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## LIMITATIONS OF SCIENCE

By David A. Plaisted, PhD

Scientific research has a tremendous influence on society today, not only in terms of advances in technology, but also in our world view. The conclusions of science are often highly regarded by the public and by scientists themselves, but the limitations of science are not always appreciated. Therefore, it is important to consider these limitations in order to evaluate the impact of science on human health and well-being and its effect on our world view, especially when the conclusions of science may contradict religious beliefs.

### Differences in Religious and Scientific Truth

The first limitation of science is that it cannot come to religious conclusions because it is not a religion and cannot answer religious questions. Despite this, the scientific establishment sometimes comes to conclusions that contradict a literal understanding of the Bible. This is not surprising and does not show that the Bible is unreliable. Science and religion operate differently, and it is not reasonable to expect that they will always agree. Furthermore, there are limitations of the scientific method that are not sufficiently appreciated by the public or the apologists of science.

It is reasonable that religious and scientific conclusions may differ for the following reasons:

1. Religion and science have different subject matter. Religion is concerned with ultimate truth and meaning, while science is concerned with truth about the material world based on current evidence. However, in some cases both religion and science make statements about the same domain, such as the origin of life.
2. Even in cases where religion and science deal with the same subject matter, religion is based on eternal truth, while science is based on what is currently known. Scientific theories change, but religion is concerned with eternal truths that do not change. For example, the former earth-centered cosmology was replaced by a sun-centered cosmology, Newtonian mechanics was modified to relativity theory, and quantum me-



'...and this new discovery completely changes everything you were ever taught about the origin of life. Oh, wait! A newer discovery totally changes what I just reported...'

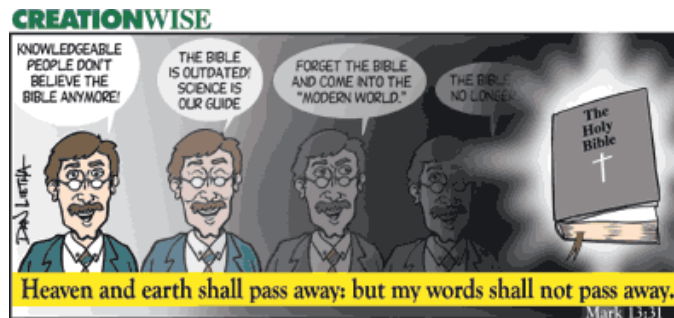
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chanics was developed. Also, it had been assumed that rates of radioactive decay were constant, but there has recently been evidence that rates of decay are not constant, but are influenced by particles coming from the sun in some way.<sup>1</sup> What was formerly thought to be “junk” DNA is now known to have a function. We now have a much greater appreciation for epigenetics than formerly. “The theories we currently hold to be true,” said Stephen Goldman, a professor at Lehigh University, “are as likely to be falsified in the next 100 years as the theories that we look back on as having been falsified in the last hundred years.”<sup>2</sup>

<sup>1</sup>Gardner EK, Stober D (2010 Aug 30) Purdue-Stanford team finds radioactive decay rates vary with the sun's rotation <<http://www.purdue.edu/newsroom/research/2010/100830FischbachJenkinsDec.html>> Accessed 2010 Nov 15

<sup>2</sup>Goldman SL. Science Wars: What scientists know and how they know it. <[http://www.teach12.com/tgc/courses/course\\_detail.aspx?cid=1235](http://www.teach12.com/tgc/courses/course_detail.aspx?cid=1235)> Accessed 2010 Nov 15

3. Even if human knowledge does not change, it is always imperfect and thus is only an approximation to God's revelation.
4. Even if humans had perfect knowledge, their imperfect intellects can lead to erroneous conclusions and interpretations.
5. Even if human intellects were capable of always arriving at correct conclusions, human sinfulness may lead us to choose a wrong interpretation because the right one is not agreeable to us. For example, people may reject Christianity because it rebukes their sins.
6. Even if humans are sincerely seeking truth, they may be influenced by others to accept erroneous theories.
7. Even if people are personally willing to accept the truth and see that the evidence points to a certain conclusion, for the sake of their careers they may publicly support another conclusion in order to be successful in their careers.



