Creationism, Postmodernism, and Mormonism

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The LDS movement was founded on a premise that the Bible is neither complete nor inerrant. As LDS Apostle James E. Talmage wrote, "The opening chapters of Genesis, and scriptures related thereto, were never intended as a textbook of geology, archaeology, earth-science, or man-science." Further, Mormonism, from its founding, has traditionally seen God as working within the realm of natural law. As LDS Apostle Parley P. Pratt wrote, "Among the popular errors of modern times, an opinion prevails that miracles are events which transpire contrary to the laws of nature, that they are effects without a cause. If such is the fact, then, there never has been a miracle, and there never will be one." This notion immediately suggests a truce in the age-old "war" between science and religion: God works within, rather than without, the realm of natural law.

In spite of this open-minded tradition, many LDS people remain acutely uncomfortable with modern science, particularly the notion of a multi-billion-year-old earth and natural evolution of living species. So some have become enamored with the "creation science" movement (or its more trendy counterpart "intelligent design"), while others have endorsed the movement variously known as "postmodern science studies" or "sociology of scientific knowledge" (SSK). This short article will give some background on these movements, particularly SSK, and explain the difficulties of attempting to ally with them. By way of clarification, in the following I will use "creationism" as shorthand for both the creation science and intelligent design movements, even though they differ somewhat in their approach. Along the same line, I will use "postmodern" and "postmodernism" as shorthand for the "postmodern science studies" (i.e., SSK) movement, even though postmodernism more generally is a broad field of study with useful insights in many arenas. See, for instance, this commentary by LDS scholar Armand Mauss: http://www.cesnur.org/2009/slc_mauss.htm.

Detailed papers on intelligent design and postmodernism (in the specific sense of postmodern science studies) by the present author are available here:
http://www.dhbailey.com/papers/dhb-intell-design.pdf
http://www.dhbailey.com/papers/dhb-postmodern.pdf

Creationism

In recent decades the "creation science" and "intelligent design" movements have been formed, mostly by evangelicals, to oppose modern science in general and evolution in particular. These writers have suggested that there are large "gaps" and unexplained phenomena in the traditional theories that scientists are furtively trying to cover up, and that objective analysis of the data not only permits but actually demands a divine hand in the creation. (Is faith no longer required?) Scientists, including some who are devout religious believers, have responded by countering that:

1. Creationists have greatly exaggerated "controversies" in the field, such as recent debates about the "punctuated equilibria" view of evolution.

2. Creationists continue to claim major "gaps" in the fossil record, even though virtually all major "gaps" have been filled with recent discoveries of transitional fossils.
3. Creationists continue to employ fallacious arguments based on probability or the second law of thermodynamics, even though these fallacies were pointed out by scientists many years ago.
4. Creationists completely ignore much of the recent evidence for evolution, such as DNA and protein sequence data comparisons among different species.
5. Creationists often exhibit a very poor understanding of the underlying scientific issues.
6. Creationists often employ gratuitous technical jargon and pseudo-mathematical notation to give their work a superficial veneer of scientific respectability.

As an example of #6, William Dembski, a leading figure in the intelligent design movement, invokes probability theory and information theory in arguments against Darwinism. In his book *The Design Inference*, he offers the following:

> Premise 1: E has occurred.
> Premise 2: E is specified.
> Premise 3: If E is due to chance, then E has small probability.
> Premise 4: Specified events of small probability do not occur by chance.
> Premise 5: E is not due to regularity.
> Premise 6: E is due either to a regularity, chance, or design.
> Conclusion: E is due to design.

This is followed on the next page by the following:

> The validity of the preceding argument becomes clear once we recast it in symbolic form (note that E is a fixed event and that in Premise 4, X is a bound variable ranging over events):
>
> Premise 1: oc(E)
> Premise 2: sp(E)
> Premise 3: ch(E) => SP(E)
> Premise 4: For every X[oc(X) & sp(X) & SP(X) => ~ ch(X)]
> Premise 5: ~ reg(E)
> Premise 6: reg(E) v ch(E) v des(E)
> Conclusion: des(E).

