all possible to destabilize Italy so as to turn it into another Workers’ paradise like

Russia and Hungary. Socialists were supporting strikes and murdering or terrorizing landowners. The socialist government in power was unable to control them. It was here that Mussolini's Fascists, the Black Shirts, stepped in to end the violence all over Italy. They were, however, so brutal that they were unpopular with most Italians. In the 1919 elections, the Fascists only won 35 seats in Parliament. Mussolini then threatened a march on Rome, to achieve a *coup d'état*. It was a bluff because his fascist movement was too decentralized and disorganized to do this. However, the frightened King of Italy, terrified as he was by the prospect of a Community revolution which undoubtedly would cost him his life, called on Mussolini to form a new government. Mussolini became Prime Minister. He then sent out his Black Shirts to terrorize all the socialist agitators, and only allowed one political party—his own. He ruled Italy as a totalitarian state and every economic activity was put under a government appointed panel, called a corporation. Representatives of management and labor in each industry served on these panels. All profit under the corporate state went to the government.

Although some argue that Mussolini was not so much an ideologue as a self-promoter of his personality cult, to the extent that he had a philosophy of government, it was definitely based on Darwinism. He found in Darwin and Nietzsche much to like and used it to firm up his own superman status. The *Encyclopedia Britannica*⁸⁰⁹ says "Benito Mussolini, who brought fascism to Italy, was strengthened in his belief that violence is basic to social transformation by the philosophy of Nietzsche." Phillip D. Collins states that Mussolini, "Who was a former member of the Italian Communist Party, read Nietzsche extensively. In 1938, while visiting on the Brenner Pass, Hitler gave a gift of the collected works of Nietzsche to Mussolini," as they both admired that philosopher's teachings.⁸¹⁰

Robert Clark states that "...Mussolini's attitude was completely dominated by evolution. In public utterance, he repeatedly used the Darwinian catchword while he mocked at perpetual peace, lest it hinder the evolutionary process... He used evolutionary language to justify his violent seizure and colonization of the people of Abyssinia (Ethiopia).⁸¹¹

Japan.

According to Social Scientist Takeshi Ishada,⁸¹² in his address to the 1978 Institute of Social Sciences held in Italy, titled “Elements of Tradition and Renovation in Japan during the Era of Fascism,”⁸¹³ writes of the value systems in Japan from the time Darwinism came to Japan up to the Second World War. He compares Japanese and Chinese value systems with Western values:

Western tradition...bases its value orientation on its belief in a transcendent God; whereas in both Chinese and Japanese societies transcendental values are lacking—or rather values are based upon and fused with the worldly order. To put it another way, values are principally centered on the maintenance and furtherance of the group...

The Chinese traditional value system was more universalistic and the Japanese one more particularistic.

Concerning social Darwinism, it played different roles in China and Japan. Social Darwinism became popular in China at the end of the 1890s when Yen Fu and others introduced the concept. Its popularity lasted longer than in Japan, and in 1907, Lu Hsün translated into Chinese a study by Ernst Haeckel, who had also been instrumental in converting Kato from Natural Law to Social Darwinism. While Japan’s social Darwinists considered Japan as a country rapidly joining the ranks of the powerful in the international area, [and] as Marxism became popular among Japanese intellectuals from the 1920s, it came to completely overshadow social Darwinism...

After it had successfully discredited the idea of natural law, social Darwinism was rapidly replaced by Marxism on the left wing of the political spectrum, and by the organic theory of the State on the right...

Although social Darwinism as a theory was very short lived [in Japan], the ideas behind it continued to survive in the minds of the masses particularly as a rationale for the idea that “might is right,” internationally.⁸¹⁴

This final remark contains a great deal of tragic history.

More will be stated on the Chinese experience with social Darwinism here below.

World Communism.

While Marxist states were involved in the Second World War, communism’s genesis and rise to power started earlier, of course.

It is a significant fact that Karl Marx admired the work of Darwin and sent him a copy of a volume of *Das Kapital*. Darwin did not read German or feel competent to comment on a book on political economics, but he did politely send a letter of thanks to Marx dated October 1873.⁸¹⁵

Both Marx and Engels read *Origin* shortly after it was published. They were quite excited at its “dialectical materialist” attitude. In their correspondence, Marx and Engels showed that they found that Darwin’s theory “contained the basis in natural history for communism.” Engels praised Darwin in his book titled *The Dialectics of Nature*, stating that he wrote this under the influence of Darwin. Furthermore, Engels tried to make his own contribution to Darwinism in the chapter “The Part Played by Labour in the Transition from Ape to Man.”⁸¹⁶

Engels acceptance of evolutionary theory made it the basis of all later communist ideology:

Darwinism was welcomed in the Communist countries since Karl Marx and Friedrich Engels had considered *Origin* (1859) a scientific justification for their revolutionary ideology. As far as Socialist theorists were concerned, Darwinism had proved that

change and progress result only from bitter struggle. They also emphasized its materialist basis of knowledge, which challenged the divine right of the czars.⁸¹⁷

Even in recent years, a number of leading evolutionary scientists admit that Marxism and Darwinism are closely related.

Aspects of evolution are perfectly consistent with Marxism. The explanation of the origins of humankind and of mind by purely natural forces was, and remains, as welcome to Marxists as to any other secularists. The sources of value and responsibility are not to be found in a separate mental realm or in an immortal soul, much less in the inspired words of the Bible.⁸¹⁸

Harun Yahya also reports that “Russian communists who followed in the footsteps of Marx and Engels, such as Plekhanov, Lenin, Trotsky and Stalin, all agreed with Darwin’s theory of evolution. Plekhanov, who is considered as the founder of Russian communism, regarded Marxism as “Darwinism in its application to social science.”⁸¹⁹

There is another interesting anecdote, about a conversation on religion which took place in a Russian Orthodox seminary:

Joseph heard me out and after a moment’s silence said, “You know, they are fooling us, there is no God...”

