

SCIENCE AND THE CHURCH: FRIEND OR FOE

Edmund J. Williams—Department of Geology

DO SCIENCE AND RELIGION CONFLICT?

The truths of science will not conflict with the truths of religion .

Are we required to make a choice between the teachings of science and the teachings of religion? Traditionally science and religion have been in conflict, as illustrated by Galileo and his struggle with the Vatican concerning the behavior of the Earth, its position in the universe, and other processes in the Solar System. It turns out that Galileo was right. The conflict is not as intense now as in past years, as science has sharpened its skills and reliability, and religion has become more tolerant to scientific views. The truths of science will not conflict with the truths of religion although man's interpretation of either may be seriously flawed. Many think that we must make a choice between science and religion. A careful look at the reality of science and the truths of religion show that the two do not conflict, but in fact support each other. It appears after all that we do not need to take sides.

Let's look at the ways that science and the LDS religion support each other.

Most people in the LDS Church believe that the creation of the earth and everything in the universe was accomplished using natural law (Doctrine and Covenants 130:20,21). It seems that the Creator is a scientist, not a magician. If natural law is used in the creation, there should be a correlation between science and religious truth. The gospel tells who created the earth and its life and why. In the eyes of LDS scientists, we are trying to find out how the creator created this earth and its life, and when. Let's look at the ways that science and the LDS religion support each other.

WORD OF WISDOM

The word of wisdom was given to Joseph Smith in 1833 and is recorded in Doctrine and Covenants Sec. 89. Science has documented well the health risks of tobacco, alcohol, eating habits, and other areas supporting what was revealed to Joseph Smith more than 150 years ago. Those who do not heed these warnings from both science and religion must have too many rocks in their pocket. The Word of Wisdom was revealed long before the health hazards were realized. This is testimony that the Joseph Smith was not just a good playwright but a true Prophet in these latter days.

ORDER IN THE CREATION

As science studies the earth, there is found a definite order in the creation of the earth and its life. The order is generally the same as revealed to the ancient prophets Abraham (Abraham: 4&5) and Moses (Moses 2 and Genesis 1&2). Many think that some of these scriptures are the spiritual creations, not the physical creations, although Abraham 4&5 has all the indications of a physical creation. It appears the two may be similar since our spirits were born of parents in a very similar way to how we were born into the physical world. It seems logical that other aspects of the creation would be similar in both realms.

ORDER: NOT CONFUSION

This may fit into the above heading, but merits some separate consideration. The earth shows a definite order in the creation, following a definite plan in which physical laws were followed. For example, the principle of Faunal Succession states that “Plants and animals appear in the geologic record in an orderly fashion.” This is not a theory but one of the realities of the earth. Our interpretation of this reality is theory. Fossils are the documentary record of the history of life on the earth. Food chains are also seen in the fossil record. A form of life did not appear in the fossil record unless there was a preexisting food supply. Also, ancestors of today’s life are seen as fossils. The bottom line is that the Creator seems to have followed natural laws in a orderly way to create the earth and its life.

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LIFE STARTED IN THE WATER

The fossil record shows that life started in the water since the oldest very simple forms of life are found in very old Precambrian marine sedimentary rocks. The fossil record also shows that through time life diversified and many kinds of life appeared, each kind an improvement over the ones before it. The record in the rocks shows early life existed in the water for more than three billion years before the first land life is seen in the fossil record. Abraham tells us in 4:20&21:

And the Gods said: Let us prepare the waters to bring forth abundantly the moving creatures that have life; and the fowl, that they may fly above the earth in the open expanse of heaven. And the Gods prepared the waters that they might bring forth great whales, and every living creature that moveth, which the waters were to bring forth abundantly after their kind; and every winged

fowl after their kind. And the Gods saw that they would be obeyed, and that their plan was good (See also Moses 2: 20-21).

**In nature everything
does reproduce
after it's own kind.** Incidentally, in nature everything does reproduce after its own kind. That is a very good law given to life and made reference to in the scriptures. A concept of science is that different species (kinds) cannot reproduce and produce fertile offspring. If this law was not in effect, we would have cogs, dats, gerelephants, etc. It seems to be an important rule for the creation of life in the past and still applies to modern life.

