SCIENCE AND CHRISTIANITY

Key question

How are we to understand the significance of the Biblical creation narrative?

Key text

Psalm 8

"O Lord, our Lord, how majestic is Thy name in all the earth, who hast displayed Thy splendor above the heavens!"

Introduction

1. The relationship between science and Christianity is complex and often misunderstood.
2. In an article published in the Raleigh, N.C. News & Observer (March 21, 1999) Gregg Easterbrook – (senior editor a the New Republic) offers several reasons for the renewed interest in harmonizing science and religion.
   - Science was expected to disprove God, but didn't.
   - The Big Bang is looking more supernatural all the time.
   - Science is raising questions that science can't answer.
   - Religion is getting real about evolution.
   - Postmodernism is running out of gas.
   - This stuff is interesting.
3. Why has modern science displaced religion in our culture?
   a. The dramatic developments in technology in the last few years have born witness to the power of science to understand and change the world as we experience it.
   b. The destructive religious wars of the middle-ages in Europe have influenced the new world to shy away from religion in the public square.
4. Much of the contemporary tension between "science" & "religion" is misrepresented and can be corrected if a number of points will be respected. The following notes are offered to that end.
5. The purpose of these notes is not to disprove evolution or prove some form of intelligent design but rather to raise questions that would give credibility to an open, honest debate of the facts and theories from a posture of humility.

A. **Ten key assumptions of science.**

1. **The cosmos is orderly.**
   a. The historic origin of modern science grew out of two presuppositions:

1. Nature (creation) is the work of an orderly Creator and is therefore predictable and internally consistent.
2. Human beings are sufficiently detached or removed from nature to be able to discover genuine truths about its operations. Man, the observer, is not entirely immersed in nature, the observed.

b. These presuppositions were grounded not in pantheistic Eastern worldviews but in Western Judeo-Christian philosophy.
   1. Nature is sustained by the power of the Creator.
   2. Man is made in God's image and while sharing a body that is closely linked to nature, he is nonetheless distinct in spirit.

c. It has been argued that modern science presupposes a Biblical worldview.
   1. How can we be objective if as naturalists we have rejected the very basis upon which to believe in objectivity, that is a Judeo-Christian worldview?
   2. And if we cannot in fact be truly objective, then who is to say what is science or, for that matter, anything else?

2. **People are capable of being rational observers of the physical world.** The scientific method of discovering truth is based on the correct assumption that man can observe empirical facts and formulate accurate and testable deductions (theories) from the facts observed.
   a. It is understood that as the volume of facts on any question increases and new understanding of known facts progresses, theories may have to be altered to remain consistent with the empirical observations.
   b. Authentic science is a particular way of knowing, based on descriptions of the world obtained through the human interpretation of publicly observable data obtained by sense interaction with the natural world, and theoretical explanations that are reproducible through experimentation.
   c. In the past one hundred years naturalism has come to be equated with science in many circles.
      1. Man has come to be seen in his entirety as a creature of nature, and all assertions with respect to his transcendent capacities are peremptorily denied. If this view of man is to be played out consistently, the very basis of objectivity (so vital to science) is an illusion.
      2. Modern man is described (by naturalistic scientists) in deterministic and relativistic terms.
         a. He is seen as a being completely subject to the chain of cause-and-effect that runs throughout nature, possessing no free will.
         b. There is logically then, no distinction between the victim and the victimizer in society, for we are all hopeless products of natural forces beyond our control.
         c. If this is true, then Western notions of reform - political, psychological or economic - are little more than naive posturing.

3. **Science is limited in its scope of understanding.**
   a. **A limited sphere of inquiry.**
      1. Science continually raises philosophical questions that go beyond the competence or purview of science. The origin and purpose of life is an example.

2. Science, by definition, restricts its sphere of understanding to the physical realm and to "natural" processes. This by definition excludes questions like the origin of life (if it had a supernatural source).

b. **A limited sphere of data**

1. In science, most conclusions are held tentatively. It is seldom that all the data can be observed, tested and or harmonized.
2. In science, all relevant information, including lack of evidence, must be taken into consideration when drawing conclusions. Questions about life's origin are plagued with tremendous gaps of knowledge.

c. **A limited sphere of certainty**

1. In science, tentative conclusions should be stated in tentative form. There are few "laws" in science that are unqualified.
2. The confidence expressed in any scientific conclusion should be directly proportional to the quantity and quality of evidence for that conclusion. The theory of evolution where humans descended from simpler forms of life (apes) is an example of over statement.

d. **A limited sphere of objectivity**

1. As mortals, we are not always as objective as we would like to be. Mistakes in logic can and will be made.
2. The scientific community is not exempt from the social and political forces that can drive certain conclusions even when the data is not in support of those conclusions.
3. In *"The Soul of Science,"* Charles Thaxton shows that science is always driven by philosophical and religious motivations.
4. "Seeing is not believing …What we learn from experience depends on the kind of philosophy we bring to experience …The result of our historical inquiries thus depends on the philosophical views (the a priori assumptions) which we have been holding before we even begin to look at the evidence." C.S. Lewis in *Miracles*

4. **Scientists must take responsibility to guard the boundaries of science from invasion by religion and political ideology**.

a. In centuries past, science's boundaries were continually threatened with invasion by the forces of institutionalized religion. (Galileo and Copernicus in the 17th cent.)

b. **Religious knowledge can be used to construct a scientific theory but not to support it.**

1. In science it doesn't really matter where ideas come from. What matters is the kind of evidence that supports those ideas.
2. A **distinction** must be drawn between the role of philosophical or religious concepts in forming a theory, and the injection of these concepts as part of the mechanisms of the theory.
   a. Good science allows the use of philosophical or religious concepts in the formation of a theory.
   b. Good science does not permit them to be a part of the proof or evidence supporting the theory.

5. **Science continually raises philosophical questions that go beyond the competence or purview of science.**

a. **Science cannot address questions that lie outside the realm of the natural.** Science is the study of nature. To offer an **opinion concerning what lies outside** natural phenomena, as we know it, is to step outside the scientific realm.

b. While natural science can fruitfully investigate the formation of various structures within the physical world, **it is incapable of dealing with the ultimate origin or purpose of the universe.**

c. While natural science can fruitfully investigate the behavior of the physical universe, **it is incapable of settling the fundamental question concerning its governance.**

d. Science and theology are **two complementary disciplines, seeking to answer different types of questions.**

1. Science deals with "how" (mechanisms) and theology with "why" (meanings).
2. Thus scientific discoveries alone cannot be used to give answers to the "why" questions. Other non-scientific considerations have to be introduced as well.

e. **The existence of a scientific explanation does not eliminate the need for a theological one**.

1. Scientists, quite rightly, leave God out of their theories, since they are not concerned with metaphysical causes. Science deals only with secondary (not primary) causes.
2. One area in which we cannot leave God out, is the area of the origin of things. Here God will be encountered at some point, if He exists. Therefore, by asking, "How did things begin," the scientist is putting himself in a position where he must remain open to non-scientific considerations.
3. As Christians, we must remember that the God of creation is the God who has given us prepositional revelation in the Bible.
   a. Therefore, we expect the Bible, rightly interpreted, to agree with observable facts rightly interpreted.
   b. The Bible is not a scientific textbook. Its language is popular, phenomenal, and culturally based. With regard to the physical world, it discusses the meaning of events without discussing the mechanism behind them. It is not unscientific, but non-scientific.
4. In seeking to understand life and truth we must be willing to listen to both science and Scripture while respecting the unique nature of each.

6. **Strictly speaking the answer to the question of origins lies outside the scope of science.**

a. In *Darwin on Trial*, Phillip E. Johnson argues – *"Neither evolution nor special creation can be proven but each must be taken by faith."* Johnson means that both views rest on assumptions that are held by faith.

b. *"Evolution in general is believed, affirmed and taught not because it is proved, but because the alternative is unacceptable."* Julian Huxley

c. How are we to understand the relationship between science, evolution and origins? Some scientists have made a distinction between two spheres of scientific hypothesis.

1. **OPERATION SCIENCE** deals with the ongoing life processes that can be observed and verified through testing.
2. **ORIGIN SCIENCE** (a forensic science) deals with processes that can not be replicated and are therefore not open to confirmation or refutation on the basis of tests.

d. "Any scientific hypothesis on the origin of the world, such as that of a primeval atom from which the whole of he physical world derived, leaves open the problem concerning the beginning of he Universe. Science cannot by itself resolve such a question: what is needed is that human knowledge that rises above physics and astrophysics and which is called metaphysics; it needs above all the knowledge that comes from the revelation of God." *Pope John Paul II*

7. **Theories must be critically reviewed**. They are judged by:
   a. Agreement with known facts,
   b. Testability (an untestable theory is scientifically worthless), and
   c. *Occm's Razor*: The best theory is the one requiring the fewest assumptions.
8. **In science, all relevant information, including lack of evidence, must be taken into consideration when drawing conclusions.**
   a. While it is sometimes necessary to simplify and summarize data and theory it is not honest to avoid significant problems with the data. This is especially true when dealing with a subject like origins where the implications are significant.
   b. A good scientist gains credibility when she or he is able to identify the weaknesses in a theory as well as the strengths. A scientist losses credibility when she or he suggests that the case for a theory is stronger than it really is. This is often illustrated in the way in which the modern evolutionary principle is taught.
9. **In science, tentative conclusions should be stated in tentative form.**
   a. The frustration that many people have with the evolution / creation debate is with the way each side presents its position. Evolution (as an explanation of all diversity) is too often presented as a fact of science like gravity. Creation is often presented as a scientific fact having no real problems with the data.
   b. The appeal of many is for simply a fair and honest treatment of the subject in education and media.
10. **The confidence expressed in any scientific conclusion should be directly proportional to the quantity and quality of evidence for that conclusion.**

    Anthropologist Richard Leakey observes, "When considering our origins it is clear that we have often been less than objective." The Making of Mankind (1981)

B. **Ten helpful distinctions.**

1. STRICT SCIENCE / SOFT SCIENCE / SUSPENDED SCIENCE

a. Basic tenants of SCIENCE

Naturalism – Science can only deal with the natural material world. It cannot include in its assessments the supernatural, spiritual, or divine. In this respect it excludes traditional religious considerations although it is itself "faith" based in that it assumes by faith the validity of the basic tenants of science.

Uniformatarianism – Science works under the assumption that natural processes in the past have always behaved as they do today.

Measurable evidence – Science deals with data that can be measured in ways that are universally recognized and evaluated.

Testability – Science demands that theories or explanations be open to tests that can confirm or refute their validity. Valid theories must be capable verification through independent, public, and repeated testing.