This symbolic derivation (which requires several additional lines of text, not shown here, to explain the odd notation) exactly reiterates the preceding plain-word rendition of the same argument -- it adds nothing, except to provide a superficial mathematical veneer to the preceding material. At the very least, it is completely inappropriate for Dembski to present sophisticated mathematical arguments such as these in his books that are aimed at the general public. Similar gratuitous usage of mathematical notation and mathematical concepts, as well serious mathematical errors, have been noted by researchers.

For additional details, readers are invited to read any of a number of recently published books, aimed at the general public and written by knowledgeable scientists on these issues. Some examples are Kenneth Miller's *Only a Theory*, Jerry Coyne's *Why Evolution Is True* and Daniel Fairbanks' *Relics of Eden* (Miller is Roman Catholic; Fairbanks is LDS).

Postmodern Science Studies

Another set of scholars to which some Latter-day Saints have turned is the "postmodern science studies" or "sociology of scientific knowledge" (SSK) community, even though on almost every intellectual and social issue this group stands at the opposite end of the spectrum from the creationist community.

The SSK movement arguably began with Karl Popper and Thomas Kuhn. Karl Popper's writings have been very useful in emphasizing the importance of the falsifiability in scientific research. But there is only so far that this notion can be taken. Scientists are much like detectives, in that they must follow leads and hunches, examine evidence, and proceed, at least tentatively, with what appears to be the most likely scenario. Seldom does a single experimental result conclusively falsify a theory. There are always statistical uncertainties in experimental data, as well as questions regarding underlying experimental design and procedures. If we were to apply Popper's principle strictly, Copernicus' heliocentric theory was falsified from the start and should not have been further considered, because it could not predict planetary motions as accurately as the traditional Ptolemaic system. The Copernican model gave better results only after Kepler modified the theory to include elliptical orbits with time-varying speeds, and when Newton mathematically derived this behavior from his laws of motion.

In a similar way, Kuhn's insights have provided numerous interesting perspectives on science and scientific history. Unfortunately, many scholars like to quote only Kuhn's more immoderate passages, such as when he denies that paradigm shifts carry scientists closer to fundamental truth, or when he argues that paradigm shifts have occurred for reasons other than analysis of data.

In recent years, some SSK scholars have gone significantly further than Popper and Kuhn, declaring modern science to be hopelessly eurocentric and androcentric, with no claim to fundamental truth. Collins and Pinch, for instance, after examining a handful of case studies, assert that "scientists at the research front cannot settle their disagreements through better experimentation, more knowledge, more advanced theories, or clearer thinking." Sandra Harding described Newton's *Principia* as a "rape manual." Other SSK scholars hold that science, like literary and historical analysis, is "socially constructed," wholly dependent on the social and political environment of the researchers. Scientists have responded to these claims by pointing out that:

1. SSK scholars have greatly exaggerated a handful of historical controversies, and have suggested that these controversies were not, in the end, settled the "right" way. In other

words, they are guilty of the "forest" fallacy -- pointing out flaws in the bark of a few trees, then trying to claim that the forest doesn't exist.
2. SSK scholars generally ignore the fact that advancing technology permits much more accurate (and less expensive) measurements to be made, thus making it an easy matter for even high school students to replicate findings of classical experiments. Thus errors of measurement or interpretation eventually will be found.
3. SSK scholars often forget that "falsified" theories are extremely accurate models of reality within appropriate domains. For example, even today Newton's mechanics and Maxwell's electromagnetic equations are the basis of almost all practical engineering and scientific computations, giving results virtually indistinguishable from those of more advanced theories such as relativity and quantum mechanics.
5. SSK scholars often exhibit a very poor understanding of the underlying scientific issues.
6. SSK scholars often employ gratuitous technical jargon and pseudo-mathematical notation to give their work a superficial veneer of scientific respectability.