ARE FOSSILS THE HISTORY OF LIFE ON THE EARTH OR SOME OTHER WORLD?

Some believe that the earth is made up of parts of other worlds that predate the earth and fossils are of the life that lived on those other worlds. Fossil or Faunal Succession mentioned above greatly complicates this hypotheses. Henry Eyring, the great LDS scientist and father of Elder Henry B. Eyring, once said as he visited my geology class at Ricks when his son was President at Ricks, "It would take a very fancy shovel to put this earth together with the oldest rocks containing the simplest forms of life, gradually getting more complex through time." Also, much evidence shows the earth was molten in the early stages of the creation, which would have destroyed all evidence of former life and rewound the atomic clocks used in dating the rocks. The fossil record seems to be the history of life on this world, which shows a long, orderly, complex, and fascinating history. Even though there is no detailed account of the creation in the scriptures, there was left a graphic record of the creation in the rock record of the earth. Understanding that record is the key to finding the energy and raw materials to manufacture and use the automobiles, telephones, airplanes, and other tools to provide the modern way of life we enjoy and allow the Gospel to be taken to the whole earth.

EARTH WAS MADE FROM MATERIAL THAT ALREADY EXISTED

The Prophet Joseph Smith was the first religious leader ever, that I know of, to state that the earth was created or "organized" from material that already existed (Abraham 4:1). Previous to Joseph Smith, the religious ideology was that the earth was made from nothing about six thousand years ago. The laws of physics state that matter can neither be created nor destroyed, only transformed. Here is another truth revealed through the Prophet Joseph Smith that complies with a basic concept of science.

ORIGIN OF WATER ON THE EARTH

The origin of water on the earth is thought to be the result of a combination of events. Comets that are composed mainly of water have bombarded the earth for billions of years and have brought water from all parts of the universe. Another source that has provided most of the water is out-gassing from the interior that accompanies volcanic eruptions. It is not uncommon for a volcano to emit thousands of tons of water per day from two sources. The cloud seen during an eruption is mostly water in the form of steam mixed with volcanic ash. In Abraham 5:6 - "... there went up a mist from the earth, and watered the whole face of the ground." A mist from the earth is a very good description of the steam cloud produced by a volcanic eruption.

THE UNIVERSE

I have always had a fascination with the universe. In my younger years, my father was always pointing out the stars and constellations in the night sky as he told me about the wonders of the universe.

My first real exposure to God's hand in the universe was when I was about 14. Our neighbor and friend we called Charlie was not a member of the Church. He and his wife had immigrated from Germany and we were trying to fellowship the Charles family. Charlie was not a religious man and kept a bottle of whiskey in the tool box of his tractor and would make trips into the field on the tractor to do all his errands so he could take a swig where his wife could not see him. Her wrath was detrimental to his physical being if she caught him drinking.

Charlie had been ill, so Dad and I were helping by harvesting his hay. One night I had just finished mowing his fields and it was just getting dark. Even though Charlie was not feeling well, he had his home-made telescope set up. It was a six inch reflector that he had made from scratch including grinding the mirror by hand.

We spent an hour or more looking at Jupiter and its moons, Saturn and its moons and rings, and a nebula or two. As Charlie was telling me about the wondrous things we were looking at, his voice was filled with emotion. As I looked closer in the dim light, there were tears in his eyes. As we neared the end of the astronomy lesson, Charlie told me something that I will never forget. He said with a German accent, "I do not know much about God, but there must be one because of the beauty and order that I see and feel as I look at and study this wondrous universe." Yes, I agree with Charlie. It is too complex and beautiful to exist as a result of chance.

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HOW BIG IS THE UNIVERSE?