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### Superiority of Revelation to Science

If religion is based on a reliable revelation from God, then it is less likely to be subject to these problems. First, religious truth is eternal and unchanging. Second, it is revealed by God himself and not by fallible humans. God has made His revelation simple enough that limited human intellects can understand it. Even nature is a revelation of God and helps us to understand divine truth. Both our direct perception of nature and scientific discoveries about nature reveal divine truth. Facts about nature discovered through science can help us to understand the nature of God and of divine truth. The fullest knowledge of divine truth comes from combining God's revelation to us (in the Bible) with His revelation in nature, interpreted by a sincere heart and guided by the Holy Spirit.

However, it is possible to err even in religious matters; in arriving at ultimate truth based on God's revelation, it is necessary for the human to be sincere or he or she can go astray. Also, nature is imperfect because sin has entered the world, so nature is not always a reliable guide to truth. Human interpretations of scientific discoveries concerning

the natural world are also likely to be erroneous because of our imperfections. This is especially true when human interpretations of nature contradict divine revelation.

### Limitations of the Scientific Method

Next, general problems with the scientific method will be considered. Scientific knowledge is purportedly obtained by the scientific method, in which theories are proposed and tested by experiments. But the scientific method itself is limited in ways that are not always understood or appreciated.

Some areas of science are based on long, complicated chains of reasoning and the integration of many different kinds of evidence. With so many inferences necessary to draw conclusions, it is more likely that errors will arise along the way and that the conclusions may be erroneous. Examples of such areas of science are the origin of the universe, the origin of life, evolution, anthropology, history, psychology, sociology, and economics.

Some areas of science are based on a small number of assumptions (such as Maxwell's equations or the equations of relativity theory). Though it can be difficult to figure out the consequences of these assumptions in some cases, the small number of

assumptions helps to insure that the conclusions are reliable, if the assumptions have been sufficiently verified.

When the assumptions of science have been sufficiently verified, then the conclusions of science are less prone to error. For example, our understanding of physics and chemistry can be verified to a high degree. This is the basis for the spectacularly successful development of technology, including telephones, radio, television, computers, and the internet, as well as space travel and developments in medicine. The benefits of science in such areas cause people to respect what scientists say about other areas such as evolution that are harder to verify. But different areas of science have different standards of verification, so one cannot assume that all areas of science are as successful as areas related to technology. For example, areas of science dealing with past history are difficult or impossible to verify, because conditions may have differed in the past.

Because of the desire of scientists to find simple explanations, they may be biased in favor of excluding miracles and divine intervention from their theories, because supernatural events do not have simple explanations. This

bias can wrongly influence their choice of theories to adopt.

Even though science is limited, some people oppose the scientific establishment unjustly in areas where its conclusions are reliable. For example, some people firmly believe that cars can run on room temperature water as their sole energy source. You can talk to these people all day, but they simply do not have the background and intuition of science to understand that it is impossible for cars to run only on room temperature water as their energy source. They believe that the petroleum industry has a conspiracy to cover up the truth to preserve its profits.

### ***The Role of Human Bias***

Some areas of human knowledge in general, and science in particular, are politically charged. By this is meant that powerful groups have an interest in causing a certain conclusion to be drawn or not to be drawn. Examples of such areas are human sexuality, history, the creation of the world, and the origin of life. For example, because of anti-Semitism some people may deny that the Holocaust took place. Also, in different countries one might get considerably different versions of what happened in World War II. Thus, history can be politically charged. Even medicine can be influenced in this way. Drug companies have an interest in selling drugs, and thus may minimize the dangers and side effects of drugs and the dangers of immunizations. People selling alternative remedies may have an interest in exaggerating the bad effects of drugs and immunizations. There are also controversies over the possible harmful effects of cell phone radiation, and whether global warming is taking place. In areas like this it can be especially difficult to find the truth, and the conclusions reached can have a tremendous impact on human health and well-being. Even government regulatory agencies like the FDA can become biased, because elected officials may be indebted to special interest groups that helped them to get elected and thus may appoint biased individuals to such agencies.

As another example of bias, in the past, cigarette companies have run ads claiming that cigarettes were good for your health and that doctors recommended them.