I was astonished at these words. I had never heard anything like this before.

“How can you say such things, Soso?” I exclaimed.

“I’ll lend you a book to read; it will show you that the world and all living things are quite different from what you imagine, and all this talk about God is sheer nonsense,” Joseph said.

“What book is that,” I enquired.

“Darwin. You must read it,” Joseph impressed on me.⁸²⁰

Joseph, in this recorded account, was none other than the young seminarian, Joseph Stalin. This account has been confirmed by a close associate of Stalin, while Stalin was alive. He was E. Yaroslavsky in his book titled *Landmarks in the Life of Stalin*.⁸²¹

It is a fact that evolutionary theory became a foundation principle undergirding all modern Communism:

Marx and Engels were doctrinaire evolutionists, and so have all Communists been ever since. Since atheism is a basic tenet of Marxism in general, and Soviet Communism in particular, it is obvious that evolution must be the number one tenet of Communism. Lenin and Trotsky and Stalin were all atheistic evolutionists, and so are today's communist leaders. In fact, they have to be in order ever to get to be Communist leaders!⁸²²

So strong was the anti-Theistic and anti-Christian worldview in the Communist world, that not only public worship was most frequently discouraged or even penalized—even private prayer was unconstitutional in some Socialist states. One Albanian Christian once was caught kneeling in silent prayer in a destroyed shell of a church building. For that, he got a sentence of 6 years hard labor in prison. University students in the Soviet Union, to get their degrees, had to include atheistic statements in their theses, or they would not get their degrees.⁸²³ Known Christians were excluded from the Communist party and professional level employment. Alexander Solzhenitsyn gives a good account of this in his work, *The Gulag Archipelago*.⁸²⁴ Richard Wurmbrand gives his personal testimony on just how severe the Communists were on Christians and on their families.⁸²⁵

Once again, this Soviet experience is an example of social Darwinism, also known as scientific socialism.

Red China.

For some 40 years after Darwin had *Origin* published, China was very much isolated. Then a Chinese national who had been educated in England,

a Mr. Yen Fu, started convincing his countrymen that China must “become acquainted with the philosophy of Social Darwinism in order that the country might survive by its own power, not relying on uncontrollable events or ‘destiny.’ Yen Fu was successful and is credited with having become the most famous Social Darwinist in China. Chinese intellectuals accepted Yen Fu’s arguments and started applying Darwinism towards a reformation that would involve many aspects of their society.⁸²⁶

Another important Chinese “reformer” in the 1890s was Mr. Liang Ch’i-ch’ao who, to build up some political currency in China, promoted racism against whites. He argued that:

...the United States would never be able to conquer the world, and that indeed it would be the men of China who would eventually populate and rule much of the world. Using this and other political propaganda, Ch’i-ch’ao filled in his arguments with ideas taken from Social Darwinism, which served to convince the people that authorities had weakened the people and thus they turned toward a Democratic government. Liang Ch’i-ch’ao fled China when the Manchu Empress Dowager attempted to subdue the reform movement; however, he continued to publish writings that were secretly imported to the people of China. The citizens eventually revolted against the Manchu and the result was a constant warring of powers over the next 50 years.⁸²⁷

According to the Chinese diplomat and philosopher Hu Shih,⁸²⁸ when Thomas Huxley’s *Evolution and Ethics* was published in 1898, it was immediately acclaimed and accepted by Chinese intellectuals. Rich men sponsored cheap Chinese editions so they could be widely distributed to the masses.⁸²⁹

Darwinism was the first Western theory to have a significant impact in China, from the time of its introduction up until at least the 1920s, when Marxism (also indebted to Darwinism) started to gain strength in China. James Reeve Pusey states that “The authority of Darwin, sometimes

misinterpreted, influenced reform and revolutionaries and paved the way for Chinese Marxism and the thought of Mao Tse-tung.”⁸³⁰

In 1949, Mao Tse Tung and the Communist party came into power. Mao clearly stated that “Chinese socialism is founded upon Darwin and the theory of evolution.” This statement was one of the slogans of the founding of Red China, which the Chinese masses were forced to memorize and repeat.⁸³¹

James Reeve Pusey was a professor of Chinese History at Bucknell University. In his book titled *China and Charles Darwin*,⁸³² he claims that “Mao himself confessed the most important ideological support for the communist regime in China is Darwin’s theory of Evolution.” Pusey described the great influence of Darwinism in China and how it prepared the intellectual foundations of Communism.

In short, there is an unbreakable link between the theory of evolution and communism. The theory claims that living things are the product of blind chance and provides a so-called scientific support for atheism. Communism, an atheist ideology, is for that reason firmly tied to Darwinism. Moreover, the theory of evolution proposes that development in nature is possible thanks to conflict (in other words, the “struggle for survival”) and supports the concept of “dialectics” which is fundamental to communism.

If we think of the communist concept of “dialectical conflict” which killed some 100 million people throughout the 20th century as a “killing machine,” then we can better understand the dimension of the disaster that Darwinism visited on our planet.⁸³³

In his article titled “Ideas Have Consequences... Like Murder, Tyranny, and Repression,”⁸³⁴ Daniel J. Flynn presents this argument:

When searching for examples of state-sponsored barbarities, intellectuals are quick to point to the Spanish Inquisition or its

Protestant imitation, the witch-hunt. How could anyone, modern academics wonder, persecute another for their beliefs? These same intellectuals, ironically, are often the very people who served as cheerleaders for political persecution and mass murder on a scale unmatched in human history.

