

The LDS Church and Evolution

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In LDS-oriented email discussion lists, blogs and other online forums, and even in some LDS scholarly writings, it is not at all unusual to see vigorous debates about evolution, the age of the earth, or what various LDS general authorities have said pro or con on these topics. I must confess that I find these discussions to be rather tiresome at this point in time. I think it is high time we accepted natural processes such as evolution as the means by which the creation was performed and moved on. To prolong the discussion at this point is, in my view, both futile and counter-productive to faith. Here is why.

I. Overview of Current Scientific Evidence

Once one could reasonably argue that there are uncertainties in geological dating, or that there are many “missing links” in the fossil record, or that the fundamental mechanisms of heredity and evolution are not known. But now things are different.

That the earth itself is approximately 4.5 billion years old, with a progression of living organisms through hundreds of millions of years, is now very well established. Tens of thousands of precise radiometric measurements have been made, using different techniques, and they all fit together. Some have argued that these measurements are based on a “uniformitarian assumption,” but scientists have very good reasons to assume that the laws of physics have been unchanged for eons – as a single example, light spectra from stars millions of light years away (which rays were emitted millions of years ago) have the same structure as light rays on earth today.

With regards to the fossil record, important new fossils, including hominid fossils, are announced on almost a weekly basis. It is ironic that in several cases, fossils have been found in precisely those “gaps” that have been highlighted by critics of evolution as fundamentally unbridgeable. For example, recently several convincing intermediate fossil species have been discovered in the transitions between fish and four-legged creatures, and between land mammals and marine mammals.

The process of evolution has recently been exhibited in ways obvious to everyone. This includes changes observed in the resistance of certain diseases to medicines, and changes in the AIDS virus since it was first discovered. Scientists have even discovered instances of present-day species that are in the process of splitting into distinct species. For example, a certain salamander species in California is noticeably different in the north end of California’s central valley than it is in the south, so much so that salamanders at one end can no longer interbreed with those from the other.

The recent explosion in DNA data has provided a large body of virtually incontestable evidence of evolution. Scientists no longer have to rely on vague similarities in appearance between different species – now the evolutionary distance between species can be objectively and quantitatively measured. For example, the 141-long alpha chain

of the hemoglobin molecule is identical in chimpanzees, differs in only one location in gorillas, yet differs in 25 locations in rabbits and in over 100 locations in fish. In a similar way, scientists have identified the precise mutations in our DNA that have deactivated our ability to produce ascorbic acid (vitamin C).

This research is backed up by many thousands of peer-reviewed studies, and vigorous debate in the field ensures that any weakly supported or imprecisely argued claims are ripped apart. Too bad the religious world doesn't subject itself to such rigorous analysis!

II. Creationism

A small group of “creation scientists,” mostly from fundamentalist Christian sects (but with some supporters among Latter-day Saints), has criticized the conventional scientific theories of evolution. The most sophisticated of their arguments are based on probability, but these arguments widely regarded as fallacious. A typical flaw is presuming that a given system arose as a single all-at-once random shot, instead of a step-by-step process over many millions of years.

The creationist literature goes downhill from here. For example, creationists often say that evolution is impossible because it is contrary to the second law of thermodynamics. Sadly, even some LDS writers have adopted this line. But this law only applies to closed systems, not to the earth's biosphere, which is continually receiving prodigious amounts of energy from the sun. Using the creationists' argument, one could just as well conclude that snowflakes, convection currents in pots of hot water, as well as all other spontaneously organizing phenomena, are fundamentally impossible.

Some of the creationist writings are so ludicrous that I don't know how any intelligent person can read them and hold a straight face. One of these is the notion that all of the worldwide geological layers were deposited during Noah's flood, and that the reason more advanced animal fossils are found near the top is that they could swim better. If so, then why are the geological layers so well defined? What about infants, the sick or the aged – why didn't they sink to the bottom? Why are various species of fish, for instance, found at certain well-defined geological levels and not at any others?