Logic – Science uses cognitive reason to assess theories. It is inductive rather than deductive (starting with an assumed conclusion).

b. Three postures in relation to science
   1. Strict science
      a. **Principle driven** – It strictly follows the five tenants of science.
      b. Strict science takes a narrow perspective based on limited presuppositions (natural materialism) and therefore does not purport to identify all truth – especially truths that deal with the more subjective, artistic, or spiritual issues of life.
      c. Strict science deals with probability not certainty and therefore is reflected in statements like "some studies indicate that -" rather than "science proves that -."
      d. Strict science is generally limited to laboratory work and to science that is more basic and less practical in its immediate application.
   2. Soft science
      a. Soft science is the most popular view of science and is often equated with "facts" not "theories", with "science has proven -" rather than "some studies seem to indicate -."
      b. Popular media's references to science, and much of academic science (ie. social science) is not strict science that follows all the tenants above but is nonetheless strongly dependant upon factual evidence, reason, and the most probable theories.
      c. Soft science is open to including data that:
         - cannot be easily measured,
         - is not material,
         - is not testable,
         - is driven by a broad political or philosophical perspective.
      d. **Practically driven** – It does not strictly follow all five of the above tenants of science (ie. testable theory) but rather follows hard evidence and common sense reason to arrive at conclusions that are highly probable and practical.
         - **Forensic investigation** – Civil courts come to conclusions of truth and error based on the preponderance of evidence.
         - **Medical science** – Modern medicine uses a combination of pure science and practical common sense to come to conclusions that meet practical needs.
      e. **Philosophically driven** – It promotes philosophical perspectives or presuppositions under the name of science. It uses pure science when it supports the desired conclusion but suspends it when it does not serve the desired political or philosophical interests. It is not inductive but deductive.
         - **Richard Dawkins** – Chemical (the formation of life from nonliving material) and Macro-evolution (the formation of radically different life forms through natural selection over time) cannot be tested but is embraced as science because it fits a larger materialistic theory of the nature of origins.
         - **Al Gore** – Human driven global warming is represented as a scientific fact when the hard science is not conclusive.
   3. Suspended science

a. Suspended science is a lot like "philosophically driven" science above with one exception. It does not purport to be science.

b. **Faith driven** – It is an understanding of truth that may use some or many of the basic tenants of pure science but is more deductive than inductive. It views science as of limited value in defining truth while looking to "special revelation" or "subjective intuition" for understanding

- Unquestioned tradition – The past explanations are accepted without the need for objective testing or proof.
- Superstitious religion – Spiritual truth that is received via special revelation, or personal (private) experience is accepted without objective or public proof.

c. Faith plays a role in any theory of truth in that everyone must start with presuppositions that are not proven but assumed. Suspended science ignores or rejects many of the tenants of basic science.

2. **SCIENCE / SCIENTISM**

a. *"Public science represents a compromise between scientific thought and public policy, a compromise with its own complicated history, in and out of the courts."*

b. Because scientists are authorities and objective in some areas of knowledge this does not mean that they are authorities or objective in other areas. It is not uncommon for scientists to express conclusions that are opinions based not only on science but also on personal philosophy and political expediency. This is "scientism" - **a philosophical doctrine that asserts arbitrarily that knowledge comes only through the methods of investigation available to the natural sciences**.

c. Giles St. Aubyn in his book *The Art of Argument* puts it this way, "Perhaps the most astonishing of man's delusions is that he is rational by nature. In fact reason, like virtue, is something of which he is occasionally capable, but to which he does not often incline. The majority of men are governed by passion and prejudice and their most confident judgments owe more to instinct than to argument. They have settled views on the origin, nature and meaning of the Universe. They know how the country ought to be governed and why it is going to pieces. They have strong opinions about heredity, the prevention of unemployment, and how to educate children. Since few who maintain these views can have the authority, knowledge or experience to speak, it follows that many such opinions are based on inadequate evidence and are, therefore, to that extent unreasonable."

3. Spheres of evolution

a. **MICROEVOLUTION is a fact that can be directly observed.**

1. Microevolution is the natural internally generated change within a life form as a result of external stress and innate (though latent) genetic capability. It is change within narrowly defined limits.
2. This form of evolution is supported by a considerable body of data and can be observed in time.
3. This is really the primary contribution of Darwin's research; the tremendous divergence and development of new species. For example plant hybrids have been developed which can breed with each other, but not with the parent species.
4. The popular examples of the length of finch beaks, and the color of peppered moths, which appear in many texts is a clear example of microevolution but they do not prove nor do they illustrate macroevolution, except in theory.

b. **MACROEVOLUTION is a theory that has not been directly observed but is believed to be supported indirectly by a large body of data.**
   1. Macroevolution is microevolution on a level that would explain the origin of genetically dissimilar forms of life through natural process.
   2. This form of evolution is more speculative and open to debate.
   3. When people speak of "evolution" in the context of the origin of man, it is this macroevolution that is in view.
   4. Most people who say that they don't believe in evolution really mean they don't believe in Macro or Chemical evolution (evolution that has acted above a certain level).

c. **CHEMICAL EVOLUTION (prebiotic evolution, molecular evolution) is largely a mystery at this point of our scientific inquiry.**
   1. Chemical evolution refers to the origin of life; the origin of living cells from nonliving matter.
   2. While it is possible to create the building blocks of life from nonliving elements in nature under the controlled environment of an experiment, it is as yet a mystery as to how this could take place in the natural environment of the earth as we know it. It must be assumed that the earth was quite different in the distant past for such a process to take place without intelligent design and manipulation.
   3. Charles Darwin, in his <u>On The Origin of Species</u>, had nothing to say about chemical evolution.
   4. Many scientists recognize that this is a problem area in the theory of the evolutionary model for the origin of humans. What we know about chemical dynamics suggests that this is one of the weakest links in the evolutionary theory.

d. **COSMIC EVOLUTION the origin of space, time, matter, and energy.**
   1. This is the ultimate origin of the basics that are the foundation for all other spheres of evolution.
   2. There is no explanation for this within the "laws of nature." We must move outside science that is understood as a closed system that presupposes metaphysical materialism.

4. **OPERATION SCIENCE / ORIGIN SCIENCE**

   NOTE: Some scientists have made a distinction between two spheres of scientific hypothesis.

a. **Operation science** deals with the ongoing life processes that can be observed and verified through testing.
   1. This form of inquiry is based on the assumption of the inherent intelligibility of the Cosmos.
   2. It is limited to the physical processes of life.

b. **Origin science** or (forensic science) deals with processes that cannot be replicated and are therefore not open to confirmation or refutation on the basis of tests.
   1. This type of inquiry is more vulnerable to subjective factors such as religious or philosophical world-views or political bias.
   2. The origin of the human race is a subject that falls not under classical science so much as religion and philosophy. By definition science deals only with the "natural" and can only hint to us of the "supernatural".

Operation Science	*Origin Science*
Studies present	Studies past
Studies regularities	Studies singularities
Studies repeatable	Studies unrepeatable
Re-creation possible	Re-creation impossible
Studies how things work	Studies how things began
Tested by repeatable experiment	Tested by uniformity
Asks how something operates	Asks what is the origin of -
Examples: How does rock erode?	Example: How did life originate?

5. **CREATION SCIENCE / EVOLUTIONARY SCIENCE**
   a. Strictly speaking, creation science is an oxymoron in that it is deductive and not open to theories that exclude a Creator. This is the case for three reasons.
      1. As a matter of fact, "creation science" must necessarily be "anti-evolution science."
      2. It assumes that science can be done for the purpose of establishing a previously accepted model.
      3. It is not possible to scientifically provide evidence for "creation," if by creation we mean, as is usually the case, supernatural activity by a divine intelligence outside the possibilities of scientific description.
   b. The same can be said of evolutionary science where evolution is a theory derived through science. It is not or should not be a doctrine that drives or restricts the work of science.
   c. It might be helpful to make a distinction between knowledge of truth (which includes philosophical, religious, and metaphysical considerations) and knowledge of science (which does not in the same way).
      1. Truth is discovered by respecting the discoveries of science.
      2. Truth is discovered by listening to more than the discoveries of science.
6. **TELEOLOGICAL EVOLUTION / ATELEOLOGICAL EVOLUTION / DYSTELEOLOGICAL EVOLUTION**
   a. **Teleological evolution** is an evolutionary model that is guided by God and includes design and purpose.
      1. There are many Christians who embrace this form of evolutionary theory.
      2. This is sometimes called **"Evolutionary creationism." "Theistic evolution"** is a term more often associated with liberal Christianity or philosophical theism (i.e., a belief in God based on philosophical reasoning).
      3. Surveys have consistently pointed out that 40% of American scientists claim to believe in a personal God that can be prayed to. Many if not most of the 40% would embrace some form of teleological evolution.

b. **Ateleological evolution** is an evolutionary model that makes no claims with respect to God or design and purpose.

This view sees scientific observations as incapable of proving or disproving the existence of a Creator.

c. **Dysteleological evolution** is an evolutionary model that is Godless, without design or purpose and is a function of radical naturalism, materialism, and impersonal forces.

1. While it may not be intended, the common perception (through public education and the media) is that dysteleological evolution is what is meant by "evolution."
2. It is this view of evolution that is assumed by the "evolutionary purists" those who fight hardest against Intelligent Design (ID) and religion.
3. Dysteleological evolution is the evolutionary model that is critiqued in these notes.

7. **EVOLUTION / DARWINISM.**

a. **EVOLUTION** is a **theory** about a natural **process** whereby one form of life changes over time to produce another related but different form of life.

b. **DARWINISM** is a **metaphysical** stance and a **political** ideology. It is the atheist spin imposed on the theory of evolution.

8. **INDUCTIVE, DEDUCTIVE, & ABDUCTIVE REASONING**

a. **Inductive** reasoning – arguing from the specific to the general. What conclusions does the data compel us to consider? Example: The Bible contains inconsistencies as well as claims of special authority therefore it must be (in part) the product of differing perspectives on profound truths but with divine wisdom. Therefore it is worthy of our trust.

b. **Deductive** reasoning – arguing from the general to the specific. Starting with a given conclusion we interpret the data so as to fit it. Example: If a perfect God inspires the Bible, it cannot have any errors. The "errors" must be only apparent not real. Therefore it is worthy of our trust.

c. **Abductive** reasoning - arguing from the best story line. What worldview or story line best accounts for all the data we have. Example: The Biblical storyline addresses the most important questions that humans struggle to answer and it does so in a unique way that accounts for the observed outer world and the experienced inner world of self better than any other story. Therefore it is worthy of our trust.

9. **SCIENCE / TRUTH.**

a. Science helps us understand what is present in the natural world and how it works but it does not offer the answer to every question about life.

b. Science is much better at telling us what is not true than telling us what is absolute truth.

c. The Christian understands truth to come from special revelation (The Bible) as well as human observation, experience, and reason (science).

1. Truth comes from two spheres of knowing.

NOTE: The Scriptures of the Christian faith (Bible) claim to be the very words of God (II Tim.3:16) and they are infallible in all matters of which they speak. This includes the prologue of Genesis (chapters 1-11). Jesus referred to this material as historical fact (Matt.19:4; 24:38; Mk.10:6; Lk.17:27). Elsewhere in Scripture, "Adam" is viewed as an historical person (I Chron.1:11; Hos.6:7; Job 31:33; Lk.3:38; Rom.5:14; I Cor.11:3; I Tim.2:14; Jude 14). What we are suggesting here is simply that:

The Spiritual world	The Physical world
Theology	Science
Questions of why?	Questions of how?
Spiritual perception	Sense experience
Private insight	Public information

a. It is difficult to quickly dismiss a part of Scripture (Gen. 1-11) as without factual merit without calling into question the integrity of all of Scripture. This is not to say that Gen.1-2 are written as scientifically sensitive or historical in accord with modern notions of historiography.
b. The Scripture's claim about itself is impressive and must be examined along with external facts about itself before one dismisses it as fallible.
c. We have, on the one hand, what claims to be an infallible divine testimony of creation (in Gen. 1-2), and on the other a human theory of origins. Are they consistent? Should we expect them to be?