The Spanish inquisition claimed slightly more than 2,000 lives during its 25-year apex between 1480 and 1505. One would be hard pressed to find any 25-day period in Russia under Stalin, China under Mao, or Cambodia under Pol Pot in which the killing was that slight. ...

In contemplating the deafening silence among intellectuals that has greeted the killing of 100 million people by Communism this century, *The Black Book of Communism's*⁸³⁵ co-author Stephane Courtois wonders, "Why has it been necessary to wait until the end of the twentieth century for this subject to show up on the radar screen?" The answer, it seems, is that academics have been engaged in "ideologically motivated self-deception for more than 80 years, refusing to believe that their ideological cousins could be capable of such diabolical crimes."

The authors estimate the century's death toll at the hands of Communist governments (excluding wars) at 100 million people, Country by country, deaths by the State in China stand at 65 million, in the USSR 20 million, Vietnam 1 million, North Korea 2 million, Cambodia 2 million, Eastern Europe 1 million, Latin America 150,000, Africa 1.7 million, and Afghanistan 1.5 million. Additionally, the international Communist movement murdered about 10,000 people throughout the world.

An historical work of landmark importance, *the Black Book of Communism* obliterates any pretensions that Communism was an inherently good ideology that was occasionally perverted

by a corrupt leader, e.g., Stalin. Through previously unavailable Communist archives and past scholarship, the book meticulously documents, as its subtitle suggests, the crimes, terror and repression that existed in the Communist world.⁸³⁶

The Black Book of Communism was written by some 11 scholars. According to Flynn, the 11 leftist authors ...

...exonerate Marx for the crimes his followers carried out in what is the book's greatest flaw. What, then, do they say is at fault? The same ideas that inspired the Nazis! The roots of Marxist-Leninism are perhaps not to be found in Marx at all, but in a deviant version of Darwinism applied to social questions with the same catastrophic results that occur when such ideas are applied to racial issues.⁸³⁷

I would agree with these authors partially: Darwinism (but not a deviant version of it) is clearly to blame, but Marx's thought is certainly to blame as well. Marxism, in its Soviet, Chinese, Cambodian, Vietnamese, Cuban, African and other variants, is nothing more than the logical product of applied social Darwinism.

Following up on the remark of the authors of *The Black Book of Communism*, I would like to draw the reader's attention to the application of Darwinism... with the same catastrophic results that occur when such ideas are applied to racial issues. While the calamities that ensued as a result of Darwin's racism were not quantitatively of the same order as the Nazi-Fascist-Communist aberrations, they were qualitatively every bit as hideous.

South African Apartheid.

In the aftermath of the dissolution of the repressive South African system of apartheid, it was pointed out by many that only a minority of Christian/denominations spoke out strongly against apartheid. I had the opportunity to meet at Villanova University in the USA some Irish Catholic Augustinian missionaries some years back, who had gotten in serious trouble with the

government of South Africa for being overtly critical of Apartheid. For another example, the Anglican Church in South Africa always denounced apartheid as a “heresy.” However, “the largest denomination, the major denomination, the Dutch Reformed Church, which functioned almost as a ‘State Church,’ was for some years a compliant partner in many government policies.”⁷¹ At the very least, however, this same church/state relationship served to avoid having most South Africans taught evolution in schools.

Although it is true that racial “separateness” was practiced in South Africa, and elsewhere in Africa under British and other European colonial rule well before Darwin’s writings, it apparently germinated into a particularly virulent form in South Africa. At least as early as the 1920s, General Jan Smuts was practicing some repressive policies towards the black Africans. To justify his actions, he wrote a book titled *Holism and Evolution*.⁸³⁸ He tried unsuccessfully to unite God and evolution, something that the Bible does not bear out, of course.

In later years, the “architect of Apartheid” was Dr. Hendrik Verwoerd (1901-1966, Prime Minister from 1959-1966). He had done his psychological studies in prewar Germany, where he had fallen into “racial hygiene” theories and politics of the Nazis which, of course, were inspired by Darwin and his disciples, Haeckel, Nietzsche, *et al.*⁸³⁹

Carl Wieland visited South Africa after it disassociated itself from Apartheid policies. To his surprise, some persons were attempting to promote evolution, even in Universities and Christian seminaries, as a supposed “cure for racism!” The media had been hyping “the cradle of humankind.” This is the name given to an area around Johannesburg where some skeletal remains were found, allegedly “ape-men.” Wieland was able to respond to South Africans about this problem:

- ✦ It was obviously absurd to try to heal racism with something (evolution) which had historically (and logically) fueled it.
- ✦ The Notion that humans had evolved in Africa was age-old and had if anything contributed to the denigration of the African in

the minds of Europeans. (The subliminal message absorbed was that Africans, being geographically closer to the site of their ape ancestors, were thus also biologically closer to apes.)

- ✦ The two prime “exhibits” of the “Cradle” fossils are examples of *Australopithecus africanus*. However, evolutionists are speculating that *A. afarensis*, such as “Lucy,” and not the *A. africanus* are more likely the “missing links.” Actually, there are even evolutionary experts who regard all of the Australopithecines as not being human ancestors.
- ✦ Detailed anatomical studies by such evolutionary authorities as Charles Oxnard, using multivariate computer analysis, show that their features overall do not group “in-between” apes and humans, but are further away from these groups than apes and humans are from each other.⁸⁴⁰

Carl Wieland concluded that “...the cure for evolution-inspired racism in any country is not more evolution, but a realization of the biblical truth that we are all immensely closely related and equally made in God’s image. And we all need to come into a right relationship with our Creator through faith in the lord, Jesus Christ.”⁸⁴¹

Australian Aborigines.