III. Intelligent Design

One recent development in this area is the “Intelligent Design” (ID) movement. These scholars generally accept the overall timeline and account of the multi-million-year evolutionary process. However, they insist that certain aspects of the creation cannot be explained as a natural sequence of events and require an “Intelligent Designer.” So far the overwhelming consensus of the scientific community is that ID scholarship is not legitimate science. Similarly, courts have consistently ruled that ID is religion, not science, and inappropriate to be taught or promoted in public schools.

For example, ID scholar Michael Behe has argued that certain biological structures are “irreducibly complex” – they consist of multiple parts that all must be present

simultaneously for the system to function, and thus could not have arisen from a sequential evolutionary process. But in the examples Behe has highlighted, scientists have demonstrated that the independent parts in question arose for one purpose and were subsequently combined for another purpose. For instance, analysis of DNA has established that the flagellum of the bacteria *E. coli*, claimed by Behe to be an irreducibly complex structure, is closely related to the “needle” used by some microorganisms to inject toxins into a host organism.

ID scholar William Dembski has argued, using arcane mathematical reasoning, that there is a “Law of Conservation of Information” in biological processes, so that natural evolution cannot generate truly novel structures. But mathematicians who have examined these arguments are not convinced, and numerous natural examples can be cited where natural evolution has generated novel biological systems. For example, in 1975 Japanese biologists discovered a strain of bacteria that was thriving on nylon waste, a substance that did not exist until 1935. When they examined this species, they found that it had arisen by a rare “frame shift” mutation that by chance enabled it to metabolize nylon. In a more recent case, scientists found that a bacterial culture acquired, by a sequence of mutations, the ability to metabolize citrate, which ordinary strains are completely unable to utilize.

Astronomer Carl Sagan once wrote, “extraordinary claims require extraordinary evidence.” ID has not offered extraordinary evidence to back up its extraordinary claims. Readers interested in additional details on these topics are referred to any of several recent books written by prominent scientists, such as the following. In this list, authors Fairbanks, Stephens and Meldrum are active Latter-day Saints. Miller is a practicing Roman Catholic. Prothero is Jewish.

Sean B. Carroll, *The Making of the Fittest: DNA and the Ultimate Forensic Record of Evolution*, W. W. Norton, 2007.

Daniel Fairbanks, *Relics of Eden: The Powerful Evidence of Evolution in Human DNA*, Prometheus Books, 2007.

Kenneth R. Miller, *Finding Darwin's God: A Scientist's Search for Common Ground Between God and Evolution*, HarperCollins, 1999.

Kenneth R. Miller, *Only a Theory: Evolution and the Battle for America's Soul*, Viking, 2008.

Donald R. Prothero, *Evolution: What the Fossils Say and Why It Matters*, Columbia University Press, 2007.

Trent D. Stephens and Jeff Meldrum, *Evolution and Mormonism: A Quest for Understanding*, Signature Books, 2001.

IV. Geology and Evolution at BYU

The conventional scientific theories of geology, paleontology, botany and zoology are taught at Brigham Young University and BYU-Idaho, with the full approval of the administration and the Board of Trustees. BYU has a number of very well respected scientists in these departments, and they have published numerous notable studies in the field. Until recently the world's largest collection of dinosaur fossils was stored under the BYU football stadium. Not one of the numerous LDS scientists in these departments at BYU or BYU-Idaho espouses creationism or ID.

V. Religious Implications

In recent years the LDS Church has made it clear that members are free to espouse any viewpoint they wish on topics such as the timetable and processes employed in the creation. As a letter from the LDS First Presidency declared in 1931, "Leave geology, biology, archaeology, and anthropology, no one of which has to do with the salvation of the souls of mankind, to scientific research, while we magnify our calling in the realm of the Church." The official statements by Church leaders can be found in this reference:

William E. Evenson and Duane E. Jeffery, *Mormonism and Evolution: The Authoritative LDS Statements*, Greg Kofford Books, 2006.

