

Cobern, W. W. (2001). A reasoned approach to the teaching of evolution in the public's interest. Paper presented at the tri-annual meeting of the International History, Philosophy and Science Teaching Group Denver, CO.

A Reasoned Approach to the Teaching of Evolution in the Public's Interest

Abstract: Should school science “teach the controversy” about evolution? Yes—sort of. Evolution should be taught bearing in mind public interest in science, not the interests of the science community. Evolution almost always prompts “cosmic questions.” Not that evolution addresses any cosmic question *per se*; but, because evolution offers a mechanism for how things have come to be as they are, people quite wonder if evolution is a sufficient mechanism for what they believe about our world. People wonder if there isn't something more that is needed. People wonder if what we believe about the world is amenable with ideas from evolution. Though such musings are not scientific, they are not unimportant to people. With this “public interest” in mind, five guidelines can be offered for the teaching of evolution: 1) Understanding is critical but belief is not. 2) It is critical to understand the evidence that scientists adduce in support of evolution. 3) It is critical to understand that different people do not find the evidence for macroevolution to be equally compelling. 4) It is critical to understand the difference between evolution and evolutionism. 5) It is critical to understand the difference between a theology of creation and creationism.

When thinking about pk-12 science curriculum, I always employ what I have dubbed as “Eger’s Rule.” “Eger’s Rule” stands for a distinction noted a few years ago by physicist Martin Eger (1989). He wrote that it is very important to distinguish between the interests *of* science, on the one hand, and the public’s interest *in* science, on the other. For the most part, science curriculum decisions at the pk-12 level should be guided by: the public’s interest *in* science. Hence the title of this short paper: “A Reasoned Approach to the Teaching of Evolution in the Public’s Interests. I say this because pk-12 education cannot simply be a pipeline for the delivery of qualified scientists. Pk-12 education serves much, much broader interests than this alone. One outcome of this stance is that the teaching of controversial subjects such as evolution is considerably more complicated. One simply cannot take a rather unsophisticated internalist perspective, as if nothing mattered but the science of the subject.

It is from this background of the public interest that I come to the question: Should public schools be encouraged to “teach the controversy” about evolution? My approach to this question is indirect. Let us talk *cosmically*. Let us ask:

Why is there *anything* rather than nothing?

Why is what *is here*, here the way it is and not some other way?

Ask an uninhibited group of students these questions and the range of discussion will stretch from material causes to spiritual causes. My point is that the topic of evolution almost always prompts people to think about “cosmic questions.” And I use the word “cosmic” in its vernacular sense, not its scientific sense. Think about the late Carl Sagan and the *Cosmos* TV series. For “cosmos,” read scientific sense. Now picture what we see on TV. There’s Carl Sagan standing before an ethereal backdrop, pontificating:

The cosmos, all there is, all there ever was, all there ever will be.

But this time for “cosmos,” read vernacular sense. Sagan may have meant to speak scientifically but right from the start his program had deep metaphysical implications. Evolution almost always prompts people to think about “cosmic questions,” however, not because evolution addresses any cosmic question per se – read vernacular sense. Why? Because evolution offers a mechanism for how things have come to be as they are, and we – cosmically – quite naturally wonder: Is evolution a *sufficient* mechanism for what we believe about our world? We wonder – cosmically – if there isn’t something *more* that is needed. We wonder – cosmically – if what we otherwise believe about the world is *amenable* with ideas from evolution. We should not ignore such musings and we certainly should not pretend that such musings are unimportant to people. Hence, this aspect of thinking about evolution should not be ignored in any classroom where science is being taught in the *public’s interest*. My general guidelines for teaching evolution in the public’s interest are as follows.

Teacher for a sound *understanding* of evolutionary processes. Don’t teacher for belief. Don’t preach. Understanding is critical but belief is not. Belief is up to the students. Besides, it is important for educators to remember that what one believes changes and

develops. What you believe today will not necessarily be what you believe tomorrow. Give students space to sort out the issues important to them.