2. THE ROLE OF THEOLOGICAL UNDERSTANDING
   a. God reveals truth in two spheres - CREATION (general) & SCRIPTURE (special). "Science can only be created by those who are thoroughly imbued with the aspiration towards truth and understanding. This source of feeling, however, springs from the sphere of religion." Physicist Albert Eistein, in Science, Philosophy and Religion, a symposium (1941)
   b. When man limits his search for truth to empirical observations of the creation he will despair of finding meaning and truth.
   c. Man is incurably religious though he may not follow a "traditional religion". The question is - In whom does he place his trust? or What does he worship?
   d. Man's origin and relationship to the cosmos are important issues in Biblical revelation. Note: The Bible is not concerned so much with explaining the mechanism of human development as the meaning and relationships of man.
      1. There are two contrasting kinds of wisdom - (not science vs. Scripture) but (open vs. closed).
      2. Wisdom that is not open to the spiritual, supernatural dimension of life will not only be limited but misguided on many counts.
3. Two different views of science
   a. Much of the current debate surrounds the proper boundaries of science.
      1. **Traditional science** - Science is to be defined as the logical search and explanation of truth governed by an established set of rational disciplines.
      2. **Modern science** - Science is to be defined as a system that entertains only naturalistic causes in explaining everything we observe. The position of modern science is not that no miracles are possible but rather that no miracles are allowed.
   b. In the debate over origins, the scientific establishment often uses the second definition of science and outlaws any questioning of naturalistic evolution (special creation, intelligent design, or even theistic evolution). The questions is not did life evolve naturally (this is a faith assumption) but rather, *how* did it evolve naturally?

4. popular Alternatives

   Many Christian scholars have made serious attempts to harmonize the Scriptural data with the Scientific Theory, while others insist that it is impossible. Let me suggest four alternatives to this dilemma.

   a. **NATURALISM**: The apparent discrepancies between the Bible and science are real and the evidence for the evolutionary theory is the most probable true. It is assumed that the Biblical record is insignificant historically. This is the view of nearly all non-theists and some Christians. The difficult questions that arise are usually explained with responses like – "Given enough time, anything can happen." Dawkins suggests that natural evolution may be mathematically impossible but we know that it happened nonetheless through a natural principle called the "anthropic impulse."

   b. **CREATIONISM**: The apparent discrepancies between the Bible and popular "science" are real. The Biblical record (correctly interpreted) is the only valid truth of the manner and meaning of creation. This view would not disregard true science, but view evolution as a false theory deduced from inadequate evidence and evidence wrongly interpreted. Many Christians hold this view. This view generally takes one of two forms.

      1. **Old-age or Progressive Creation**: God guided the process of development, injecting information at key states in the development of the universe and life to design new forms or organization.
      2. **Young-age Creation**: God created the universe and the major life forms with in a short period of time (some say six literal days), about 10,000 (rather than billions of) years ago.

   c. **THEISTIC EVOLUTION**: This view accepts much of the theory of evolution but reject the materialistic and naturalistic presuppositions that so often go with it. The first two chapters of Genesis are understood as a general but not technical description of creation that accommodates an evolutionary mechanism. It should be noted that this view does not impress evolutionists or special creationists. It is distinct from "threshold evolution" and "intelligent design" in that it suggests that God guided an evolutionary process (natural selection) without violating the appearance of a fully natural process at each point.

   d. I am impressed by the hypothesis of E.J. Carnell which he calls **"THRESHOLD EVOLUTION"** (a wide variety of change — evolution — within the "kinds" — which are fixed — originally created by God.) This theory seems to satisfy the hard scientific data (gaps in fossil record and evolution of some forms) as well as the Biblical material.

   e. **INTELLIGENT DESIGN**: claims that evidence for design in the universe can be detected empirically. This position can embrace any of positions "b-d" above. Earlier scientists made a distinction between "natural causes" and "intelligent causes." Charles Thaxton identifies the marks of intelligent design as "specified complexity" – a complex structure that fits a preconceived pattern. Fred Hoyle, though an atheist, states the implications bluntly: "A common-sense interpretation of the facts suggests that a super intellect has influenced or controlled the physics."

10. **PRIMARY & SECONDARY CAUSES**

a. **Primary causes** – are prime causes or ultimate causes for phenomena like God parting the Red Sea for Moses or God creating the cosmos with life. Heb.11:3
b. **Secondary causes** – are the temporal, physical, natural means that bring about the event like the "mighty wind" that God used to push back the water in parting the Red Sea or natural selection in biology. It should be noted that science only deals with secondary causes and the presence of a secondary cause does not negate a primary cause.

THE SIGNIFICANCE OF THE EVOLUTION DEBATE

Introduction

1. Any group with authority to tell a culture's dominant creation story functions as a kind of priesthood, defining what shall be deemed ultimate truth. In the late 19th-century conflict over Darwinism, T.H. Huxley pursued a deliberate strategy to overthrowing the clergy and ordaining scientists as society's new priesthood.

   The origin of the universe and especially the origin of man has always been an important and fascinating subject. Until the work of Charles Darwin, the question was handled by theologians taking their cues from the first chapters of Genesis. Darwin's work, which was the first to offer a plausible mechanism for natural evolution, won the almost unanimous support of the scientific community by the end of the 19th century. Some Christians have likewise found the theory attractive and even compelling. Many reject the theory of evolution because of the perception that it undermines Christianity, and another group embraces it for the same reason.

2. When I speak of evolution in these notes I am generally speaking of naturalistic evolution - the popular secular model that does not allow for a supernatural element in its system.

3. What do you think?
   a. *"You can't accept one part of science because it brings you good things like electricity and penicillin and throw away another part because it brings you some things you don't like about the origin of life."* Donald Johnson
   b. *"Science can only be created by those who are thoroughly indued with the aspiration toward truth and understanding. This source of feeling, however, springs from the sphere of religion."* Albert Einstein
   c. The British museum of Natural History, located in London celebrated its centennial in 1981 by opening a new exhibition on Darwin's theory. One of the first things a visitor encountered upon entering the exhibit was a sign which read as follows: *"Have you ever wondered why there are so many different kinds of living things? One idea is that all the living things we see today have evolved from a distant ancestor by a process of gradual change. How could evolution have occurred? How could one species change into another? The exhibition in this hall looks at one possible explanation - the explanation of Charles Darwin."* An adjacent poster included the statement that *"Another view is that God created all living things perfect and unchanging."* A brochure asserted that *"the concept of exhalation by natural selection is not, strictly speaking, scientific,"* because it has been established by logical deduction rather than empirical demonstration. The brochure observed that *"if the theory of exhalation is true,"* it provides an explanation for the *"groups-within-groups"* arrangement of nature described by the taxonomists. The general tenor of the exhibit was that Darwinism is an important theory but not something, which is

unreasonable to doubt. How do you think the prominent scientists reacted to this exhibit? With outrage and fury - demanding that it be replaced by something that would not confuse the public with respect to the fact of evolution. P. Johnson, Darwin on Trial, pp133-134

d. *"Facts are the world's data. Theories are structures of ideas that explain and interpret facts. Facts do not go away while scientists debate rival theories for explaining them. Einstein's theory of gravitation replaced Newton's, but apples did not suspend themselves in mid-air pending the outcome. And human beings evolved from ape-like ancestors whether they did so by Darwin's proposed mechanism or by some other, yet to be identified."* Stephen Jay Gould, Harvard Professor and famous evolutionis

A. The issues must be properly defined.

1. **The Evolutionary Theory**

The word "evolution" literally means "an unrolling." Some accurate synonyms would be "change," "development," "movement," or "process." In biology, it has come to refer to a natural process whereby present life forms are thought to have originated from simple primitive forms of life. Charles Darwin's work is usually associated with the development of this theory as a naturalistic explanation for man's origin from lower forms of animal life. It is now generally held that these alleged simple ancestors also developed in a natural way from non-living matter (prebiotic "chemical" evolution).

a. What is fact and what is theory?

1. An examples of fact –
   a. There is diversity in life forms.
   b. Living things share common DNA.
   c. Living forms change over time within certain limited boundaries (micro evolution).
   d. Some forms of life have gone extinct.
2. An example of theory –
   a. Shared DNA and diversity of life forms suggest common ancestry through natural selection and mutation over time. (This can not be tested and proven with respect to anything but small variations within "fixed" limits – There are many variations of moths but they are all moths.)
   b. Human life evolved gradually over millions of years through what appears to be natural means and random chance.

b. The theory suggests two fundamental points. (Joan Roughgarden, *Evolution and Christian Faith,* pp 24).

1. All life belongs to one huge family tree.
2. Species change through time and place.

c. At a popular level the theory generally includes the following elements:

1. **Mutations** (sudden variations which cause the offspring to differ from their parents in well-marked characteristics) and **natural selection** (survival of the fittest) work together as the mechanisms of evolution.
2. An extremely long period of **time** (600,000,000 years) would enable (by chance) the above mechanisms to account for life as we know it today.
3. The **fossil** record generally confirms the theory by demonstrating that simpler life forms are found in lower strata of the earth's crust and that forms become progressively more complex in newer strata.

2. **The apparent conflict between popular science and popular understandings of Genesis.**
   a. The Biblical account seems to lean over backward to tell us that man is in some important way, distinct from lower animals. He is distinguished from animals by having been made in the likeness and image of God. Gen.2:7 seems to clearly imply that the physical body of Adam was created from non-living matter.
   b. The Biblical account describes the unit of life that God created as "kind". It seems, according to the Biblical record, "fixed," i.e., immutable. This "kind" is not to be correlated with the "species" of modern science, but no doubt represents a much broader category. Note that one may scrap the doctrine of the "fixity of species" without compromising the biblical record.
   c. According to a **1982 Gallup poll** aimed at measuring nationwide opinion:
      1. Over **47%** of respondents agreed with the statement that *"God created man pretty much in his present form at one time within the last 10,000 years."* This would seem to mark those respondents as creationists in a relatively narrow sense. Of college graduates 25% hold this position.
      2. Another **40%** accepted evolution as a process guided by God.
      3. Only **9%** identified themselves as believers in a naturalistic evolutionary process not guided by God. Of college graduates 16.5% take this position. The philosophy of the 9% is now to be taught in the schools as unchallenged truth. This is part of the reason many Christians are frustrated with the way this issue is treated.
      4. Among American high school science teachers, **40%** believe in a personal God. But a survey by Edward Larson and Larry Witham (Scientific American, Sept. 1999) reveals that more than **90 %** of NAS (National Academy of Science) members reject belief in a personal God and, think science itself compels that conclusion.
      5. These statistics remarkable have not changed in the last two decades.