The advance of early evolutionary racist ideas started a search for “missing links” in Australia and, according to Carl Wieland, “this trade really ‘took off’ with the advent of Darwinism.” He reports that an Australian reporter, David Monaghan, writing in the 1990s, researched in both Australia and Britain the trade in some 10,000 dead aboriginal bodies that had been shipped to British museums where scholars were anxious to prove that they were “missing links.” Monaghan put together a television documentary titled “Darwin’s Body Snatchers,” which aired in the U.K. on 8 October 1990. It should also be noted that his research uncovered that Washington’s Smithsonian Museum was involved in this same search for “subhumans,”

and the Smithsonian has the remains of some 15,000 persons of several races.⁸⁴² According to Wieland's report, taken largely from Monaghan's:

- ✦ Some of the top scientists involved in this "grave-robbing" trade included Sir Richard Owen, Sir Arthur Keith, and Charles Darwin himself. It seems that museums were not only interested in bones but in fresh skins as well because they would make interesting evolutionary displays when stuffed. Pickled aboriginal brains were also in demand, said Monaghan, as there were efforts to prove that they were inferior to those of white persons.⁸⁴³
- ✦ Good prices were offered for specimens and, as Wieland claims, "there is no doubt from written evidence that many of the 'Fresh specimens' were obtained by simply going out and killing the Aboriginal people. The way in which the requests for specimens were announced was often a poorly disguised invitation to do just that. A death-bed memoir from Korah Wills, who became mayor of Bowe, Queensland, in 1866, graphically describes how he killed and dismembered a local tribesman in 1865 to provide a scientific specimen."⁸⁴⁴
- ✦ A curator of the Australian Museum in Sydney from 1874-1894, Edward Ramsay, was very much involved in this trade. He even published a museum booklet that "...put Aborigines under the designation of 'Australian Animals.' It also gave instructions not only on how to rob graves, but also on how to plug up bullet wounds in freshly killed 'specimens.' Many freelance collectors worked under his guidance. Four weeks after he had requested skulls of Bungee (Russell River) blacks, a young scientist student sent him two, announcing that they, the last of their tribe, had just been shot. In the 1880s, Ramsay complained that laws recently passed in Queensland to stop Aborigines' being slaughtered, were affecting his supply."⁸⁴⁵
- ✦ A missionary, Lancelot Threlkeld, was a horrified witness to the slaughter by mounted police of a group of dozens of Aboriginal

men, women and children. Forty-five heads were then boiled down and the ten best skulls were packed off for overseas.⁸⁴⁶

Australian separation policies have since been discontinued, since the 1960s, fortunately. More often as not, bad actions follow bad ideas. Social Darwinism is the implementation of a faulty philosophy of science, and a faulty science, to human interactions and society in general. Some of the executioners in the Australian outback were undoubtedly persons of little education, but the intellectual authors—and financiers—of their deeds were usually highly educated persons whose notions had taken leave from the traditional Judeo-Christian ethics that allow for the sustained advance of science, arts and human society.

United States of America.

The serious mistreatment of Native Americans and enslavement of African Americans had begun well before Darwin's birth. Darwin in fact wrote about his hatred of slavery and contempt for some Christian pastors who favored the practice—a thought that was dissonant with his obvious contempt for primitive peoples. In the case of slavery of blacks, however, mainly white Americans, along with some black soldiers, engaged in the struggle for the emancipation of the slaves. This civil war would finally cost the United States the lives of some 663,000 persons, very few of whom were slaveholders. As was true in William Wilberforce's Britain a half-century earlier, professing Christian leaders took the lead in doing away with this hideous practice of slavery which was so antithetical to the Christian moral philosophy underlying our most foundational legal documents—the Declaration of Independence and the Constitution.

Where the consequences of Darwin's thought are more pronounced are to be found in what has been called the "American Holocaust." This has to do with the 63 million unborn—or partially born—children who have been intentionally aborted, using the justification that the embryo is nothing more than a growth, similar to an extraneous cancer growth. A lead role in this movement for abortion rights is played by Planned Parenthood,

a private organization which unfortunately is funded by our American tax dollars, whether or not we taxpayers consider this to be the immoral, intentional destruction of innocent human beings. It would be well to have a look at the genesis of Planned Parenthood.

The founder of Planned Parenthood was Margaret Higgins Sanger, who grew up in the USA as the daughter of poor Irish immigrants. While her mother was apparently a decent, moral woman, her father was not a good role model. Margaret, from the time of her adolescence, led a dissolute life, and declined her mother's good faith attempts to get Margaret to follow Jesus. Margaret was a secularist and was influenced by the thought of Germany's Dr. Ploetz, who founded the Society for Racial Hygiene. Sanger was also a founder of the American Eugenics Movement.⁸⁴⁷

Eugenics was also known as "Race Science," and postulated that humanity can be improved by selective breeding. The phrases which sum this up best are: "More from the fit and less from the unfit," and "To build a race of thoroughbreds." Both statements were formulated ...by Margaret Sanger...and they precisely stated the aims of the Social Darwinist movement which viewed "inferiors" (non-whites and those Caucasians who were considered to be "white trash," (Irish Catholics, etc.)) as no better than bugs who had to be stepped on, sprayed for, and killed lest they overrun their "Superior" masters due to sheer numbers. For it was the eugenics movement (founded by the Social Darwinists) that created not only tactics such as sterilization (without their permission or even knowledge) of non-whites within the United States and laws to prevent the intermarriage of different races (in order to protect, as a doctrine of the Social Darwinists, the "purity" of the races) but they additionally inspired the most well-known example in history of the practical application of Social Darwinism—the race science program of Nazi Germany.⁸⁴⁸

Sanger drew upon writings from socialists and eugenicists. She published articles from Adolf Hitler's Director of Eugenic Sterilization, Ernst Rudin, and spawned "the Negro Project," her strategy for eliminating the black population.⁸⁴⁹ She once wrote to her supporters, "We do not want the word to get out that we want to exterminate the Negro population."⁸⁵⁰

