



# HOFW NEWSLETTER

December 30, 2008

## *Message from the chair:*

We will watch *Kansas vs. Darwin* during our January 14<sup>th</sup> meeting. The DVD was provided to us free of charge from the Texas Freedom Network. They have asked us to sign Stand Up For Science postcards and put them into one envelope, which they provided. The reason given for the postcards is "By collecting thousands of postcards from across the state, we can put pressure on the State Board of Education to do the right thing and support sound science and the teaching of evolution in our classrooms."

From [www.ffrf.org](http://www.ffrf.org):

## **Creationism--"Science" or Religious Charade?**

**By Russell Lee Ellsworth**

*"One of the most important things to teach in the educational establishments of a democracy is the power of weighing arguments, and the open mind which is prepared in advance to accept whichever side appears the more reasonable."*

--Bertrand Russell

*Freedom and the Colleges, 1940*

The power to weigh arguments, which was so cherished by Bertrand Russell, is under attack in many school districts across the nation. Attempts to inject the dogma of "scientific" creationism into the curriculum or to ban the teaching of evolution have met with varying degrees of success. Laws requiring the teaching of creationism in schools have been struck down in court. But textbook publishers have often yielded to pressure from fundamentalist groups and eliminated references to evolution in order to avoid losing sales.

When the issue of creation vs. evolution is brought up before school boards, a few scientifically literate citizens may be shouted down by more vocal creationists or ignored by apathetic taxpayers. Add to this the results of recent polls which indicate that few Americans have a clear understanding of the truth about creationism or evolution, and the need to explain the scientific background of this matter is obvious.

The evolution vs. creation battle thrives on the misconception that these two schools of thought represent equally legitimate scientific claims, and that the evidence is truly balanced between them. This stems partly from a misunderstanding and an ignorance of the facts in support of evolution, and partly from a misunderstanding of science itself.

The often-stated premise that "evolution requires faith" further serves to misinform. The public is all too often ready to believe that scientists are only pretending to be objective. Creationists fully understand that few scientists, never mind nonscientists, can be personally cognizant of all aspects of the universe which are currently known. They take advantage of this with arguments which are so absurd when studied carefully that only by their sheer volume do they overwhelm and mystify the unwary.

For example, creationists have claimed that evolution violates the Second Law of Thermodynamics, and offer their own definition of that law as proof. Only someone well-versed in physics or engineering would recognize the discrepancy between the creationist version and the law as it is accepted by scientists.

Similarly, few nonscientists can comfortably argue with a creationist who claims, based on data about its magnetic field, that the earth must be very young.

## **What Is Creationism?**

Creationism, or creation science, is the view that the Earth and all its inhabitants came into being approximately 6,000 to 10,000 years ago, and that since then, no substantial changes have occurred in the form and structure of those inhabitants. Though they will often avoid mention of God and the bible in the public debate, creationists derived their views from the creation story told in the first 11 chapters of Genesis. Creationism denies the fact that the earth is 5 billion years old, that the universe is far older and that modern plants and animals have evolved from earlier forms.

In short, creationism is the belief that the Book of Genesis is a literal description of the creation of the world and the early history of humankind.

## **Why Creationism Is Unscientific**

The pursuit of scientific inquiry is based on two very basic premises.

First, any scientific conjecture must be open to being disproved. A scientific hypothesis must allow for some fact or event which, if observed, would show the hypothesis to be false. This is the property of testability.

Assertions that are untestable are not scientific.

An example of an untestable assertion is the argument set forth by creationists when faced with the great age of the universe. We know that the universe must be very old because of its great

size and the fact that the speed of light is finite, representing a cosmic speed limit for all matter. When we look into the farther parts of the universe we are looking into the past. If we can see an object (such as a nearby star) which is four light-years away, we are actually seeing its light after a four year journey. When we observe a galaxy which is billions of light years away, we are looking billions of years into the past.

But the creationists assert that the universe was created with an *apparent age*. (After all, Adam was created as a fully grown man.) The illusion of a very old universe exists, says the creationist, because the streams of light from the stars were created when the universe itself was created.

Science cannot refute such an absurd claim; it is not falsifiable. If the doctrine of apparent age were accepted, then there is no conceivable way in which to argue any point about the origin of the universe or life on earth. Fossils will not represent dead creatures, radioactive decay cannot be used to measure the age of objects, and the movements of the continents cannot be safely extrapolated beyond the beginning of one's own lifetime. For this reason many creationist assertions about the universe are unscientific.