Some, mostly from evangelical sects, in an attempt to reconcile a very literal reading of scriptures with modern science, have suggested that God deliberately created the earth out of thin air about 6,000 years ago, complete with an intricate system of fossil-laden, radiometrically dated rocks, together mutation-laden DNA in living organisms, plus hundreds of other lines of evidence, all pointing to a very old evolutionary origin. Some writers (such as creationist Duane Gish) have soberly advanced the notion that God created the entire universe at this time, complete with light rays already streaming on a path to the earth from stars millions of light years away. I submit that God the Great Deceiver, having performed a deliberate fraud of inconceivably wide scope, is utterly unworthy of our worship or obedience. My God is a God of truth, reason and rationality, who rewards diligent, honest seekers of truth with ever-grander rewards of knowledge.

Only a few (LDS or otherwise) subscribe to such extreme notions. Nonetheless, Latter-day Saints who cling to highly literal readings of the creation scriptures will increasingly find themselves in league with this evangelical, infallible-Bible wing of Christianity. Ironically, some of these same groups have been most active in attacking the LDS Church and have produced most of the anti-Mormon propaganda currently being distributed. Would allying with such groups have been the wishes of Joseph Smith, Brigham Young and other founders of the LDS faith?

Joseph Smith shocked his contemporaries by asserting that the Bible is incomplete, has numerous incorrectly translated passages, and is not necessarily 100% inspired (facts that are amply confirmed by modern biblical scholarship). He also taught, contrary to orthodox Catholic and Protestant doctrines, that God's miracles are not contraventions of

natural law, but that instead God works within the realm of natural laws, and that we can discover these laws by diligent study and faith. He specifically denied the doctrine of creation ex nihilo.

Brigham Young was even more explicit in rejecting a highly literal reading of the creation scriptures: “As for the Bible account of the creation we may say that the Lord gave it to Moses, or rather Moses obtained the history and traditions of the fathers, and from these picked out what he considered necessary, and that account has been handed down from age to age, and we have got it, no matter whether it is correct or not, and whether the Lord found the earth empty and void, whether he made it out of nothing or out of the rude elements; or whether he made it in six days or in as many millions of years, is and will remain a matter of speculation in the minds of men unless he give revelation on the subject. If we understood the process of creation there would be no mystery about it, it would be all reasonable and plain, for there is no mystery except to the ignorant.” [Brigham Young, *Journal of Discourses*, vol. 14, pg. 116 (May 14, 1871).]

Twentieth century LDS leaders generally continued this open-minded theme. Elder James E. Talmage, for instance, wrote: “The opening chapters of Genesis, and scriptures related thereto, were never intended as a text-book of geology, archaeology, earth-science or man-science.” [Elder James E. Talmage, “The Earth and Man,” LDS Church, 1931].

Elder B. H. Roberts summed up this discussion quite well:

“On the other hand, to limit and insist upon the whole of life and death to this side of Adam’s advent to the earth, some six or eight thousand years ago, as proposed by some, is to fly in the face of the facts so indisputably brought to light by the researcher of science in modern times, and this as set forth by men of the highest type in the intellectual and moral world; not inferior men, or men of sensual and devilish temperament, but men who must be accounted as among the noblest and most self-sacrificing of the sons of men – of the type whence must come the noblest sons of God, since ‘the glory of God is intelligence’ (D&C 93:36); and that too the glory of man.

“These searchers after truth are of that class. To pay attention to and give reasonable credence to their research and findings is to link the church of God with the highest increase of human thought and effort. On that side lies development, on the other lies contraction. It is on the former side that research work is going on and will continue to go on, future investigation and discoveries will continue on that side, nothing will retard them, and nothing will develop on the other side. One leads to narrow sectarianism, the other keeps the open spirit of a world movement with which our New Dispensation began. As between them which is to be our choice?” [Brigham H. Roberts, *The Truth, the Way, the Life: An Elementary Treatise on Theology*, 1930 (republished in 1994), pg. 363-364.]

VI. Conclusion

Growing up in Utah, with its dramatic mountain skyline exposing intricate, convoluted geological layers, and with amazing treasures of ancient fossils (from seashells to dinosaurs), I am struck by the thought that God led the LDS people to this region so that they would not be seduced by creationism and biblical literalism. Why then do so many LDS still cling to fundamentalist notions, even today? It beats me!