Sanger was financially assisted by the Social Darwinists of the business world, the Rockefellers and the Harrimans [who stated their energetic approval of Darwinism and the "survival of the economic fittest"]. Many of Sanger's supporters and colleagues were supporters of eugenics.⁸⁵¹

At a March 1925 international birth control gathering in New York City, a speaker warned of the menace posed by the "black" and "yellow" peril. The man was not a Nazi or Klansman; he was Dr. S. Adolphus Knopf, a member of Sanger's American Birth Control League, which along with other groups eventually became known as Planned Parenthood. Perhaps supporters of Planned Parenthood would be less enthusiastic if they knew of the beliefs of its founder, Margaret Sanger, and her colleagues.⁸⁵²

Our "politically correct" media in the United States are not telling us about the underlying philosophy and history of Planned Parenthood. Some African Americans, however, are becoming aware of this agenda, and have pointed out that, while they constitute only 12% of the American population, some 35% of all abortions are of black children.⁸⁵³

In 2002, a lawyer in Missouri filed a federal lawsuit against Planned Parenthood for their failure to fully inform women about abortion. This lawyer also agreed that Planned Parenthood is a racist organization that targets minority women.⁸⁵⁴ Furthermore, African American Louisiana State Representative Sharon Weston Broome charged in 2002 that "Darwin's ideas on how humans evolved are racist and the key reason for race problems, [and] provide the main rationale for racism ... If evolution has provided the main rationale for racism, and we are teaching our children evolution in schools, then correspondingly, we are teaching them racist principles."⁸⁵⁵

A great deal more very important information has been documented about Margaret Sanger and Planned Parenthood. One excellent reference is George Grant's book titled *Grand Illusions: The Legacy of Planned Parenthood*.⁸⁵⁶ All Americans should take the time to research this aspect of Social Darwinism and respond conscientiously.

In addition to the destruction of the unborn, or partially born, America is now witnessing more and more cases of infanticide and euthanasia of the sick and elderly. Furthermore, some of the medical and research establishments are pushing for legalization of "embryonic stem cell research." This involves the destruction of unborn human beings for the furtherance of science. It seems not to matter to its proponents that, thus far, there are no cases where embryonic stem cell research has resulted in cures for humanity, while adult stem research has rendered thousands. This all seems to be very much in the tradition of Joseph Mengele and the Nazi Social Darwinists. The proponents of embryonic stem cell research can feel free to call for this legalization because, for the social Darwinists and Secular Humanists, there is no moral dilemma; morality is whatever we people decide that it is today; and that might not be what we decide it is tomorrow. They also hold that truth is relative; it is what we decide it is today, and that might not be the same tomorrow. This is all culminating in what Pope John Paul II, and others, have rightly called "The Culture of Death."

Darwinian Art and Science.

Kenneth Clark wrote in *Civilisation* in 1969, that art was a major driving force in cultural evolution. J. Bronowski in his book titled *The Ascent of Man; A Personal View*,⁸⁵⁷ later made into a 13 series TV documentary titled "The Ascent of Man," holds an opposing evolutionist view. According to Bronowski, the cultural evolution of mankind centered around science. This is all the more surprising in view of the fact that Dr. Bronowski was of Polish Jewish origin, and the 15 or so persons who participated in the Wannsee Conference on January 20, 1942, in which the "final solution

for the Jews” was planned, were, with the exception of Hitler himself, recognized scientists and scholars with doctorate degrees.⁸⁵⁸

Moreover, following the matter of evolutionary art, I would like to present here a few examples of it. There is a very beautiful statuette, about 39 inches high, done in wax by Edgar Degas, the French precursor to Impressionism. Degas was influenced by the critic Duranty, the exponent of the aesthetics of naturalism. Degas was an extremely talented painter and sculptor who dedicated his life to art. The statuette, titled *La Petite Danseuse de Quatorz Ans* (The Little Fourteen-Year-Old Dancer), was done with great talent. It was done in wax, silk, satin ribbon and hair. It is maintained to this day with great care. When first exhibited in 1881, it was made of tinted wax and dressed in real clothes. The statue was supposed to have been exhibited quite some time before, but there was a delay. The delay was caused by Degas’ going over repeated changes to the head of the *danseuse*, so as to make it more atavistic, more “ape-like.” This was in recent years confirmed by special tests that show the changes that were introduced after the initial sketches. Critics point out that Degas and other Parisian painters and sculptors of his time were faced with the challenge of integrating their naturalistic/evolutionary thinking into their works. If what is physical is all that there is, then, how to depict this? Martha Lucy explains the dilemma:

If the classical body is a repression of man’s baseness, then the evolutionary body is a return of that which has been repressed. And if the classical nude represents pure form, intellect, rationality—a Cartesian rejection of the corporeal—then the evolutionary body figures the subject as hopelessly bound to his corporeality. What Degas seems to have staged in his revision is subjectivity not merely destabilized but reconstituted as purely corporeal. He exchanges form for its base other, displacing the ideal with an evolutionary, and altogether modern, body.⁸⁵⁹

One reporter states that the young model for this *danseuse* was going to a ballet school where poor girls were admitted due to the generosity of

the ballet teachers. Her mother permitted her to be a model for Degas, and there is no suggestion of sexual impropriety. However, she was not physically as atavistic as the statue finally depicted. How dehumanizing it was for her to be remembered in posterity in such an aberration! It was a disservice to the model and her mother. No wonder it took Degas some time to work up the abominable courage to put this statuette on display! It certainly had shock value then, as it does now—similar perhaps to that of viewing the nice looking young German boy in the film “Cabaret,” singing “The Future belongs to me,” who, only in the very last part of this “take,” is shown full length, dressed in a Hitler Youth uniform!