Beliefs of American adults:

According to Newsweek in 1987, "By one count there are some 700 scientists with respectable academic credentials (out of a total of 480,000 U.S. earth and life scientists) who give credence to creation-science..." That would make the support for creation science among those branches of science that deal with the earth and its life forms at about 0.14%. The American public has a very different perception. The Gallup Organizations periodically asks the American public about their beliefs on evolution and creation. They have conducted a poll of U.S. adults in 1982, 1991, 1993 and 1997. By keeping their wording identical, each year's results is comparable to the others.

Results for the 1991-NOV-21 to 24 poll were:

Belief system	**Creationist view**	**Theistic evolution**	**Naturalistic Evolution**

	God created man pretty much in his present form at one time within the last 10,000 years.	Man has developed over millions of years from less advanced forms of life, but God guided this process, including man's creation.	Man has developed over millions of years from less advanced forms of life. God had no part in this process.
Everyone	47%	40%	9%
Men	39%	45%	11.5%
Women	53%	36%	6.6%
College graduates	25%	54%	16.5%
No high school diploma	65%	23%	4.6%
Income over $50,000	29%	50%	17%
Income under $20,000	59%	28%	6.5%
Caucasians	46%	40%	9%
Afro-Americans	53%	41%	4%
Scientists	5%	40%	55%

Political science professor George Bishop of the University of Cincinnati published a paper in 1998-AUG listing and interpreting 1997 poll data. “Bishop notes that these figures have remained remarkably stable over time. These questions were first asked about 15 years ago, and the percentages in each category are almost identical. Moreover, the profiles of each group has been constant. Just as when these questions were first asked 15 years ago, creationists continue to be older, less educated, Southern, politically conservative, and biblically literal (among other things). Women and African-Americans were more likely to be creationists than whites and men. Meanwhile, younger, better educated, mainline Protestants and Catholics were more likely to land in the middle as theistic evolutionists.”

The Pew Forum on Religion and Public Life (July 2005) found that 64% of 2,000 surveyed were open to the idea of teaching creationism in addition to evolution in public schools.

3. We are dealing with a conflict that is probably more philosophical than scientific. The question of human origin lies beyond the realm of hard science and is resolved by one’s presuppositions and world-view as much as by hard empirical evidence.

B. **The significance of the issue must be recognized.**

There are implications that logically follow the evolutionary theory, making it far more significant than an academic challenge to a literal interpretation of a few verses in Genesis 1.

1. **A Philosophy of Life**

a. The theory of biological evolution has become (in a sense) a super theory or naturalistic philosophy to **explain all present day phenomena.** A view that suggests that the whole of reality (from cosmology to human behavior) is evolution — a single process of self-transformation (Ed., J.R. Newman. *Evolution and Genetics*. New York: Simon & Schuster, 1955, p. 278).

b. The full title of Darwin's book was *On the Origin of Species by Means of Natural Selection, **or The Preservation of Favored Races in the Struggle for Life*.** This may explain why Darwin's book was at first more favorably welcomed by laissez-faire capitalists, social planners, and generals than by biological scientists.

c. Darwin was a disciple of Thomas Malthus, whose theories about food and population helped formulate laissez-faire capitalism and Social Darwinism. And Darwin ranks human races (like the "Aryan" and the "Asiatic") in a hierarchy by their proximity to the apes. He wrote in his notebooks that competition, free trade, imperialism, racial extermination, and sexual inequality were all natural outcomes in a developed human society. Darwin included Galton's eugenic theories and Herbert Spencer's theory about the "survival of he fittest" in the 1874 second edition of *The Descent of Man*. He called *Hereditary Genius*, Galton's treatise on the biological nature of intelligence and moral character, "remarkable," and Spencer "our great philosopher. (Charles Darwin, The Descent of Man, and Selection in Relation to Sex 2d ed. (1874; reprint 2004, Whitefish MT: Kessinger) p119). It also can be noted that Karl Marx asked Darwin if he could dedicate the English translation of ***Capital*** to the great naturalist, a request that Darwin, partly in deference to the sensitivities of his pious Christian wife, refused. (Gertrude Himmelfarb, *Darwin and the Darwinian Revolution*, p. 316).

d. **Eugenics** (the scientific, rational control of human breeding through Darwinian mechanisms of selection) was popular in the wake of Darwin and supported by leading humanists like, Sidney Webb, H.G. Wells, Bertrand Russell, John Maynard Keynes, and George Bernard Shaw.

e. Our deepest intuitions of right and wrong, are said to be guided by the emotional control centers of the brain, which evolved by natural selection to help the human animal exploit opportunities and ovoid threats in the natural environment. See Edward O Wilson's *Sociobiology* 1975.

f. The **racism and militarism** of Hitler and Mussolini were in large measure built upon the philosophical base established in the 19th century by Friedrich Neitzche and Ernst Haechel, both of whom were rabid promulgators of Darwinism among human societies. Huxley's sense that the black race was generally inferior to the white race and Darwin's view that man was superior to woman are legacies of evolution that have been too quickly forgotten.

g. Human **ethics and moral codes** are explained by many secularists as the product of biology and environment. Religion is understood as the formulation of an artificial construct to authenticate an ethical or political value system that is better explained through natural genetic and environmental forces.

h. For an excellent short review of this subject I recommend Philip J. Sampson's ***"6 Modern Myths about Christianity & Western Civilization."*** Chapter 2.

2. **The Nature of Man**

a. If the evolutionist is correct in viewing modern man as merely a link in the chain of life (which started with the simplest forms and is even now progressing to a more highly developed individual), the whole concept of a fallen race (sin) could be reinterpreted as a

lack of evolutionary development. Man doesn't need a redeemer, he needs more time to evolve.

b. Is it any surprise that modern religious thought is a bit embarrassed by the doctrine of a space/time "fall" with a space/time "redeemer?" True salvation for the evolutionist comes when we learn to speed up the process of social evolution by improving our environment.

c. How can one escape the conclusion that ethics are subjective in an evolving society?

d. If no divine purpose in our life is rationally detectable, then the value and dignity of the individual human being drops precipitously. *"If the worlds and its creatures developed purely by material, physical forces, they could not have been designed and have no purpose or goal -- this seems to be the message of evolution."* Science on Trial: The Case for Evolution by Douglas Futuma.

3. **The Nature of God**

a. Is it possible for God to bring about life through the evolutionary process? Theistic evolutionists feel this is not only possible, it is probable. But critics ask, what kind of God would this be? Is natural selection (survival of the fittest, dog eat dog, denial of the weak in favor of the strong) consistent with the Judeo-Christian God or, better yet, the Christ who created all (Col. 1:16) and yet seemed to prefer the natural losers? If the evolutionist is correct, must we assume that the wars and conflicts (which Christ called sin) are the natural mechanisms designed by God to bring about change? These are questions that a theistic evolutionist is pressed to answer.

b. We observe in nature both order and disorder, justice and injustice. How are we to explain this phenomena? Is this best explained by the Biblical account of special creation and the fall or is the materialistic evolutionary model to be preferred?

4. **The Nature of Revelation**

The evolutionary theory suggests that all phenomena are in a continual process of becoming. If we are to embrace this hypothesis, our view of the Bible will be affected in two ways:

a. We will be forced to call into question the historical accuracy of not only Genesis 1, but also the remainder of the Old Testament and New Testament as they:

1. bear witness to the historicity of Gen.1-11 (Matt.19:4-5; 24:37; Luke 11:51; Rom.5:12-14; I Tim.2:13-15) and
2. view creation as a completed act (Gen.2:1; Col.1:16; Rev.4:11; Ps.148:5).

b. We will quickly conclude, as did the rationalistic scholars of the 19th century, that the Bible is a record of the evolution of a religious tradition and not authoritative except as it reveals God's work in history.

5. **Theory as dogma.**

It is not uncommon to hear evolution taught not as a theory but as a proven fact. The passion with which some "scientists" present this dogma suggests that it is more a religious faith than a scientific theory.

"The world needs to wake up from the long nightmare of religion . . . Anything we scientists can do to weaken the hold or religion should be done, and may in fact e our greatest contribution to civilization." Steven Weinberg, Nobel Laureate

"I am utterly fed up with the respect we have been brainwashed into bestowing upon religion." Richard Dawkins Oxford Zoology Prof.

"It is absolutely safe to say that if you meet somebody who claims not to believe in evolution, that person is ignorant, stupid, or insane (or wicked, but I'd rather not consider that)." Richard Dawkins Oxford Zoology Prof.

AN EVALUATION OF DYSTELEOLOGICAL EVOLUTION

Introduction.

1. By "dysteleological" I mean "without an end in mind" or without a goal or purpose. **Dysteleological evolution** is an evolutionary model that is Godless, without design or purpose and is a function of philosophical naturalism, materialism, and impersonal forces. (See B.5. on page 7)
2. The purpose of this section is not to refute the theory of evolution but rather to call into question an over confident belief in a fully naturalistic evolutionary model as the only or best possible explanation for life as we know it.
   a. The media and public education often give the impression that the evolutionary model is proven beyond any reasonable doubt and that anyone who would question it is uninformed, ignorant, or sinister.
   b. There is reason to believe that the evolutionary principle when used to explain the origin of life as we know it is less than completely convincing even though there is evidence put forth in its support.
   c. Asking a person to accept a theory on the basis of some authoritarian decree is inconsistent with the scientific principle. This is true whether the theory comes from the Bible or from the scientific establishment.
3. I will attempt to present the strongest popular arguments that I know for the theory of evolution and then raise questions that have been asked in challenge to those who would suggest that macroevolution and chemical evolution are proven facts.
4. We might note at the outset that the evolutionary model is an attempt to explain the origin of the vast diversity of life on the earth through wholly natural processes, assuming that all life had its beginning from one common simple form.

A. Arguments used to support an evolutionary explanation for the origin of man.

NOTE - Basic observations of science with respect to evolution from a typical college level textbook. (Biology: Life on Earth, Teresa & Gerald Audesirk, Prentice-Hall, 1996 P.311)

a. Natural populations of all organisms have the potential to increase rapidly, because organism can produce far more offspring than are required merely to replace the parents.
b. Nevertheless, the numbers of most natural populations and the resources available to maintain them (such as food and appropriate habitat) remain relatively constant over time.

   Conclusion - Therefore, there is competition of survival and reproduction. In each generation, many individuals must die young, fail to reproduce, produce few offspring, or produce less-fit offspring that fail to survive and reproduce in their turn.
c. Individual members of a population differ from one another in their ability to obtain resources, withstand environmental extremes, escape predators, and so on.

   Conclusion - The most well adapted (the fittest) individuals in one generation will usually leave the most offspring. This is **natural selection**; the process by which the environment selects for those individuals whose traits best adapt them to that particular environment.

d. At least some of the variation in adaptive traits among individuals are due to genetic differences that may be passed on from parent to offspring.

Conclusion - Over many generations, differential, or unequal, reproduction among individuals with different genetic makeup changes the overall genetic composition of the population. This is evolution through natural selection.