Teach for a sound understanding of the *evidence* for evolution. Students need to understand the evidence that scientists adduce in support of evolution. They need to understand the evidence for both micro– and macro-evolution. They need to understand that evidence is cumulative.

But, macro-evolution is different! Students and teachers need to understand that different people do not find the evidence for macro-evolution to be equally compelling. Different people do not find the evidence for macro-evolution to be as compelling as the evidence for micro-evolution. It is also important for students and teachers to understand that the lay public is not always as convinced as are scientists by the same data. Ignoring these realities is simply counter productive.

Teach science, not scientism. Students and teachers need to understand the difference between science and scientism, between evolution and evolutionism. Students and teachers need to understand that evolution can be supported from different metaphysical perspectives, where the metaphysical perspectives are themselves incompatible.

On the issue of science and scientism, which is particularly important, allow me to give three examples that should be instructive.

Example 1: David Hull asked: “What kind of God can one infer from the sort of phenomena epitomized by the species on Darwin’s Galapagos Islands? (quoted in Larson, 2001).

Example 2: The biologist Julian Huxley promoted himself as a kind of high priest for a “religion without revelation” based on a global evolutionary humanism. That’s one way to answer. (Larson, 2001)

Example 3: Physicist Steven Weinberg’s answer is basically that no one with a reasonable understanding of biological science could believe in God – or at least in any God having anything to do with our natural world. (Weinberg, 1988)

Now compare the example of these three eminent scientists with David Lack. Textbook accounts of evolution typically refer to “Darwin’s finches” as an important source of evidence for evolution. Actually, the study of finches in support of evolutionary theory was done by David Lack (see Larson, 2001). In contrast to Hull, Huxley and Weinberg – and I think it is fair to say that Lack had “a reasonable understanding of biological science” – Lack tells us:

The true significance of the first chapter of Genesis is to assert that God made the universe and all in it, that He saw that it was good, and that He placed man in a special relationship to Himself. (quoted in Larson, 2001)

Clearly, David Lack had no difficulties with David Hull’s question. The problem for pk-12 education is that too often science is not separated from metaphysical commitments

and thus what gets offered as science is actually scientism. Moreover, promoters of scientism are unashamed. Michael Shermer (2002) is a case in point. He proudly announces that we are now in:

the Age of Science, it is scientism's shamans who command our veneration. Third, because of language we are also storytelling, mythmaking primates, with scientism as the foundational stratum of our story and scientists as the premier mythmakers of our time.

To which countless teachers will respond: With friends like this, who needs enemies?

Creation and Creationism are not the same. Students and teachers need to understand the difference between a theology of creation and creationism. As we see in David Lack's comment, it is possible to hold an orthodox Christian view of Creation without holding that Scripture stipulates any particular mechanism for creation. Creationism, on the other hand, commits to a stipulation over the mechanism of creation. As teachers teach about evolution, whether teaching the controversy or not, this distinction must be understood. Failing to do so, simply leads back into scientism.

Conclusion

So, should school science "teach the controversy" about evolution? Yes—sort of. Evolution should be taught bearing in mind public interest *in* science, not the interests *of* the science community. Teaching evolution will almost always prompt metaphysical questions because evolution offers a mechanism for how things have come to be as they are. Many people will then wonder if evolution is a sufficient mechanism for what they believe about our world. People wonder if there isn't something more that is needed. People wonder if what we believe about the world is amenable with ideas from evolution. Though such musings are not scientific, they are not unimportant to people.

References

- Eger, M. (1989). The 'interests' of science and the problems of education. Synthese, 81(1), 81-106.
- Larson, E. J. (2001) God and the Galapagos? [Web Page]. URL Metanexus: http://www.metanexus.net/archives/message_fs.asp?ARCHIVEID=4069; and http://www.metanexus.net/archives/message_fs.asp?list=views&listtype=Magazine&action=sp_simple_archive_&page=1&ARCHIVEID=4225
- Shermer, M. (2002). The shamans of scientism. Scientific American, 286(6).
- Weinberg, S. (1988). The first three minutes: A modern view of the origin of the universe. New York: Basic Books.