Degas also did some paintings in this same vein. One of them was his *Young Spartans*. In many ways, the adolescent boys and girls appeared to be physically more like 19th century Parisian youngsters, but with a curious alteration.

What is striking, first of all, is how centrally *animality* figures into Degas’ reconceived bodies. These Spartan youths are not just unidealized but are aggressively “bestial,” their features resembling those of *The Little Dancer*, which outraged critics called atavistic and monkey-like. ... The most striking pronouncement of animality, however, is articulated not through anatomy but through pose... [The figure on all fours], in the final version, all ambiguity dissolves and the figure is fully in view as a quadruped with knees and palms planted squarely on the ground. The back is now flexed, a position that signals animal alertness and base instinct rather than high-minded Spartan physicality. Athleticism has translated into animality...

Degas’ *oeuvre* reveals a continual, almost obsessive, play with the signs of animality, a fascination for the ways in which human and animal seem to slide into one another. Bathers and prostitutes scratch and paw at themselves; they are lumbering beings unselfconsciously attending to their bodies and displaying their

wares, betraying a sexuality that is base, instinctive, aggressive. Gustave Geffroy remarked in 1886 that Degas depicted women “in animal terms alone, like high-class illustrations for a zoological treatise.”

Anthea Callen in *The Spectacular Body* reveals how “the languages of science and medicine, including theories of evolution and degeneration, were absorbed into representation and encoded onto the body. Looking closely at a series of preparatory studies made for the sculpture, she demonstrates how the figure’s face and head become increasingly atavistic as the sequence progresses, the end result being an emphatically primitive cranium.

Callen also points out that animalistic anatomy and atavistic skull type were indications of a person’s low ranking on the evolutionary scale; from this, conclusions about his or her innate criminality, predisposition toward vice, or generally low social ranking could be inferred. It was a complex signifying system in which separate signs reverberated endlessly back and forth and were bound up in one another: animality signified criminality signified lower evolutionary state.⁸⁶⁰

In view of the re-definition of the human person due to Darwinism and similar 19th century writings, it is of course well worthwhile to study the works of such twentieth century thinkers as Martin Buber, author of *I and Thou*, Viktor Frankl, author of *Man’s Search for Meaning*, Dietrich Bonhoeffer, author of *Ethics* and *Letters and Papers from Prison*, and others who strove, against all odds, to regain rationality and a renewed definition of human dignity and life together. The one other book that needed to be rediscovered after the horrific implementation of Social Darwinism, in all its social re-engineering variants, is the Word of God in Scripture. The application of Biblical truth does not lead to what Darwinism leads. The Bible states in Galatians 5:22-23: “But the fruit of the Spirit is love,

joy, peace, longsuffering, kindness, goodness, faithfulness, gentleness, self-control. Against such there is no law.”

Let us hope and pray that these early decades of the 21st century will go down in history as a period during which educated Christians will openly profess their faith, with reasonable up-to-date justifications, for the betterment of ourselves, families, communities and nations—and that our collective testimonies will encourage non-believers worldwide to review carefully the legitimacy of our views. But well-reasoned arguments alone are not sufficient; we must strive to live as Jesus would have us live. Francis of Assisi once remarked, “I preach all the time, and sometimes I use words to do so.” In our own strength, we cannot achieve this—we can only live up to this high ideal by the favor (grace) of God: “For I through the law died to the law that I might live to God. I have been crucified with Christ: it is no longer I who live but Christ lives in me, and the life which I now live in the flesh, I live by faith in the Son of God who loved me and gave himself for me.” (Galatians 2:19, 20).

Epilogue: Word of God (*Ho Logos/Ha Dabar*)

(From a message given in the Coral Ridge Chapel)

Believers know that there are no meaningless details in the Bible. They all meant something to God and to the Jewish hearers of the Word. The New Testament titles for Jesus all meant something special to Jesus' followers who knew the *Tanakh* (Old Testament) and the notion of God's salvation and redemptive work in human history.

There are several types of titles for Jesus in the New Testament, all of which are present in the Old Testament also, that have to do with (1) His incarnate earthly work, such as PROPHET, SUFFERING SERVANT OF GOD, HIGH PRIEST (2) the Returning Jesus, such as MESSIAH and SON OF MAN, (3) the present Jesus, in which he is now working as our LORD and SAVIOR, HEALER AND REDEEMER, and (4) there are "pre-existing" titles for Jesus, such as Jesus, SON OF GOD, and Jesus, THE WORD.

Tom DeRosa once pointed out once that in Genesis, it is written six times that *God created*, but twelve times it is written that "*God Said*." It is worthwhile to reflect on why it would be important to emphasize the spoken Word of God in addition to His creative acts.

The New Testament tells us that when Jesus was challenged by Jewish authorities to tell them by what authority He did what He did, He answered with a question. Quoting Psalm 110:1, He said: "The Lord said to My Lord,

sit thou at My right hand until I make thy enemies thy footstool!" Jesus was calling Himself Lord. In Philippians 2:5-11, it is written that "Jesus Christ is the Lord, to the glory of God the Father." If Jesus was Lord, then all other titles for God are His, under this title of Lordship.

Jesus' earthly activity is the central event: it became the temporal center of a line of salvation running both forward and backward. Since Jesus' life and action represent the highest form of God's self-communication, other divine revelations must be related to it, for there can be no revelation of God essentially different from revelation in Christ. Revelation can be extended back to creation.

In the Prologue of John, everything said about the beginning of all things is seen from the statement, "And the Word became flesh and dwelt among us," (John 1:14). When this is retained as the center of the Messiah event, it is also possible to speak about the pre-existent Christ and His relation to God, and of the invisible present "Lord" without falling into error.