Our earth and the rest of the Solar System is but a tiny part of a vast and much larger universe. Astronomers study the universe with radio telescopes, the Hubble Space Telescope, the giant Keck telescopes on Mauna Kea in Hawaii, and other equipment. These instruments tell us something about the vastness and beauty of the universe. As we make bigger telescopes, we can see further into space. Our visual limit into the universe is presently about 14 billion light years. Light traveling at 186,000 miles per second has been on its journey for that long and that fast just to get from there to here. Our sun is just one of two or three hundred billion stars in our giant spiral galaxy we call the Milky Way. A close “next door neighbor,” a giant spiral galaxy M31 in Andromeda is about 2,200,000 light years away and it contains another two or three hundred billion stars. There are hundreds of billions of galaxies within view of our modern telescopes. There are an estimated two hundred million galaxies within the area of the sky covered by the cup of the Big Dipper. There are hundreds of billions of galaxies. We keep finding more and more as we build bigger telescopes. Astronomers tell us that there are more stars in the sky than grains of sand on the earth.

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SCRIPTURES AND THE VASTNESS OF THE UNIVERSE

Some Old Testament prophets knew a lot about astronomy and the universe. Abraham was shown the Universe and the creation of the Earth as recorded in Abraham 3:11-12. “Thus I, Abraham talked with the Lord, face to face, as one man talketh with another; and he told me of the works which his hands had made; And he said unto me: My son, my son (and his hand was stretched out), behold I will show you all these. And he put his hand upon mine eyes, and I saw those things which his hands had made, which were many; and they multiplied before mine eyes, and I could not see the end thereof.” I have the same feelings as Abraham as I study the enormous universe we are a part of.

If our sun is one of an incomprehensible number of stars, and stars are suns, how many other earths are there out there? Six years ago astronomers had not discovered any other planets, but at the time of this writing astronomers have discovered close to 50 planets orbiting stars. That number will greatly increase now that we have found ways of detecting them, and astronomers say there may be billions.

The Book of Moses in the Pearl of Great Price gives us a good scriptural account of the vastness of the universe in Moses 1:33, & 35. “And worlds without number have I created; and I also created them for

mine own purpose; and by the Son I created them, which is mine Only Begotten.... But only an account of this earth, and the inhabitants thereof, give I unto you. For behold, there are many worlds that have passed away by the word of my power. And there are many that now stand, and innumerable are they unto man; but all things are numbered unto me, for they are mine and I know them.” Another scriptural reference testifying of the size of the universe is in Moses 7:30. “And were it possible that man could number the particles of the earth, yea millions of earths like this, it would not be a beginning to the number of thy creations...” More stars than grains of sand on the earth? Yes! Once again science supports revealed religion.

My students sometimes ask me what is beyond the seen universe. My answer is: “Lots and lots of unseen universe.” I wonder if there is no end to space. I also wonder if there is no end to the number of galaxies that fill that space. Are there other universes beyond the one we know? If not, what a terrible waste of space.

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IS RELIGION THE ANSWER TO EVERYTHING?

Religion does not give us a complete view of the physical world and how it operates, or the natural laws that operate in the universe. Neither does science supply answers to questions about the spiritual world. Only through the marriage of the two can one find the more complete picture of the physical world, and its relationship to the Creator. Religion in this context is the study of God, his ways and purposes. Science from this standpoint is an attempt to understand the how, why and when of the creation. As a scientist trained in the science of the earth, and one that has a testimony of the Creator of this world, I have trouble separating my geology from my theology.

Carl Sagan, the great astronomer, made this statement about the relationship of science and religion. “Similar objective, different methods.” It seems that the quest of both science and religion is to find out who we are and our place in the universe. So why should science and religion be in conflict? Those who think there is a conflict must have an incomplete understanding and misinterpretation of either or both. Science is always under intensive investigation and revision as new truths are discovered. Personal and non-doctrinal views concerning the methods of creation should also be subject to investigation and revision as new truths are discovered and revealed. It is thought by many that discoveries of science are a form of revelation. Truths of science or religion will not conflict.

The conflict arises when one uses philosophical and personal argument to explain natural phenomenon.

Many let invalid personal views stand in the way of truth. Personal views should also be subject to challenge, change and revision. One responsibility of science is research and revision as new information is discovered. The error many people make is to mistake personal views for truth and teach them as if they are doctrine and fact. Who are we to tell the Creator how he did or did not make the universe, the earth and its life? He did not tell us the details of the creation. Why? I believe one reason we are here is to experience and learn about this earth. I also believe great teachers do not tell the students all the answers. Our mentor, the creator, has left us to figure out the details of the creation.