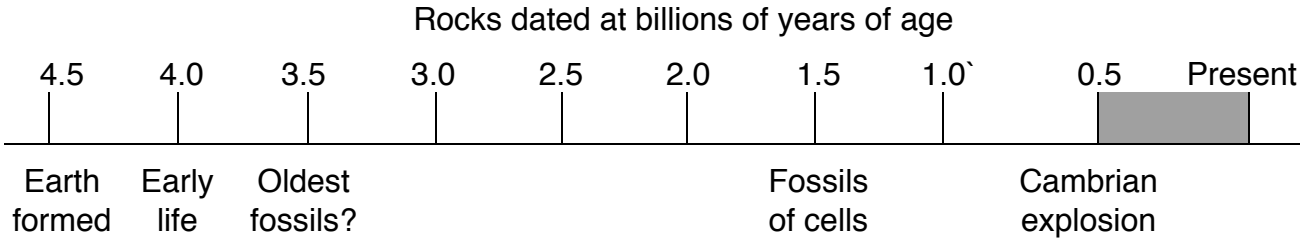
e. It has also been argued that the less than perfect match in nature between form and function suggests that a Creator God was not responsible. If he designed everything perfectly for its task then he did a sloppy job.

1. **Physical similarities** between lower and higher forms of life - i.e. humans and other mammals, are observed. This is said to suggest a relationship through common ancestry.
   a. **Gross similarities** -
      1. Seemingly unrelated animals often take on similar physical characteristics (seals and penguins for example). This is best explained by the pressure of a similar environment on each species to adapt to that environment.
      2. The bones in the forelimbs of some mammals and birds are similar (**homologous structures**) despite wide differences in function. This is best explained by a common ancestor and gradual evolution.
      3. The presence of **vestigial structures** (that serve no apparent purpose) like molar teeth in vampire bats and pelvic bones in whales and some snakes are best understood through an evolutionary model.
      4. **Embryological stages** of animals often follow similar paths. For example fish, turtles, chickens, mice, and humans all show signs of tails and gill slits early in development.
   b. **Biochemical similarities** -
      1. At the most fundamental biochemical levels, all living cells are very similar. For example, all cells have **DNA** as the carrier of genetic information; genetic code to translate that genetic information into proteins; all use roughly the same set of 20 **amino acids** to build proteins; and all use **ATP** as an intracellular energy carrier. Humans and chimpanzees share about 99% of their genomes.
      2. **Cytochrome c and blood proteins** are remarkably similar across a huge spectrum of species. Further, an evolutionary tree comparing the degree of differences in amino acid sequence between species closely resembles the evolutionary trees that have been deduced from anatomical and embryological studies.
2. The **fossil record** suggests an evolutionary model.
   a. Darwin was impressed with the similarity of fossil species to living species in any one district suggesting evolution by descent.
   b. If one accepts the popular method of dating fossils it can be seen that the older fossils are simpler life forms than the later. This seems to suggest evolutionary development.
   c. This is most dramatically seen in the fossil record of the horse, giraffe, elephant, and several mollusks.
   d. Stephen Jay Gould a paleontologist at Harvard University suggests that the fossil record is best explained by "**punctuated equilibrium**" where fossils for a particular kind of life are clustered together in the same period (with gaps between) suggesting that evolution took place in bursts.

      NOTE: A proposed history of life on earth based on the fossil record.

      1. Origin of solar system and Earth. 4600 - 3500 million years ago.

2. Origin of first living cells. 3500 - 590 million years ago.
3. Cambrian explosion of most modern life forms. 590 - 505 million years ago.
4. Origin of mammals and dinosaurs. 248 - 213 million years ago.
5. Origin of man. 2 million years ago.



3. **Microevolution** is a recognized fact in nature and the laboratory. Note that when people argue "evolution is a proven fact" they are often referring to microevolution. When people argue "evolution is a hypothetical theory" they are referring to macroevolution and chemical evolution.
   a. For example we can segregate members from a species, subject them to differing environments and over a period of time observe alterations that are passed on to offspring.
   b. The various breeds of dogs provide a striking example of **artificial selection**.
   c. Organisms seem to **adapt and change** with their environment. The famed peppered moth is an example.
   d. **Natural selection** has been observed as a fact of nature with the effect of changing life forms. This was Darwin's observation and today it is the unifying theory for all biology.
4. Modern **biogeography combined with plate tectonics** demonstrates the relatedness of species.
   a. When Darwin went around the coast of South America, he observed that the same ecological niche was occupied by similar but clearly different species.
   b. He also notices that despite deep similarity of physical features in the Galapagos and Cape Verde Island, the Galapagos Island were filled with species different from but related to those on the west coast of South America, whereas the Cape Verde Islands were filled with species different from but related to those on the west coast of Africa.
5. The absence of any compelling **alternative**.
   a. It must be understood that science is going to assume and seek a natural mechanism to explain the diversity and unity of all living things.
   b. The principle of special creation may be possible but it never is an option from the naturalist's perspective.
   c. In the pre-modern period the origin of life question was answered in the following ways.
      1. Spontaneous generation from both non living matter and other, unrelated forms of life.
         a. "Leaves from a tree are falling; upon one side they strike the water and slowly turn into fishes, upon the other side they strike the land and turn into birds." 1609 French botanist
         b. Maggots were thought to come from meat, mice from mixtures of sweaty shirts and wheat, etc.
      2. All present (and extinct) life forms were a special creation by God as described in the first chapters of Genesis.

6. **The usefulness of evolutionary models** in biological science.
   a. The evolutionary model has been very useful in enabling scientists to make predictions for research and discovery of facts about life.
   b. "The reason that anaturalism is preferred by scientists is because it works." William B.Provine, Professor of the History of Science at Cornell University
   c. The heart and soul of the scientist is free inquiry into the phenomena of life. The creationist model threatens to kill that inquiry by declaring the scientist's questions of how, why, when, etc. as fruitless in light of the fact that God did it and finished it.
   d. The theory of evolution can be likened to the teenage boy who commits a terrible crime and is not caught until he is 35 years old. But in the mean time he has been a loving valued citizen that has won the respect of the whole community. He may very well be guilty but anyone who dares try to prosecute him will experience stiff opposition from all who have benefited from his life. Evolutionary theory has proven itself so helpful in unlocking the secrets of nature that it is assumed to be a fact in spite of the problems. In the mind of many evolutionists the arguments posed against evolution are not so much flawed as lacking breadth of perspective.

B. Critical questions put to the above arguments.

Arguments for evolution	Response
Biological similarities	Do similarities point to a common ancestor or to common function and or common designer? One's presuppositions seem to be the determining factor in one's conclusions with respect to this question.

The Fossil record	Does not the fossil record pose at least as many problems as it does evidence for evolution? Any theory must explain the sudden explosion of nearly all life forms during the Cambrian period. This does not seem to fit the gradual theory of Darwin. "Evidence from fossils now points overwhelmingly away from the classical Darwinism which most Americans learned in high school." Newsweek Nov.3, 1980 b. "Gradual evolution expressed the cultural and political biases of 19th century liberalism." Steven J. Gould c. Popular examples of prehistoric missing links have been disappointing; - **Neanderthals** (just people), **Piltdown** (hoax), **Nebraska Man** (pig's tooth), **Java Man** (bad science), **Zinjanthropus** (extinct ape). d. As the fossil data accumulates, gaps in the fossil record become more distinct rather than less distinct. It is now widely accepted that the gaps will not be closed with more data as Darwin had hoped. This has led scientists to suggest more complex explanations of the fossil record that do not follow the classical Darwinian model.
Microevolution	Does change within a particular kind of animal (horse) on a confined scale prove evolution on a large scale (reptiles becoming birds)? There seems to be a need for some clear evidence in addition to microevolution before one can be confident that macroevolution has taken place. Centuries of experiments show that the change produced by breeding does not continue at a steady rate from generation to generation. Instead, change is rapid at first, then levels off and eventually reaches a limit that breeders cannot cross. No scientific finding has contradicted the basic principle that change in living things is limited.
Adaptation	This adaptation is observed within various types of life (dogs, horses, etc.) but it has not been observed so as to bridge the gap between differing types of life (fish to birds to dogs to humans etc.). If we can observe changes in (dogs for example) as a result of adaptation through controlled breeding and environments why don't we see it taking place across broader classifications of life (birds becoming mammals for example) in a similar rapid fashion?
Natural selection	Some difficulties in the data. a. Does not natural selection tends to be a conserving force, weeding out radical or abnormal tendencies? b. Are there not genetic limitations beyond which a species will not change?
Biogeography	Do similarities prove common ancestry or only suggest it? Could they just as well prove common designer?

Absence of an alternative	The Biblical alternatives are rejected because they involve a supernatural element. While there are rational challenges to idea that God spoke into existence life forms pretty much as they exist today, does it follow that this hypothesis is impossible or without its support from the data? For example, the idea of a point in time origin of the universe is supported by a number of recognized scientists.
Usefulness of the model	One must ask if it is indeed the theory of evolution that is so useful or is it the observations of science in a general sense?

Note that if the evolutionary model is true then we must conclude that:

1. Matter is eternal.
2. Order arose from chaos to give the appearance of design in the universe.
3. Life arose from non-life, intelligence arose from non-intelligence, and personality arose form non-personality.
4. All diversity in life forms arose from an existing simple life form.
5. The evidence to the contrary (below) is insignificant or invalid.

Genetic limits seem to be built into each life form.

Cyclical change rather than linier progressive change within life forms seems to be the pattern of nature.

Irreducible complexity or the "mouse trap" phenomena (it has no meaningful function unless and until all parts work together) has presented a formidable challenge to evolutionists. Darwin wrote, "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." We now know that there are many organs, systems, and processes in life that fit that description – the cell, the eye, etc.

Molecular isolation (living things share common DNA) can just as easily suggest a common designer or maker than a common ancestry.

Non-viability of transitional forms suggests that gradual development of, say fins to feathers, would be problematic in that they would have no function during the transition.

The **fossil record has gaps**. Stephen Jay Gould (an evolutionist) notes "The history of most fossil species includes two features particularly inconsistent with gradualism: 1) Stasis. Most species exhibit no directional change during their tenure on earth. They appear in the fossil record looking much the same as when they disappear; Morphological change is usually limited and directionless. 2) Sudden Appearance. In any local area, a species does not arise gradually by the steady transformation of its ancestors; it appears all at once and fully formed." Evolution's Erratic Pace, *"Natural History"* 86 (19770: pp13-14

The absence of any transitional forms within the diversity of life at the present time is not what the evolutionary model would lead us to expect. We do not go to the zoo confused as to which side of the cage we belong. There are no partially human life forms. When it is claimed that we have many examples of transitional forms what is meant is that we have many examples of forms that have transitional characteristics but these examples do not fit (for various reasons) in the family line of forms from either kind of life for which they are supposed to a transition.