The tension between the scientific and SSK communities came to a head in 1996, when Alan Sokal, a physicist at NYU, wrote a parody entitled "Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity." The article was filled erudite-sounding nonsense, irrelevant (and erroneous) references to arcane scientific concepts and approving quotations from leading SSK scholars. Here are two excerpts:

> Rather, [scientists] cling to the dogma imposed by the long post-Enlightenment hegemony over the Western intellectual outlook, which can be summarized briefly as follows: that there exists an external world, whose properties are independent of any individual human being and indeed of humanity as a whole; that these properties are encoded in "eternal" physical laws; and that human beings can obtain reliable, albeit imperfect and tentative, knowledge of these laws by hewing to the "objective" procedures and epistemological strictures prescribed by the (so-called) scientific method. …
>
> In this way the infinite-dimensional invariance group erodes the distinction between the observer and observed; the pi of Euclid and the G of Newton, formerly thought to be constant and universal, are now perceived in their ineluctable historicity; and the putative observer becomes fatally de-centered, disconnected from any epistemic link to a space-time point that can no longer be defined by geometry alone.

Note that the first passage baldly derides the most basic notions of scientific reality and common sense. The second passage claims that pi and G have variable values!

In spite of its severe flaws, the article was accepted by *Social Text*, a leading SSK journal, and appeared in a special issue devoted to defending SSK against its detractors. As Sokal later noted, he resorted to the hoax out of a deeply felt concern that the SSK world has taken an about-face from its roots in the Enlightenment, which identified with science and rationalism and rejected obscurantism. "Theorizing about 'the social

construction of reality' won't help us find an effective treatment for AIDS or devise strategies for preventing global warming. Nor can we combat false ideas in history, sociology, economics, and politics if we reject the notions of truth and falsity."

Andrew Ross, the chief editor of *Social Text* during the Sokal episode, contemptuously introduced one of his books with the acknowledgement, "This book is dedicated to all of the science teachers I never had. It could only have been written without them." In the same issue as Sokal's article, he wrote:

> Once it is acknowledged that the West does not have a monopoly on all the good scientific ideas in the world, or that reason, divorced from value, is not everywhere and always a productive human principle, then we should expect to see some self-modification of the universalist claims maintained on behalf of empirical rationality. Only then can we begin to talk about different ways of doing science, ways that downgrade methodology, experiment, and manufacturing in favor of local environments, cultural values, and principles of social justice.

It is easy to imagine the serious consequences if this extreme cultural relativism were adopted in science. As a single example, recently the Mexican government encouraged potters, for their own safety, to use lead-free glazes, but the local potters were convinced that the lead issue was only a foreign conspiracy. Unfortunately, as Michael Sullivan has noted, "lead does not care who believes what."

Numerous examples of gratuitous and often meaningless scientific jargon can be cited in the postmodern science literature. Here is one example. The reader need not feel bad that he/she does not understand it. It is complete nonsense, yet it survived peer review:

> We can clearly see that there is no bi-univocal correspondence between linear signifying links archi-writing, depending on the author, and this multireferential, multidimensional machinic catalysis. The symmetry of scale, the transversality, the pathic non-discursive character of their expansion: all these dimensions remove us from the logic of the excluded middle and reinforce us in our dismissal of the ontological binarism we criticised previously. A machinic assemblage, through its diverse components, extracts its consistency by crossing ontological thresholds, non-linear thresholds of irreversibility, ontological and phylogenetic thresholds, creative thresholds of heterogenesis and autopoiesis. The notion of scale needs to be expanded to consider fractal symmetries in ontological terms.

Conclusion

We have seen that even though the creationist/intelligent design community and the postmodern science studies (i.e., SSK) communities are at opposite ends of the spectrum on almost every intellectual and social issue, their literature exhibits some striking similarities, including a preference for ideologically correct conclusions, significant misunderstandings of mathematics and science, a reluctance to subject scholarship to

rigorous outside review, and gratuitous usage of technical jargon and mathematical formulae. Both groups attempt to dismiss modern science using quasi-philosophical arguments, rather than by directly addressing the best available evidence.

Many creationist and intelligent design scholars hold that the laws and processes utilized by their Designer are "mysterious" and not open to human investigation. It is as if they wish to move the fig leaf of Genesis to cover the eyes instead of the loins. For their part, many SSK scholars have drifted into strange corners of self-serving erudite nonsense, and have lost substantial credibility in the wake of the Sokal hoax. Neither community is recommended as an ally for Latter-day Saints seeking insights on science and religion.