A second aspect of science is that the truth follows from an unbiased study of the facts, rather than the facts proceeding from some conclusion made in advance.

Creation science, however, does not comply with this basic scientific process. The underlying assumption--the literal truth of the bible in general and the Book of Genesis in particular--is not questionable. Evidence contrary to creation is discarded not because there are any arguments against that evidence but because it contradicts the notion of creation. No evidence is offered in favor of creationism which is not easily refuted.

Certainly the bible is offered as evidence, but however much people of faith may wish to believe in its words it does not constitute scientific evidence. The moral value which some people place in a book or object has no bearing on its intrinsic value in describing the universe. Indeed, like any complicated work of literature, the bible is open to a myriad of interpretations. In the past it has been used to support flat-earthism and geo-centrism. There are people alive today who, based on the bible, believe the earth to be flat, while others maintain that the sun revolves around the earth.

Consider the fact that scientists prior to the past few centuries were themselves creationists, since no better description of life was known before the last century. However, the foundation for the discovery of evolution was laid long before then. Geologists and physicists had many reasons to reject the literal interpretation of Genesis based on their disciplines, without even an inkling of evolutionary thought. The worlds of geology and physics simply did not match a six-day creation. Biology was the latest field to catch up.

With our better understanding of the world, creationism has been reduced to a religious definition of the universe. Scientists are not in the business of validating or invalidating religious doctrine. Creationism is therefore safe, as religion. It can be accepted or rejected based on

criteria other than evidence, and science has no role in this. As a science, creationism is on par with Astrology, I Ching, and Numerology.

The science of evolution does not require faith in the same sense that religion requires faith. It does, however, require acknowledgment that the collective wisdom arrived at over centuries by men and women struggling to understand the universe is a solid basis for further knowledge.

## **Equal Time for Creationism?**

The opening quote by Bertrand Russell can be misinterpreted as supporting the concept of *equal time* for creationism. Equal time usually refers to the side-by-side teaching of both evolution and creationism as if the two were equally valid scientific claims about the origin of life. However much this may appeal to our sense of justice, it is an improper way to teach. Creationism seeks to befuddle the open mind.

Not all viewpoints are given equal weight in any subject. Each is given attention proportional to its legitimacy. For example, the historical reality of the holocaust is taught in our schools, while the notion that the holocaust is an Israeli invention designed to advance the cause of Zionism is studied, if at all, only to expose the prejudices of those who make such claims (such as Neo-Nazis). In the same way creationism should be studied to expose the fallacies of the arguments, and not presented as if the scientific community is divided on the matter.

## **What Can You Do?**

Preventing the religious dogma of creationism from being taught as science in your school district requires active participation in the educational process.

**Understand creationism.** "Know your enemy." Creationist claims represent a high level of intellectual dishonesty. It is essential that you understand the fallacies they present.

**Understand the facts about evolution.** There are many informative and thoroughly enjoyable books on the subject. Check your local library or bookstore for such titles as *Scientists Confront Creationism*, edited by Laurie R. Godfrey (Norton); *Science on Trial: The Case for Evolution*, by Douglas J. Futuyma (Pantheon); *The Blind Watchmaker*, by Richard Dawkins (Norton); *The Emergence of Man*, by John E. Pfeiffer (Harper & Row). Also, any collections of essays by Stephen Jay Gould and Isaac Asimov will both educate and entertain.

**Be aware of your school district's science curriculum.** Ask your children's teachers about what they teach in science classes, starting at the earliest grades. Equal-time laws have been struck down by the courts, which is helpful if you must challenge a school board.

**Help educate the public.** Many newspapers are very good about printing coherent and reasonable letters concerning controversial matters.

**Don't be lulled into compromise.** When it comes to your children's education, compromise is a dirty word. Accepting equal time is selling out. Likewise, removing the study of evolution (from the few places it exists) is unfair to your children. Since so much of scientific knowledge involves acknowledgment of concepts opposed to creationism, what is left may be so watered down as to be useless. Everything from astronomy, paleontology, and geology to physics contradicts creationism.

**Enlist help.** Things can get tough when you fight alone. Many educators would love to help. If creationism is taught as fact in even a single public classroom, then the freedom that comes from knowledge is endangered.

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