Note: Much of this material is taken from *I Don't Have Enough Faith to be an Atheist* by Geisler and Turek, Crossway Books, 2004

C. Challenges to the theory of evolution as an explanation for the origin of human life.

1. **Modern scientific discoveries challenge the materialistic presuppositions that are normally associated with the evolutionary theory.**
   a. **Einstein's theory of relativity** suggested a time bound cosmos that meant that theories of evolution could not count on an infinite amount of time to facilitate the process.
   b. The advent of the **electron microscope** forced us to recognize the complexity of the cell, suggesting that the building blocks of life are far more complex than can be accounted for through a process as simple as Darwin's theory.
   c. Before Darwin's theory of evolution was introduced, the complexity and diversity in living organisms was attributed to God. Evolution however, offered an alternative natural explanation for this diversity - mutation and natural selection. But as our knowledge of the vast complexity of life began to unfold the evolutionary theory became stressed by the vast time and information required. The gap between non-living and living things is huge.
   d. **For example**: The entire non-living cosmos consists of 235 exponential bits of information while a single living cell consists of 20,000,000,000 bits of information. This gap is incomprehensible and cannot be accounted for through natural evolution. There simply is not enough time.
   e. **"Information theory"** in science suggests "informed structure" for DNA and proteins. This has set scientists looking for a causal mechanism beyond known natural sources. In other words, DNA does not consist of random or repeated patterns of structure. It seems to have been designed.
      1. Note that the genetic code for a long time was thought to include a lot of waste and uneconomical variation. Recent discoveries have challenged this idea as it is now recognized that there is real significance to the DNA code that was not recognized before.
      2. Because mind or intelligent design is a necessary cause of an informative system, one can detect the past action of an intelligent cause (but only in the sense that we now know of no other origin for such a complex information system).
      3. No natural process creates genetic information.
   f. Darwin himself obligingly offered a way to falsify his theory, writing: *"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."*
   g. Genetic studies suggest that human beings come from **one original couple**.

      "We are finding that humans have very, very shallow genetic roots which go back very recently to one ancestor. That indicates that there was an origin in a specific location on the globe and then it spread out from there." Michael Hammer, University of Arizona writing in *Nature*.

2. **Chemical evolution seems to be mathematically improbable if not impossible.**
   a. For life to come into being, scientists agree that four developments at the level of chemical evolution must take place.
      1. The formation of simple organic compounds like carbon.
      2. The formation of complex organic compounds like proteins.
      3. The concentration and enclosure of these organic compounds.

4. The linking of chemical reactions involved in growth, metabolism, and reproduction.

b. Evolutionists claim that time offsets the improbability of the events taking place. Dr. G. Wald (professor of Biology, Harvard) writing in *The Physics and Chemistry of Life* (New York: Simon & Schuster, 1955.) says, *"One has only to contemplate the magnitude of this task to concede that the spontaneous generation of a living organism is impossible. Yet here we are — as a result, I believe, in spontaneous generation."* Given this difficulty it is hypothesized that the ancient earth environment must have been very different (than it is today) in ways that would enable the prebiotic evolutionary process to take place. But this sounds like the kind of unwarranted assumption that would not be tolerated if made by any critic of the evolutionary model.

1. Professor M. Eden at M.I.T. has made various computations of the probability of the formation of a complex organism by chance and has always found that the age of the earth (5,000,000,000 years according to most evolutionists) is insufficient to provide enough time for the probability to become different from zero (*Mathematical challenges to the Neo-Darwinian interpretation of evolution*. Philadelphia: Wistor Institute, 1967.)
2. Many scientists consider probabilities on the order of $2 \times 10^{+50}$ to render an event as an impossibility.
   a. The probability that proteins essential for life as we know it appeared simultaneously in the primitive milieu on earth is on the order of $2 \times 10^{+94}$.
   b. A leading information scientist, Marcel E. Golay, calculates the odds against any living cell or any new organ being added to an existing animal as 10^{+450} to 1.
   c. The probability of one human couple evolving from non-living material is on the order of $2 \times 10^{+40,000}$.
3. To illustrate:
   a. If the universe was 80 billion light years in diameter and that entire space was filled with electrons, they would number only 10^{+170}.
   b. For an untrained golfer to hit 100 consecutive hole-in-ones from 200 yards blind folded and spun in different directions after each swing is a sure thing when compared to the probability noted above.
   c. *"The statistical problems that have now been recognized as besetting even the evolution of a single human, much less a human pair able to breed, are such that many scientists are arguing for "monogenesis" - the development of the entire species from a single ancestral pair or ancestries, which is in principle the same thing that Genesis teaches."* Harold O.J. Brown
   d. In spite of these calculations we often find statements like the following in modern biology texts. *"In summary, evidence suggests that sometime between 4.6 billion and 3.5 billion years ago, life arose on earth, generated from non living matter."* Albert Towle, Modern Biology pp 211. *"Even though geochemists may never know exactly what the primordial atmosphere was like, it is certain that organic molecules were synthesized on the ancient Earth." "Prebiotic synthesis would not have been very efficient or very fast; nonetheless, in a few hundred million years, large quantities of organic molecules could accumulate, especially since they didn't break down nearly as fast back then."* Teresa & Gerald Audesirk, Biology Life on Earth 4th edition 1996, pp 366.

3. **"The Big Bang" - Astronomical observations suggest an origin at a point in time and an old universe.**

a. *"The latest astronomical results indicate that at some point in the past the chain of cause and effect terminated abruptly. An important event occurred--the origin of the world--for which there is no known cause or explanation within the realm of science. The Universe flashed into being, and we cannot find out what caused that to happen."* *Robert Jastro (astrophysicist)*

b. While naturalistic evolution argues that matter is eternal, the "Big Bang" suggests that there was a beginning at some point in the distant past.

c. Since light takes a known and finite amount of time to travel from one part of the universe to another we can estimate the age of the cosmos as very old.

4. **Gaps in the fossil record remain unresolved.**

a. Leading contemporary paleontologists such as David Raup and Niles Elbredge say that the fossil problem is as serious now as it was in Darwin's day, despite the most determined efforts of scientists to find the missing links.

b. It is interesting to note that the sharpest criticism of Darwin's theory when first proposed came from those who were students of the fossil record. Darwin himself recognized the problem and did not use the fossil record as evidence for his theory.

c. *"The origin and earliest evolution of the metazoan (multi celled) phyla cannot be documented from fossil evidence."* Biologists T. Dobzhansky, F.J. Ayala, G.L. Stebbins, and J.W. Valentine, in Evolution (1977)

d. It should be noted that evolutionists are fully aware of this criticism and refuse to let it threaten the theory of evolution. They work hard at creating a case for special effects (punctuated equilibrium) that interrupt the otherwise uniform process of natural selection, mutation, etc. Thus muting the troubling lack of evidence for the theory from the fossil record.

5. **The present scarcity of transitional forms of life would not be expected if evolution were still in process.**

a. New forms of life tend to be fully formed at their first appearance as fossils in the rocks.

b. From the Cambrian period (500-570 million years ago) until the present the basic forms of life seem to have been unaltered in any radical way.

c. The fact that present species and kinds seem fixed is no little problem to the theory. Common sense tells us that the simplest observation of this phenomenon does not support the theory of evolution. If the popular notion of evolution through natural selection and mutation were true one might expect a seamless display of life without dramatic gaps between species (especially as they are observed in a particular geographical environment). Yet when we look at Africa for example, we see dramatic diversity in the same habitat.

d. It should be noted that evolutionists are fully aware of this objection and go to great lengths to offer possible explanations. But one might ask, why should the evolutionist not find this point troubling in that it certainly seems to be out of place with the theory.

6. **The laws of thermodynamics suggest that evolution would not be expected.**

NOTE: These laws state:

1) Matter/Energy cannot be created or destroyed (law #1), but it can be changed from one form to another.

2) When these changes take place entropy (in turning) increases, resulting in a tendency toward disorder (simplicity) as opposed to orderliness (complexity) (law #2).

a. **The Second Law of Thermodynamics** states that matter inclines itself toward the state of maximum randomness, not maximum complexity of organization. In every transformation of energy, some of the available energy is lost through heat so that, in effect, the universe is gradually running down, or workable energy is wearing out. It is contrary to the known laws of science to assume the availability of free energy to be used in the process since energy is dissipated, not stored up, in non-living matter. Through entropy (wearing out), living systems move toward disorganization (chaos, and death) rather than toward organization (improvement, and life). Therefore, the more time involved, the greater the chance that living things will die and non-living things will not spring to life. For the process to involve free energy, that energy would have to originate outside the closed system of this universe. The fluctuation argument that entropy can decrease in one area of the universe if it increases by the same amount elsewhere, could only happen over a short period of time compared with the age of the universe (10,000,000,000 years) and if there were some means of absorbing energy and using it to increase complexity. Living organisms can do this, but it could not happen during the prebiotic period, or the early single-cell stage.

   NOTE: Entropy normally increases more rapidly in systems open to influx or external energy. Strictly speaking, the earth is an open system. The origin of life requires a significant decrease in the configurational entropy that does not take place in our present system.

b. This suggests that the universe had a beginning and is wearing down rather than evolving toward higher, more complex forms of life.

c. The fact that we can observe species becoming extinct before our very eyes and have never been able to see a new species emerge seems strange if the evolutionary model is true.

7. **A Credible Mechanism for Evolution has not yet been found.**

   NOTE: Evolution depends on the existence of a mechanism whereby new norms can arise. At first, genetics promised to give the answer (a combination of gene mutations and natural selection). However, this mechanism seems improbable for the following reasons:

a. Most mutations — over 99% are lethal or harmful (A.M. Winchester (*Genetics,* Boston: Houghton Mifflin, 1951, p. 290)

b. Most mutations are recessive. The few dominants known are lethal or harmful. Pre-adaptation requires the unlikely juxtaposition of a neutral (but potentially beneficial) mutation and a change in environment. Unless these two events happen close together, the gene will probably be lost. (E.B. Ford. *Mendelism and Evolution*. London: Methuen, 1949, p. 44).

c. Many reverse mutations are known. Sometimes they occur more readily than the original mutation, thus rendering long-term change improbable (H.F. Blum. *Time's Arrow and Evolution*. Princeton: University Press, 1951, p. 148).

d. The high mortality rate before mating in wild species (99% for land organisms, and over 99.9% for marine organisms) means that most mutations will be lost (A. Buzzati-Traverso. *Cold Spring Harbour Symposia on Quantitative Biology*. 15, 16, 1959.)

e. Population size is critical. In a large population, mutations get lost. In a small population, they spread unchecked by selection, even if harmful.

f. Chromosomal changes (translocations and inversions) usually lower viability if heterozygous and are nearly always lethal if homozygous (J.W. Klotz. *Genes, Genesis, and Evolution*. St. Louis: Concordia, 1970, p. 309).

   Chromosome doubling (polyploidy) is almost exclusively limited to plants, and is regarded as being of only minor significance in evolution. “Polyploidy is a complicating

force rather than one which promotes progressive evolution." (G.L. Stebbins. *Variation and Evolution in Plants*. New York: Columbia University Press, 1950).

g. *"The efforts of biologists, paleontologists, etc. to come up with a "naturalist" theory of evolution that will fit the facts embedded in the historical record has by now an air of desperation. Environmental changes seem clearly inadequate to explain the origin of species, and so do theories based on genetic mutation. If there is a "natural" mechanism at work - using "natural" to mean "causal" in strictly scientific terms - we have not yet discovered it."* Irving Kristol, editor of The Public Interest.