Christ is God's own self-communication to us. In the life of the incarnate Messiah, God's revelation actually becomes tangible. John 1:14 says, "We have seen His glory, which is the glory of God Himself." In John 1:1 ff, John tells us we could apprehend it with all our human senses. Jesus' human life and atoning death present the revelation of God as His decisive action. Then all of God's revelation on both sides must be related to this center in Jesus, the crucified and risen Messiah.

This identification of Jesus with the Word of revelation concludes at the end of John's Gospel, where Jesus had communicated Himself already in creation and in all further redemptive events. In John's Gospel, the doubting friend, Thomas, says, "My Lord and my God!" Jesus, as the revealing Word of God, made clear the continuance of the work of creation and of redemption. God as creator and Jesus as redeemer, being together as God's *communication of Himself* to the world. Christ's atoning death has even cosmic results (Colossians 1:20): "For it pleased the Father that in (Messiah) all the fullness should dwell, and by Him to reconcile all things

to Himself, by Him, whether things on earth or things in heaven, having made peace through the blood of His cross.” This is in response to Paul’s statement in Romans 8:18-23:

For I consider that the sufferings of this present time are not worthy to be compared with the glory which shall be revealed in us. For the earnest expectation of the creation eagerly waits for the revealing of the sons of God. For creation was subjected to futility, not willingly, but because of Him who subjected it in hope, because creation itself also will be delivered from the bondage of corruption into the glorious liberty of the children of God.

For we know that the whole creation groans and labors with birth pangs together until now. Not only that, but we also who have the first fruits of the Spirit, even we ourselves groan within ourselves, eagerly waiting for the adoption, the redemption of our body.”

The Word –(*ho Logos* ‘ὁ λόγος’ in Greek) and *Ha Dabar* (דָּבָר הַ in Hebrew) as a title for Jesus, only appears in John’s Gospel and in Revelation in the New Testament. For John, the beginning lies in the pre-existence of Jesus, which directs our attention to the absolute beginning of all things. He speaks of the beginning only in the closest connection with what he says of the further work of Christ. He who was “in the beginning with God,” is just the same one whose story the whole Gospel tells, whose life “in the flesh” is the center of the history of divine revelation and salvation. Therefore, the history of His pre-existent work arises too. Jesus did not appear from nowhere. John emphasizes the participation of the pre-existing Messiah in creation. The Gospel of John starts, quite intentionally, with the same words as Genesis in the Old Testament: IN THE BEGINNING...God created heaven and earth: IN THE BEGINNING WAS THE WORD...and all things were made through Him. John gives us, in his first Chapter, a new creation account, now presented in the light of the Mediator of Revelation.

In the Old Testament, *Word of God* is used, although it is not yet personified. His Word is the side of God turned toward the world. In Psalm 33:6, “By

the word of the Lord, the heavens were made.” In theodicy, we learn that whatever God *has*, God *is*. In the creation event too, God’s command (Word) calls nothingness to life. Thus, the psalms speak of the word of God as the Mediator. In Psalm 107:20, “He sent forth His Word and healed them.” Jesus’ name in Hebrew (Yeshua יֵשׁוּעַ) means, “God saves, and God heals.” Then in psalm 147:15, “His sends forth His command to the earth: His Word runs swiftly.” In Isaiah 55:10, “For as the rain and the snow come down from heaven, and return not thither but water the earth, ...so shall My Word be that goes forth from My mouth: it shall not return to me empty, but it shall accomplish that which I purpose.”

The word that Jesus preached, in John, shows that Jesus not only brought revelation; His person *is* revelation. He brings light and *is* light; He bestows life and *is* life. He proclaims truth and He *is* Truth. So it is with God’s eternal revelation. In John, the word of Jesus is the truth as such, but Jesus Himself is the Word/Truth in person (John 17:17: 14:6).

In the prologue to Hebrews is written, “In many and various ways, God spoke of old to our fathers by the prophets, but in these last days, He has spoken to us by a Son.” Paul also mentions in the same sentence the creation of the world through the Son, and the next verse says this Son “reflects the glory of God.”

John’s Gospel portrays Jesus’ words and actions. Jesus Himself *is* what He says and what He does. He “walks His talk perfectly.” The Hebrew word for “words” is *dabarim*. This is also the Hebrew word for “history.” Therefore, there is a close connection between the speaking of God being recognizable as God’s actions: and between all of revelation and the historical life of Jesus. It is therefore natural to refer to His creative word through which He communicated Himself already at the beginning.

John’s whole presentation of the life of Jesus starts with the words of Genesis’ creation story. It starts in fact with the pre-existent Jesus and, even there, John is thinking of the function of this Word—His action. God’s self/revelation consists in action. Jesus was not created from nothing, or an

emanation. The Word of God with God Himself and was God. The Logos is God in His revelation, "And the Word was God." At the conclusion of John's Gospel, this is confirmed when the (now) believing Thomas says to the risen Jesus, "My Lord and My God." With this final decisive "witness," the evangelist John completes a circle and returns to His prologue, serving as a "story within a story within a story," but with meaning (*logos*), rather than the meaningless existentialist "story within a story within a story" of Gabriel Garcia Marquez's *Cien Años de Soledad*. Creation and redemption belong together as events of salvation, thus the importance of the name Yeshua.

Paul explains that the Messiah is the mediator of creation. In 1 Corinthians 8:6 he writes "To us there is one God, one Father, from whom comes everything and by whom we live, and one Lord Jesus Christ, by whom are all things, and we by him. Paul also describes Jesus as the Image of God, and this is related also to the Son of Man concept Paul writes of in Philippians 2:6ff. Here we see the contrast between (1) the obedience of the Messiah as the pre-existent image of God and (2) the disobedience of Adam, who was created in the image of God. Jesus, as the revelation of God, includes His glory. Earlier manifestations of God were limited, for example, the cloud and pillar of fire, Bethel and the temple *Shekeina* glory. In Jesus, the divine glory became visible as a man.