Also, the meat and dairy industry have an interest in minimizing any possible health problems associated with these foods, and these groups have powerful lobbies in Washington, making it difficult to draw objective conclusions about the health effects of meat and milk. And what about substances in cosmetics that may be harmful to humans? Some companies make large profits from cosmetics. Is this area being studied and regulated as it should be? Another such subject is the possible connection between aluminum and Alzheimer's disease, which has been much debated. The aluminum industry obviously

has an interest in minimizing such a connection and supports much of the research into Alzheimer's disease. It may be difficult for scientists receiving money from the aluminum industry to perform unbiased research in this area.

Of course, theories of the origin of the universe and of life are politically charged, because religious groups have an interest in upholding their views, while those opposed to these religions have an interest in opposing their views. Whatever the reason, it appears that some force or motive is driving the scientific establishment to support the theory of evolution at all costs. Despite the many evidences against evolution that are continually coming to light in genetics, paleontology, and geology, the theory seems impossible to overthrow. The theory is so politically charged that its support does not appear to be based on the evidence, but rather on a philosophical pre-commitment to mechanistic explanations.

In politically charged areas of science, it can be especially difficult to distinguish truth from error because even scientists may be biased in their conclusions, and the public apologists of science may further increase the distortion of the truth.

A free press helps us to learn the truth, but even the press is not always free because reporters may feel constrained only to present material that is approved by the owners of the newspaper or radio or television station. In fact, one reporter even admitted as much publicly at one point and said reporters would be fired if they wrote what they really think.

### ***The Need to Think Critically***

Because of human bias and imperfection, it is important to learn to think critically and to distinguish facts from opinions. Also, in any area of study, the evidences need to be weighed carefully in determining what the facts are, and the interests of the people making statements also should be taken into account. We receive information from many sources, including the web, radio, television, newspaper, magazines, personal experience, and personal contact. Not all of this information is reliable, so it is necessary to learn to be critical and evaluate, and the need for critical thinking is widely recognized.

In view of all this, one may wonder whether it really is possible to know the truth at all, and if so, how one can arrive at it. We might well echo Pilate's question, "What is truth," and despair of ever getting a satisfactory answer. At least a healthy dose of skepticism is appropriate in view of such factors, especially for areas of science that are politically charged and involve long and complicated chains of reasoning.

## ***Bias in Theories of Origins***

The academic world understands the need for critical thought. However, it seems that it has become fashionable today in academia and the scientific establishment to criticize and question everything except the theory of evolution. Those who approach this theory critically are considered as fanatics and excluded from the realm of intellectual discourse in the academic world. Evolution has become the new dogma of academia. The apologists of evolution would have us abandon all critical thought when considering their pet theory.

We are here speaking about attitudes in the academic world. This is comprised of faculty members and others in the secular universities of the Western, industrialized nations of the world. This is a small group, but tremendously influential because of its role in the education of many people, as well as being consulted by government, business, culture, and other areas of society. In general, academics are regarded as the experts in their fields and are highly respected in society. Also, the Western world has a tremendous influence on the rest of the world because of its relative prosperity and advanced technology. The academic world also influences opinion leaders who may not be directly in academia, such as researchers in other institutions and leaders in scientific societies. It is in the academic world that support for evolution is most strongly entrenched. It is also here that a literal understanding of the Bible is most held in contempt, whether in reference to evolution or to other areas. Several centuries ago the academic world held the Bible as the basis of all true knowledge, but since then it has done an about face. Literal belief in the Bible has become anathema in academia.

The scientific establishment also strongly favors evolution and conventional science in general. Academia and the scientific establishment are not identical, but they are closely related. The scientific establishment includes researchers in non-academic institutions as well as publishers of scientific journals and officers in scientific associations.

The problems in the area of creation and evolution are not unique, but instead are a symptom of similar difficulties in many areas of society. Those who are concerned with bias in the promotion of evolution should also be aware of these larger issues where the truth may be sacrificed for the sake of advantage or profit. However, the creation-evolution controversy is unique in a way, because in most areas, one can at least hold a minority viewpoint without being ridiculed, but not so with those adhering to creationism. It is possible to hold a minority viewpoint in many areas of study and still be respected in the academic world, but not concerning the question of whether the theory of evolution is true. Instead, creationists are ex-

cluded from intelligent discourse and sometimes from social interaction.