8. **The Cambrian explosion does not seem to fit the classic evolutionary model.**
   a. The rapid origin of animal life in the Cambrian period.
      1) The Cambrian explosion (about 530 million years ago) resulted in the sudden appearance of several well developed species.
      2) Evolution was to take place gradually and slowly over a long period of time.
   b. Fifty body plans appear in the Cambrian period.
      1) This is an astounding number of new life forms that can not be explained by natural selection or any known environmental factors.
      2) Evolutionary theory does not have a mechanism to explain these new life forms.
   c. The Cambrian explosion consisted of animals with "body plans" or phylum that set the framework for later animal forms.
      1) We find well-developed and stable life forms in the Cambrian that represent the trunks of the evolutionary trees.
      2) Evolutionary theory suggests that changes take place at the lower (species) level and spread out to form more stable body plans (phylum).
   d. Cambrian life forms seem unrelated to Precambrian life forms.
      1) Only 5% or less of these forms show validated evidence of Precambrian parentage.
      2) This challenges the principle of continuity of all life forms, a major doctrine of evolutionary theory.
   e. The body plans of Cambrian life forms are quite diverse.
      1) The forms of life seen in the Cambrian explosion seem unrelated to each other.
      2) Evolutionary theory would suggest that this was not to be expected.
   f. The differences in life forms in the Cambrian period.
      1) The differences that exist between life forms in this period are at the phyla level. There are few examples of different species at this level. Few Cambrian animals seem related to each other.
      2) Evolutionary theory suggests that intermediary forms should be present since changes were to arise from the lower (species) level.
   g. The stability of Cambrian stem animals.
      1) The body plans of Cambrian stem animals that survived are extremely stable and they have remained essentially unchanged up to the present time.
      2) Evolutionary theory suggests that change should be taking place and be observable in the Cambrian data.
   h. Top-down direction of change in phyla.

1) The Cambrian phyla branch out into related life forms but they do not form new phyla. No new life form came into existence after the Cambrian period.
2) Evolutionary theory suggests that changes take place from the bottom up.

9. **The irreducible complexity of Biochemical systems is difficult to explain with the evolutionary model.**
   a. There are systems that consist of several interlocking parts, all of which must be in place before they can function.
      1) The eye is one example.
      2) An analogy - A mousetrap does not evolve out of wood and metal from a crude trap to an effective trap. It does not function until all parts are in proper order.
   b. Different types of irreducible systems
      1) Systems that consist of interdependent parts that must be assembled all at once, i.e. the hair-like cilium functions like an oar and requires the interplay of more than 200 different proteins.
      2) Systems that are sequential, i.e. the blood-clotting mechanism requires numerous steps which are exquisitely timed by a series of catalysts to ensure that blood clotting occurs at the site of a wound and at no other place or time.
      3) Systems that depend on delicate recognition signals, i.e. certain molecules in the cell act as transport vessels that recognize the right "pick-up" and "drop-off" zones, as well as the correct materials to carry.

10. **Sexual reproduction is not what an evolutionary model would suggest.**
    a. For every two offspring that a sexual species produces, only one (the female) can produce further offspring. Both offspring, however, of an asexual species can go on to reproduce. Thus asexual species should rapidly outbreed sexual ones. This is not the case however.
    b. The prominent evolutionary biologist George C. Williams calls the problem a "crisis" and has written that if sex did not exist "there would be no mystery."

11. **The popular idea of embryonic development passing through primitive life forms has been exposed as fake.**
    a. Many high school biology textbooks show embryos gradually morphing into higher forms of life from lower forms. This has been exposed as a wishful hoax.
    b. The fraudulent figures were first drawn in the late nineteenth century by an admirer of Darwin named Ernst Haeckel. They have been used as late as 1994 in a college textbook by Bruce Alberts, the president of the National Academy of Sciences.

NOTE: Those who firmly believe that evolution is a fact will offer explanations to each of these objections but one must ask how convincing are such explanations? Just because an explanation is offered does not mean the objection is answered.

12. **There are human experiences that are difficult to explain with an evolutionary model.**
    a. **Longings of the human soul** – The human hunger for something outside nature. The joy of beauty and the pain of injustice are rooted in an idealism that has its roots in God.
    b. **Moral instincts** – The fact that people argue rather than fight suggests that they believe that there are standards that govern our common experience. C.S Lewis describes this as

the TAO (an inner moral code that transcends time and cultural boundaries). When someone claims that God could not exist because of the injustice in the world we must ask, "How can you identify injustice without some kind or transcendent moral code which suggests a moral law giver." Richard Dawkins writes "*In a universe of blind physical forces and genetic replication, some people are going to get hurt, other people are going to get lucky and you won't find any rhyme or reason in it nor any justice. The universe we observe has precisely the properties we should expect if there is at the bottom no design, no purpose, no evil and no good. Nothing but blind pitiless indifference. DNA neither knows nor cares, DNA just is and we dance to its music*." It is significant that Dawkins has somewhere acquired a sense of good (lucky) and evil (hurt) in his world of "blind pitiless indifference." One can't but wonder at the image of God, even in a devout atheist.

c. **Religion** – There is a universal fear of the "other" beyond our world.

13. **There are significant gaps in the "naturalistic story" of the origin of life, as we know it.**
    a. **Chemical evolution** – The origin of life (DNA) from non-life represents a huge gap for which there is no easy natural explanation. Classical evolutionary theory starts with a full-blown living cell. It has no explanation as to how it got there.
    b. **The eucaryotic cell** – The kind of cell, with a nucleus and various other complicated features such as mitochondria, which are not present in bacteria, represents an even more momentous difficulty and statistically improbable step says Mark Ridley in *Mendel's Demon*.
    c. **Consciousness** – The origin of consciousness is another gap for which there is no easy natural explanation.
    d. **Fossil record** – Gaps is the fossil record (noted above) are troubling to Darwin's theory.

D. **Conclusions**

1. It is curious to many as to why these and all and any other challenges to the theory of evolution are so dogmatically and confidently ignored, belittled, or discredited by so many who claim to have no vested interest but the truth.
2. The point of these challenges is not to disprove evolution as a possible principle to explain the origin of life forms as we see them today. It is rather to challenge the seemingly evangelistic, triumphalistic, and closed mindedness with which evolution is presented to the general public by those who claim to be objective and open minded seekers of truth.
3. I personally am a chemical evolution and macroevolution agnostic. It seems to me that macroevolutionary theory is built more on a priori philosophical assumptions than on evidence. The evidence, on the other hand, supports microevolution. The distinction between the two is critical and is largely ignored by the mainstream media and general public.
4. While critics of evolutionary theory have sometimes been selective in what evidence they choose to attack it is the arrogant disrespect (by some evolutionists) of any serious critique of evolution that seems most out of place.

   "People who resort to ridicule are often covering up something. In this case they are hoping to prevent reasoned examination of a vulnerable assumption. The assumption is that science knows of a mechanism for evolution that can produce eyes, brains, and even plant cells without the application of massive amounts of preexisting intelligence." Phillip E Johnson

A CASE FOR INTELLIGENT DESIGN

Introduction.

1. "There is no perceived "orderly world" without some mind to enable it and some mind to perceive it." "That intelligence exists to apprehend that intelligibility is itself the most astonishing fact of natural history's development." "One cannot reasonably have human personality drop out of the blue in evolving history and not hypothesize a divine person that elicits and awakens human personality." (*The Living God by Thomas C. Oden PP149-151)*
2. Some scientists have suggested a model they call "intelligent design" (ID). It is proposed that this model offers a better explanation of the scientific evidence than the naturalistic evolutionary model. The term "intelligent design" seems a bit redundant. John Lennox suggests that "design" or "intelligent causation" would better serve the discussion. (*God's Undertaker - Has Science Buried God?* pp11)
3. ID is too often viewed as crypto-creationism, a "creationism" defined by a particular "young earth" interpretation of Genesis 1&2. This is an illegitimate connection as attested to the disdain that most "young earth" creationists have for ID. The supporters of ID insist that its support comes from the hard data and reason, not Scripture. It should not be surprising that some Christians find the theory attractive in that it lends rational support to the Biblical creation narrative.
4. It is important to note that the question of origins falls on the borderline between science and philosophy. It is a forensic science and as such cannot be tested in a lab or replicated in the present. The distinction between "origin science" and "operational science" is helpful (see A6 above).
5. "Let us go directly to the question of evolution and its mechanisms. Microbiology and biochemistry have brought revolutionary insights here… They have brought us to the awareness that an organism and a machine have many points in common… Their functioning presupposes a precisely thought-through and therefore reasonable design… (sounds like intelligent design to me) . . . It is the affair of the natural sciences to explain how the tree of life in particular continues to grow and how new branches shoot out from it. This is not a matter for faith. But we must have the audacity to say that the great projects of the living creation are not the products of chance and error… (They) point to a creating reason and show us a creating intelligence, and they do so more luminously and radiantly today than ever before. Thus we can say today with a new certitude and joyousness that the human being is indeed a divine project, which only the creating Intelligence was strong and great and audacious enough to conceive of. Human beings are not a mistake but something willed." Pope Benidict XVI, *In the Beginning: A Catholic Understanding of the Story of Creation and the Fall,* 1986
6. For a helpful response to Francis Collins' objections to ID, I recommend Mike Gene's comments at www.idthink.net/back/collins/index.html. It is interesting to note that many if not all observers recognize the inadequacy of "natural" explanations of the origin of life and the great diversity of life forms relying on blind chance through natural selection. Even Richard Dawkins respects the "anthropic principle" or the perception of design as does Francis Collins, and Dinesh D'Souza all of whom are critical of ID. But I ask, what is the difference? If you reject ID but then turn right around and say that there is evidence of design, are you not contradicting yourself?

A. The "anthropic principle."

1. **The orthodoxy of 19th century science – a random, impersonal universe.**
   a. The **Copernican revolution** abolished the myth that the earth and humanity were at the center of the physical universe. This was a significant challenge to the theology of the day.

b. The **Darwinian revolution** challenged the notion that man's origin was the direct and supernatural work of God by suggesting that random chance characterized the physical world including the origin of species.

c. It might be said that 19th century science was fully committed to the notion that "**mechanism**" (all life can be explained by random, purposeless, natural forces) had displaced "**teleology**" (the cosmos is goal oriented and purposeful).