DOES SCIENCE HAVE ALL THE ANSWERS?

Henry Eyring, mentioned earlier, also told us in my class. “We do not have to believe in anything that is not true.” That seems to make the dilemma simple, but we must do our homework to find out if an idea or concept is true. Sometimes we must answer a question with a comment that I often quote to my students: “I do not know, and I do not know anyone who does know, and you can quote me.”

WHAT DO LDS SCIENTISTS SAY?

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There are still those that believe that science and religion are still not compatible, but many LDS scientists find the opposite is true. As we understand more about the creation of the earth and its physical laws, we find that there is less and less conflict. After all, truth must not contradict truth. There are truths in both science and religion. Every theory in science is subject to challenge. Theories are sometimes proved wrong or must be modified as we study and learn. That is why a theory is so useful. It is a tool or scaffold by which scientists build the truths of the physical world. If a theory is proven wrong by continued research, that is not the end of the world for science. It is part of the scientific method, a learning process that allows the advancement of science.

There are several ways that truth can be obtained; two are: Revelation, and Empirical methods. The 9th Article of Faith tells us about revelation: “We believe all that God has revealed, all that He does now reveal, and we believe that He will yet reveal many great and important things pertaining to the Kingdom of God.”

Empirical knowledge is the main method used by science to search for truth. It has also given us “many great and important things.” Through

this method we have found about the physical world such as understanding the atom, vastness of space, computers, medicine, and other truths that help shape the modern way of life we enjoy today, and bring about the spreading of the Gospel.

Someday we will know all the answers as promised in Doctrine and Covenants 101:32-34. “Yea, verily I say unto you, in the day when the Lord shall come, he shall reveal all things—Things which have passed, and hidden things which no man knew, things of the earth, by which it was made, and the purpose and the end thereof—Things most precious, things that are above, and things that are beneath, things that are in the earth, and upon the earth and in heaven.”

I quoted the above scripture once at the end of an Education Week program in Dillon, Montana, and said we would have to wait until the Lord comes and have our questions answered. All the students left except one. He asked me: “We are in the last days aren’t we?” I agreed. His reply was: “I do not think we have to wait until the Lord comes. I think these things are being revealed now by people like you,” and pointed at me. I said: “That puts me in a scary position. I am not sure I want that responsibility.” His reply is one that I will never forget: “Nevertheless, who is better qualified than LDS scientists to discover the truths of this earth?” I have thought a lot about that charge since then. Now, I want to turn that finger around to point directly at you the reader and the youth of today. Who is better qualified to discover these truths and answer these questions than you? That challenge is yours. Live a life in tune with the Creator of this world, that you can seek and learn, and let the truths of this world be revealed to and through you.

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**Live a life in tune
with the Creator.**

FRIEND OR FOE

The title of this essay is easy to answer. The subtitles above answer many questions concerning the relationship of science and LDS theology. There are many more questions, but a study of each is the key to resolving and understanding these questions. I believe the discoveries and advancements of science are bringing science and religion closer together.

In the 30th chapter of Alma, Korihor the Antichrist said in verse 43, “If thou wilt show me a sign that I may be convinced that there is a God.” In the latter part of verse 44 Alma replies: “...all things denote there is a God; yea, even the earth, and all things that are on the face of it, yea, and its motion, yea, and also all the planets which move in their regular form do witness that there is a Supreme Creator.” I add my testimony to that of Alma, Charlie, and others. This earth and the universe that it is a part of is

put together in an eloquent, unique and beautiful way that testifies of the power, knowledge, and love of the Creator. ∞

ADDITIONAL WRITINGS OF LDS SCIENTISTS:

Sessions & Oberg, editors. *The Search For Harmony—Essays on Science and Mormonism*. Salt Lake City: Signature Books, 1993.

Clark, David L. *Of Heaven and Earth: Reconciling Scientific Thought with LDS Theology*. Salt Lake City: Deseret Book, 1998.