CREATIONISM, INTELLIGENT DESIGN AND REDEFINITIONS OF SCIENCE

Suzanne Goldenberg writes an informative summary today in the Guardian of the latest stage of the creationist debate in the US – Religious right fights science for the heart of America.

Classroom confrontations between God and science are under way in 17 states, according to the National Centre for Science Education. In Missouri, state legislators are drafting a bill laying down that science texts contain a chapter on so-called

alternative theories to evolution. Textbooks in Arkansas and Alabama contain disclaimers on evolution, and in a Wisconsin school district, teachers are required to instruct their students in the “scientific strengths and weaknesses of evolutionary theory”. Last month, a judge in Georgia ordered a school district to remove stickers on school textbooks that warned: “This textbook contains material on evolution. Evolution is a theory, not a fact, regarding the origin of living things.”

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Officially, the teaching of creationism has been outlawed since 1987 when the supreme court ruled that the inclusion of religious material in science classes in public teaching was unconstitutional. In recent years, however, opponents of evolution have regrouped, challenging science education with the doctrine of “intelligent design” which has been carefully stripped of all references to God and religion. Unlike traditional creationism, which posits that God created the earth in six days, proponents of intelligent design assert that the workings of this planet are too complex to be ascribed to evolution. There must have been a

designer working to a plan – that is, a creator.

I regularly hold classes for incoming Stanford freshmen and in summer camps at Stanford for smart high school students. I usually use archaeological examples to explore the character of interdisciplinary science and cultural difference – the unfamiliarity of the archaeological past. In every class there is at least one student who raises an objection to archaeological accounts of prehistory on the grounds that they are based upon an unproven theory of evolution.

I have actually had one student tell me the world was created 6000 years ago. Another came out with the old one that we are not descended from monkeys, for why would they still be around today? (Once they get to Stanford I assume I no longer hear from these students because they avoid classes like archaeology that challenge their view of things.)

Australopithecus Afarensis: footprint left in the sand, Laetoli, east Africa, 3.6 million years ago. Or part of an archaeological record created to puzzle us with the rest of the universe 6000 years ago?

Intelligent design is another old theological idea meant originally as a proof of

the existence of god. If you were to come across a complex mechanism, parsimony of explanation, the argument goes, would have you infer that it was made by a skilled and intelligent maker, rather than have you posit a long and involved process of mutation, selection and adaptation.

Life is complex. Evolutionary science cannot agree on the precise processes that govern the emergence and disappearance of life's complexity. Surely a more parsimonious adherence to the wonder of the world is to believe in a skilled and intelligent maker?

The terms of the debate about evolution are changing. The argument is now about the character of science itself. And of the nature of humanity.

And there is much on the side of the creationists and intelligent designers – when the terms of the debate are no longer religious faith versus the supposed atheism of science.

I have mentioned in this blog a favorite thinker of mine – Daniel Dennett. [Link] His book "Freedom Evoloves" is a superb attempt to rethink determinism. Our history has a sense to it, involves causes and effects. This is nevertheless compatible with people being ethical beings who possess freedom of choice and are not determined by the impersonal forcesof nature and history. At the core of his thinking is an emphasis upon selection as the fundamental process that drives natural history. And though he does not emphasize it, his understanding of selection is that it is a process of design.

Last year in a class on the history of design that I ran with Barry Katz, we interviewed Ilan Kroo, who designs supersonic aircraft. He showed us the implications of genetic algorithms, processes of selection operating on random mutation, for the design of aircraft wings. Enabled by superior computer processing power NASA and Boeing engineers are generating many solutions to a particular design issue (a certain kind of lift, given constraints of certain materials and the purpose of the aircraft, for example), and repeating many times the process of constrained mutation and selection. They are coming up with some startling new designs that would not have come out of a traditional design process.

Just the other day I was talking about Agile Development, as employed in the software indusry, as a model of iterative design, analogous to these genetic

algorithms. [Link]

No serious scientist is going to say that evolution is a fact. It is certainly the best way we have of rationally understanding natural history. But this does not make it a “fact”. There are problems with constructing a narrative of deep time – the fragmentary nature of the palaeontological and archaeologoical record is an argument for cladistics, a different kind of understanding of how the history of relationships between species might be understood. [Link]The mechnaisms of evolution are not fully understood.

The “truth” of “facts” is a matter for metaphysics, not science. So yes, this brings the truth of evolution into the same theological field as faith in creation.

Then there is the issue of human culture. Ideas of cultural evolution and the co-evolution of the human species and our social and cultural artifacts are rooted in seriously flawed nineteenth century ideas of how you classify people and stories of history that center upon economic success and measures of social complexity. I have always had serious misgivings about theories of cultural evolution, in spite of the tremendous archaeological reworking of ideas of cultural evolution in the 60s and 70s. And I am committed to the neo-Darwinian thinking found in the likes of Daniel Dennett.

What gets called postmodern relativism challenges ideas of absolute truth and reality. Whatever the excesses of some of this thinking, it is also now very clear from detailed historical and sociological studies of scientists that they are flawed humans like the rest of us, and science is something done in messy social circumstances. Real science is not some abstract confrontation of reason with the forces and forms of nature.

Creationists are smart and know science is flawed. But this is their argument for abandoning reason and taking us back to pre-enlightenment faith. They say – All science is flawed. We need universal truths. There can only be trust in faith and creation.

Is it as bad as this? Is it not just down to some wacky fundamentalists in the southern states of the US?

I wish I could invite you one of these classes when I confront smart young

Americans who have had their minds closed by this very neat argument.

It is really about how we think of ourselves. This debate is all about human frailty, the desire to have some certainty when faced with the mess of history, the complexity of the world that threatens even our supremely successful science and technology. It is about how we get on with our world and with other species.

So much western economic success has been founded upon the notion that the world is god-given to be used by people, that societies who have not fully exploited what was there for the taking are in some way failures, or primitive and less complex, or less developed, or just non-western. People are in this way seen as a unique species that builds and develops. And possesses soul and consciousness.

To really tackle the creationists we need to stop saying that evolution is true and that science has the “answer”. That archaeologists can tell the story of “the real past”.

We need to accept that the world as we know it is messy. People have an imperfect hold on it, and much of history is lost. Science, history, evolutionary biology, archaeology are processes of dealing with these fundamental questions of what makes us who we are. Processes, not answers. And this smart reasoning that will change and adapt to the messiness of the world is the only hope we have.