2. **The emerging light of cosmic design – the random universe goes out the window with postmodernism.**

a. In 1973 Brandon Carter (Cambridge University astrophysicist and cosmologist) coined the term "anthropic principle" in a lecture celebrating the 500th birthday of Nicolaus Copernicus.

b. The essence of the anthropic principle came down to the observation that all the myriad laws of physics were fine-tuned from the very beginning of the universe for the creation of man – that the universe we inhabit appeared to be expressly designed for the emergence of human beings.

c. The anthropic principle offered a kind of explanation for one of he most basic mysteries of physics – the values of he fundamental constants (gravitational and electromagnetic forces).

d. Even if humanities place in the universe was not physically "central" it certainly seemed "privileged" and no accident.

e. What made the discovery of the anthropic principle possible was the advent of big bang cosmology starting with the work of two physicists, Georges Lemaitre in 1920 and George Gamow in 1945. The term "big bang theory" was coined by Fred Hoyle a proponent of the counter "steady state theory" of an eternal and unchanging universe. By 1970 the "big bang theory" was well established and widely accepted.

f. It was observed that even the slightest alteration of the basic physics and chemistry of the cosmos would have dramatic results that precluded the origin and sustenance of life. John Leslie's book *Universes* (pp. 37-38) gives numerous examples.

g. It is possible that the passing of modernism, with its faith in a material explanation for all life, and the advent of postmodernism there will also be a withering of secularism. We shall see.

h. As for randomness, the only place where it produces order is in the "theory of Darwinism." All other models work toward disorder i.e. the 2nd law of thermodynamics.

3. **Implications of the anthropic principle.**

a. As might be expected, materialists are not only nervous but also scrambling to offer naturalistic explanations for any observations that suggest intelligent design. One such explanation is the purely imagined "*multiple universes*" where something outside our universe "cooked the books" of our system. But this does not solve the problem. It just pushes it back to another level. If we, like Richard Dawkins, choose to believe that aliens to our system exported their intelligent design into our cosmos, how is that more reasonable than faith in God?

b. The implications are significant. Hawking notes in *A Brief History of Time* (pp. 140-141), "So long as the universe had a beginning, we could suppose it had a creator. But it the universe is really completely self-contained, having no boundary or edge, it would nave neither beginning nor end. It would simply be. What place, then, for a creator?"

c. Could if be that after scientists scale the lofty peaks of ultimate truth they find a monastery and theologians that have comfortably resided there for many decades.

B. Basic rational for Intelligent Design.

1. **It is not good science to limit all causes to a philosophy of materialism and naturalism**.
   a. Science is in search of causes. There are only two types of causes, intelligent and natural. (Occam's razor – From among competing hypotheses, selecting the one that makes the fewest new assumptions usually provides the correct one, and that the simplest explanation will be the most plausible until evidence is presented to prove it false.)
   b. Both types should be open to consideration by honest enquirers. See Abductive reasoning from page 10 above.
   c. When Copernicus established as fact that the earth was not the center of the universe there followed an understandable denial of any special place for humanity in the cosmos. But the Copernican narrative has been reversed and man has been restored to his ancient pedestal as the favored son, and perhaps even the reason for the creation. The universe is fine-tuned for human habitation. Astronomer Martin Rees's *Just Six Numbers* argues that six numbers underlie the fundamental physical properties of the universe, and that each is an exact value required for life to exist. If any one of the six were different there would be no stars, no complex elements, no life. Rees who is not a religious person calls the values attached to the six numbers "providential." *Just Six Numbers* pp179
   d. Scientists (even those who are not religious) recognize what they call an "anthropic principle" built into nature that predestines the "natural" process to select for conditions supporting life. Astronomer Robert Jastrow observes that the anthropic principle "is the most theistic result ever to come out of science." (*The Intellectuals Speak Out about God* by Roy Varghese, ed. pp.22) How is this not a form of ID, it certainly is not a "natural law."
2. **Irreducible complexity of Biochemical systems suggests ID.**
   a. This is sometimes called the "mouse trap" phenomena (the mouse trap like the eye has no meaningful function unless and until all parts work together).
   b. Darwin wrote, "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." We now know that there are many organs, systems, and processes in life that fit that description – the cell, the eye, etc.
   c. Evolutionists have offered explanations for some of the complexities in nature but they often seem to be desperate attempts more than obvious, clear, solutions.
3. **There are no known natural laws that create specified complexity (information) in cells.**

   According to Stephen Meyer (author of *Signature in the Cell: DNA and the Evidence for Intelligent Design*) the basic argument for ID goes something like this: **Premise One**: Despite a thorough search, no material causes have been discovered that demonstrate the power to produce large amounts of specified information. **Premise Two**: Intelligent causes have demonstrated the power to produce large amounts of specified information. **Conclusion**: Intelligent design constitutes the best, most causally adequate, explanation for the information in the cell."

   The mathematic improbability of life originating by random chance is widely acknowledged even by those who hold an evolutionary view. The most popular explanation among scientists today is that life arose by natural forces within the constituents of matter itself. The idea is that every time the right preconditions exist, life will arise automatically and inevitably. The difficulty however is that all attempts to demonstrate this "anthropic principle" experimentally have illustrated that a "natural force" mechanism will not work. It looks like a put-up job. In other words, the "anthropic principle" suggests a "designer" who is guiding the system. Dean

Kenyon, the author of *Biochemical Predestination* (one of the most widely used graduate textbooks supporting the anthropic principle explanation) has become a proponent of ID because of his own experiments. Richard Dawkins' (perhaps the most outspoken evangelist for naturalistic evolution) popular book *The God Delusion* admits that there are three gaps in the evolutionary view that are mathematically impossible to account for without an anthropic principle: 1) The formation of life from non-living matter, 2) The formation of a reproducing cell from basic living materials, and 3) The formation of self consciousness (humanity) from basic cells.

4. **ID largely eliminates the problems created for the evolutionary model by the data.**
   a. Genetic limits seem to be built into each life form. This fits the ID model.
   b. Cyclical change rather than linier progressive change within life forms seems to be the pattern of nature. This fits the ID model.
   c. Molecular isolation (living things share common DNA) can just as easily suggest a common designer or maker as a common ancestry.
   d. The gaps in the fossil record are consistent with ID.
   e. The absence of any transitional forms within the diversity of life at the present time fits ID.

C. Objections to Intelligent Design.

1. **ID is not science.** If this is true, then neither is Darwinism when Darwinism like ID is trying to discover what happened in the distant past. Operation Science and Origin Science deal with different challenges that require special considerations. For example testability is impossible in forensic (Origin) science. If science is defined in such a way to exclude anything other than a "natural" cause then we must ask if such a definition is too narrow to address the question of origins. The more appropriate question is: Is there any scientific evidence for design?
2. **ID commits the God-of-the-Gaps fallacy**. ID claims to have positive evidence for its model. It is not just offering an explanation for unexplained phenomena. Good science should be open to both natural and intelligent causes. ID is falsifiable, in other words, ID could be disproved if natural laws were someday discovered to create specified complexity. The same cannot be said of Darwinism. Darwinism is more prone to commit the "question-of-the-gaps" fallacy in that it often is forced to default to an unknown power of some sort. ID is not arguing that the inability of science to provide a natural explanation automatically argues for a creator designer. ID is rather saying, we do have models of where intelligent information comes from in other areas of life and as scientists we should not ignore what is common knowledge – intelligence and designer are connected.
3. **ID is religiously motivated.** In a broad sense this is true. But so is evolution when it is pressed as a dogmatic explanation for the ultimate origin of life. In good science, the quality of the evidence is the issue no matter what the motives might be. Everyone including Darwinists, may have a bias motivation but this does not change the evidence or the argument. Good science demands objectivity, which we hope can be respected in spite of personal preferences and bias on both sides of any issue. There are strong faith commitments behind naturalism (Dawkins) as well as Special Creation.
4. **ID is false because the design is not perfect**. The fact that we can claim to know what is sub-optimal design implies that we can know optimal design. How can we be so sure that we know the function of all parts of life's forms. All design requires trade-offs. The anthropic principle in physics makes a strong case for a fine tuned universe that is uniquely suited for

life as we know it. We also must consider the effect of "the Fall" on the physical development of life forms.

5. **ID kills the incentive to explore** natural explanations for phenomena. This is a criticism that does not find support in actual practice only in theory. Note that the first scientists, who were for the most part Christians, did their exploratory work because of their faith in God.
6. **ID is little more than "creationism" in disguise.** Some creationists may find ID a source of support for their doctrine and this should neither be surprising nor should it confuse ID with "Creationism." ID has little to say about where the encoded information in the cell comes from but just that it is best explained by some form of design rather than pure natural chance. Many proponents of ID do not embrace a "Biblical" perspective of a "Creator." The fact that some (perhaps many) do embrace such a perspective should not surprise us nor should it necessarily link (equate) ID with Creationism.
7. **ID wrongly assumes that the "appearance" of design is proof of design.** Many scientists concede the fact that the "appearance" of design is present in nature. They also maintain that Darwin's work successfully demonstrated that this complexity in nature was only an "appearance" of design. More recently, the revolution in molecular biology with the recognition of the complexity of DNA and the encoding of information in the cell has put the design question back on the table. The present state of science is unable to account for the origin of the complex information within the cell or the origin of life. While this does not prove the validity of ID, it does suggest that it is a possible theory with evidence in its support. As Charles Darwin noted, *"it seems to me that, supposing that such a hypothesis were to explain such general propositions, we ought, in accordance with the common way of following all sciences, to admit it until some better hypothesis be found out."*

D. Should ID be taught in a science class at a public school?

It depends on how one chooses to view the venue of science. The question of origins is outside the view of science as science is popularly defined. This means that when it comes to the question of the origin of the universe, life, and humanity we defer the question to a broader venue than "operation science." In this sense evolution should be explained as a description of how forms of life have changed through time by natural forces. It should also be explained that evolution may suggest an answer to ultimate origins but it is incapable of addressing this question with hard evidence or certain conclusions. When the question of ultimate origins is addressed it should be addressed from a number of differing perspectives including ID and special creation.

Pastoral advice

How should Christians respond to the challenge of naturalistic evolution as a model for origins?

1. First, get an educated exposure to the issue. A lot of Christians lose credibility because they make dogmatic statements that come from uninformed positions. Non scientists should be very careful how they talk about technical scientific data.
2. There is so much that we do not know about the HOW of origins both from the Bible and from science that we should keep an open mind in looking for answers. Be tentative in your assertions about HOW God created the cosmos. Admit that there is much that we do not know. Past blunders by well meaning Christians making arrogant claims (i.e. the earth is the center of the universe) should not be forgotten.
3. Recognize that in the minds of some people the evolutionary model is so well established, that to question it is unthinkable. If you want to challenge the model do so respectfully, humbly, and patiently.
4. It is possible that God could use a modified evolutionary model in His creative work. Don't dismiss theistic evolutionists as compromises of science and theology.
5. As indicated above, I favor E.J. Carnell's view of "threshold evolution."

Questions that you should be able to answer.

1. **Specific facts you should know.**
   a. What are the strongest arguments for macroevolution?
   b. What are the strongest arguments against macroevolution?
   c. What is the distinction between micro, macro, and chemical evolution?
2. **Issues that you should be able to discuss.**
   a. How has evolutionary theory influenced other areas of knowledge and ethics?
   b. Is it possible to interpret Genesis so as to be in harmony with macro-evolutionary theory?
   c. Why is the subject of evolution so controversial and emotional?
   d. Is "creation science" is paradox?
3. **Questions you should wrestle with.**
   a. How should the subject of the origin of life be handled in public education?
   b. How can Christians talk about the subject of evolution and creation in constructive ways?