In the First letter of John 1:1, Jesus is called the "Word of Life." In the last book of the Bible, Revelation 19:13, Jesus is called the "Word of God," (He was clothed in a robe dipped in blood, and His name is called, "The Word of God.") as an "end-times" revelation. This view dominates the whole Gospel of John, but the prologue leads us back in the direction of the very farthest limit of revelatory history in the past when, already before creation, the Word was with God. Paul, in 1 Cor.15:28 leads us with the Son of God concept forward to the farthest limit of revelatory history at the end when the Son, having subjected all things to the Father, subjects Himself also, so that God becomes "all in all."

These thoughts being us into present time and the elucidation of Intelligent Design and the Intelligibility of the World, as relative to the Genesis account where it says six times that *God created* and twelve times that *God Spoke*.

William Dembski, mentioned earlier in this book, is a believer. He also holds a PhD degree in Philosophy and another PhD in Mathematics. He furthermore holds advanced degrees in Psychology and Theology. In Mathematics, he specialized in the applicability of math to communications theory. This has applicability to our Christian philosophy of science and understanding of order and logic and reason in the universe; in short, the intelligibility of the world. *God was the intelligent agent who created the universe. He is also the one who makes the world intelligible.* As God increasingly orders the world through the process of creation, the number of things that can be conceptualized increases and the values assigned to things become refined. The world is thus not merely a place where God's intentions are fulfilled but also a place where God's intentions are intelligible. That intelligibility is as much moral and aesthetic as it is scientific. In God, what is, and what ought to be, are united as in God's original intention at the creation. Contrasting to this view is naturalism. Within naturalism, the intelligibility of the world must always remain a mystery. Within theism, anything other than an intelligible world is a mystery.

God speaks the divine *logos* to create the world and thereby renders the world intelligible. The Creator endowed us with human language to help us understand God Himself and His creation. Human language is not an evolutionary refinement of grunts and stammers formerly uttered by some putative apelike ancestors, as depicted by some science fiction writers dogmatically speculating about ancient Africa. We humans are, all of us of all races, of the same blood, and are creatures made in the divine image. Human language is therefore a divine gift that mirrors the divine *logos*.

Our worldview is that human language is a divine gift and through it we are freed from the naturalistic worldview which is devoid of transcendence. The fact that creation proceeds through a divine spoken word has deep

implications not just for the study of human language but also for the study of human knowledge, or what philosophers call epistemology.

Einstein once said, “The most incomprehensible thing about the world is that it is comprehensible.” For naturalism, the riddle is how we can have any knowledge at all. They have no solution.

We theists know we have knowledge, but we must answer why our knowledge is prone to error and distortion. The Judeo-Christian attributes this problem to *the Fall* of man. At the heart of the Fall is alienation. People lie to each other and to themselves. Appearance and reality are “out of synch.” The problem of epistemology within the Judeo-Christian tradition is not to establish that we have knowledge but rather to root out distortions that try to overthrow the knowledge.

We believers are also fortunate that we believe that creation proceeds through a spoken word, because we have a coherent system of ontology. This is the part of philosophy that deals with the fundamental constituents of reality. According to naturalism, the world is fundamentally an interacting system of mindless entities, such as: particles, strings or fields, etc. We know this is backwards.

If creation and everything in it proceed through a divine spoken word, they don't fall silent at the moment of creation. Rather, they continue to speak. Dembski gives an example of a blade of grass. You look at it and it communicates with you. In the light of the sun, you see it as green, that it has a certain texture. It communicates something else to the bug that wants to eat it. It communicates still something else to the particle physicist intent on reducing it to its particulate constituents. But this blade of grass is more than any arrangement of particles and is capable of communicating more than is inherent in any such arrangement. Its reality derives not from its particulate constituents but from its capacity to communicate with other entities in creation and ultimately with God Himself.

So therefore, the problem of existence, according to Dr. Dembski, is to be in communion first with God and then with the rest of His creation.

It follows that **the fundamental science that needs to ground all other science, is communications theory**, and not, as it widely taught, an atomistic, reductionist and mechanical science of particles, strings or other mindless entities, which then need to be built up to even greater orders of complexity by equally mindless principles of association, known erroneously as natural law.

Communications Theory's object of study is not particles, but the information that passes between entities. Information is another word for Logos, just as is the word "meaning" or "intelligence." The problem with naturalistic science is that it has no resources for recognizing and understanding information. Doctors Paul Johnson and William Dembski and others in the Intelligent Design movement have developed the specified-complexity criterion for recognizing information.

All this information is mediated from the Divine Logos, who is before all things and by whom all things consist. God did not stop interacting in the world after creation, as the deists supposed. God acts now in the world by dispensing information. This even has scientific content. Some examples are:

- The fine-tuning of the universe and irreducibly complex biochemical systems are instances of specified complexity and signals information imputed by God at its creation.
- Predictive prophecies in Scripture are instances of specified complexity and signal information imputed by God as part of His sovereign activity within creation.
- Language communications between humans is an instance of specified complexity and signals information transmitted from one human to another. The positivist science of the 19th and 20th centuries was incapable of coming to terms with information. The science of the new millennium will not be able to avoid it.

We already live in an information age. Let's thank God for his *Logos*, which gives us understanding and meaning in our individual lives and in our

universe. And, to use another New Testament Greek word, *koinonia*, was used to describe the Christian community. It means the *communicating community*, and this is what the *life together* of the Messianic community should be. This is what Jesus referred to when He stated, “Take My yoke upon you and learn from Me, for I am gentle and lowly in heart, and you will find rest for your souls, for My yoke is easy and My burden is light.” (Matthew 11:29, 30).

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