One reason for the insistence on evolutionary explanations appears to be a commitment among many scientists to mechanistic explanations that exclude miracles and divine intervention. But there is no *a priori* reason for such an exclusion, which introduces additional bias into science.

## ***Discussions of Origins***

Much of the argumentation of evolutionary apologists in creation-evolution discussion groups takes a simplistic approach to the controversy, assuming that if something is “scientific” or even accepted by most scientists, it must be correct. This fails to address the question of who defines what science is, whether they have a right to define science, whether their definition is correct, what it means for something to be scientific, whether things that are scientific are necessarily correct, and if so, how we know that this is true. Also, does it make something true just because it is accepted by most scientists? Many scientists believe whatever their teachers told them, many of them may adhere to the evolutionary orthodoxy for political reasons, and some of them may promote evolution because of opposition to conservative Christianity. There have been quite a few cases where creationists have been removed from their positions because of espousing creationism;<sup>3</sup> this tends to cause scientists to keep quiet about objections they may have to the theory of evolution.

In discussions of origins, the proponents of evolution often say that the question of evolution was decided many years ago, as if the question was settled and need not be further discussed. But science frequently subjects established theories to tests. The theory of relativity and quantum mechanics are often subjected to experimental tests, for example. It is inconsistent for science to test such theories and not to test the theory of evolution to see if it is true. Where are the scientific papers questioning whether evolution is true? However, evolution is so flexible that it is not clear how one would test it. The theory is adapted to whatever data are discovered, so it may even be that evolution has no predictive power and is not properly a theory at all.

Of course, small changes in organisms can be observed and studied, and the predictions of evolution can be tested in this way; this is referred to as micro-evolution. For example, viruses and bacteria can adapt to drugs. However, what is in question is whether an accumulation of changes can cause an organism to transform into an entirely different kind of organism. This is known as macro-evolution.

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<sup>3</sup> Bergman J. (2008) *Slaughter of the Dissidents*. Leafcutter Press

The proponents of evolution extrapolate from observed small changes to large changes that supposedly took place in the past. However, such extrapolation can be unfounded. Newtonian mechanics operates fine at ordinary speeds and distances, but at very high speeds, the theory of relativity comes into play, and at very small scales, quantum mechanics describes reality better than classical mechanics. Thus one cannot extrapolate from the success of Newtonian mechanics in some domains to say that it applies everywhere. Nor can we necessarily extrapolate from present observed changes in organisms to large changes assumed to have taken place in the past.

### **Conclusion**

In view of the limitations of humans and the scientific method, it is important to think critically about the theory of evolution. Questions should be asked such as how likely it is that life could originate spontaneously, whether mutations could generate enough changes to produce new organisms, whether the missing links have been found, whether the geological record supports uniformitarianism or catastrophism, how strong the evidence is for the hundreds of millions of years time span of evolution, and how reliable the scientific method is, considering the prejudices and limitations of scientists. Students should be encouraged to ask these questions and should not be criticized for doing so.

In view of the differences between science and religion, the limitations of the scientific method, and human imperfection, it seems safest to this writer to take divine revelation in the Bible as the most reliable source of truth and to put the conclusions of human science in second place, especially when they conflict with divine revelation. ❧

## **COMING EVENTS**

**Thursday, December 9, 7:00 P.M., Providence Baptist Church, 6339 Glenwood Ave., Raleigh, Room 631**  
Mark Stephens, MCS, will lead a discussion and question and answer session on *Twelve Foundations of Creation and Creation Science Beliefs*. Please bring your special question and your friends and children, 10 and above, to celebrate this Christmas time of the year and to reinforce your faith in our Creator God, who came to this earth as Christ, our Savior. Members of our TASC board and authors will be there to help answer your questions. Topics for your questions will include: What Jesus Christ Had to Say about Creation, Trust in the Genesis Account, Creation Week, The Fall, Worldwide Flood, Noah's Ark, Fossil Record, Dinosaurs, Geologic Column, One True Race, Intelligent Design, and Age of the Earth. See you there for this special fellowship and opportunity to get your questions answered!

Contributions can be made at the TASC web site at [www.tasc-creationscience.org](http://www.tasc-creationscience.org) through any of these major credit cards or through PayPal.



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