

### A rant on “intelligence” and “design”

Physics courses spend almost all of their effort in passing on accepted science. Much of it is written in the ‘third person’ to emphasise that it’s not just the personal opinion of the lecturer or even of a physicist whose name is known the world over. However, science is pursued by individuals and not machines and we all have personal opinions on science-related topics. I think that’s healthy. For you to compare your opinions with some of mine I’ve included a few supplementary notes on the course web-page, whose contents aren’t part of the formal lecture course. This is another one, intended to be read in conjunction with my astronomy or cosmology lectures.

“Intelligent design”? The words are misused by their proponents. By “intelligent” do they mean what a bright human being would do? The Universe certainly wasn’t brought into existence by a human being or human beings so isn’t it rather arrogant to suppose our perception of what is intelligent governs the design of the Universe? Indeed, our intelligent forebears got it seriously wrong when they tried to guess what the Universe was like. It’s a weird place, a very weird place: finite but absolutely huge and, by any terrestrial standards, almost empty of matter (the average density of matter is barely one atom per cubic metre). The universe is a violent place, almost all of it completely unfit for life. This is a telling point. If the purpose of the Universe is to sustain life in general and human life in particular, designing a place where virtually all of it cannot sustain life does not seem intelligent. The Universe is old, very old, older than the Earth; not infinitely old but measurably old. Life on Earth didn’t begin until the Universe was some 10 billion years old. Why wait a seriously long time before starting what is supposed to be the purpose of the whole creation? What’s the most common constituent of the Universe? Not atoms but photons of radiation, the basic packets of energy in the electromagnetic spectrum. There are more than 10 billion for every atom that exists but far from being any use for seeing they are mainly microwave photons that cannot be detected by any natural sensor, only the sensitive instruments of modern technology. The universe is on a one-way trip; it is not a steady system in some kind of equilibrium. There is much more besides that mankind has discovered about the Universe that is beyond the expectations and imagination of previous generations. Is all this an ‘intelligent’ way to design a Universe? Maybe it is, but not as judged by human intelligence.

I haven’t missed the point that the intelligence is supposed to be divine intelligence. The only meaning that we can give to the word ‘intelligent’ is what we understand by human intelligence. It’s the only kind we know of. If divine intelligence means something different it can mean anything whatsoever you want it to mean and therefore isn’t a useful explanatory or even descriptive concept. For some, divine intelligence could equate to the process of evolution but that’s certainly not the content of the package labelled ‘ID’. My point, in brief, is that the universe at large does not bear the stamp of having been designed by intelligence as we know it. The fact that it works is no proof at all that intelligence is involved. One cross-disciplinary result of the last century-and-a-half of study is some understanding of how complexity can arise from simplicity. Complexity does not equate to intelligent design.

The biologists can give many examples of how biological function and organism ‘design’ is by no means optimal but works on a make-do-with-what-we-have-got basis. Imperfect function is just what one might expect from evolution, where the prerogative is simply to do better than the competition. Indeed, the frequency with which human beings fail to work properly is good evidence that we are the products of evolution. One doesn’t have to think too hard to realize that many improvements could be made in our own ‘design’. Plenty of writings by biologists give specific examples. The evidence for evolution in both the fossil

record and in the DNA of living organisms is as strong as the evidence that the Earth is round and not flat. It does, though, take study to learn and isn't knowledge absorbed with no conscious effort during the process of daily living. Indeed, taking one example, the more that is discovered about the human genome in particular, the more it is clear that it has been cobbled together from parts developed by a trail of ancestors living different lives in different times; it contains parasitic DNA, junk DNA, sequences that with minor mutation lead to serious genetic disease and has other faults besides. Designed? You must be joking.

Geology and Physics give the quite precise figure that the Earth is 4.6 billion years old. The physicist's figure comes from the incontrovertible evidence of the relative abundances of isotopes in radioactive decay chains, physics that is non-contentious and well understood. The biologists mightn't have put such a precise number on it but they agree that such an age is in keeping with all the biological evidence. The arguments have been thrashed out over two centuries and aren't the recent opinion of a few speculators.

What of 'design'? Design implies purpose and in my books religions have a very poor record of knowing what 'purpose' is. How many devout Christians believe that the purpose of life is to praise God and get to heaven? Indeed, look at how many of those who claim to represent their religion the most faithfully, such as monks, nuns, priests and others, live. Yes, decent lives of principle but in thinking that one of the main purposes of life is to live for the afterlife they miss much of the value of life. Life is for many things, including wine, song, sex, sport, eating chocolate, drinking tea and coffee, indulging in communal entertainment, enjoying the fruits of the imagination of one's fellow human beings in all the arts, and many more things besides that aren't usually part of monastic or puritanical life. Would I trust ID supporters to tell me what the purpose of life is? No I wouldn't. The track record of religious people around the world knowing the purpose of human life is poor (witness their disagreement on the subject!), never mind purporting to know what the purpose of the Universe is. The track record of irreligious people is no better, so I'm not singling out the religious for special treatment. If you don't know for what purpose something is made, you certainly can't use the word 'design' in any meaningful way.

"Intelligent design" is a religious label and it's not fashionable to tell people that their religious beliefs are wrong. One is supposed just to agree that they differ from your beliefs. In this case, though, they are wrong. The evidence from 200 years of science is unequivocal. If religious people want to tell me what the nature of their God is, that's fine. If a faction want to tell me that 200 years of scientific study of nature is quite wrong then, I'm sorry, it is they who have the wrong end of the stick. Tying up an erroneous belief in religious wrapping doesn't make it right, or in any way acceptable. "Intelligent design" should be consigned to a skip whose contents are duly buried. Teaching a belief to youngsters that is so demonstrably contrary to knowledge accumulated by mankind over centuries is in my books a misuse of educational privilege, and morally wrong. Of course, ranting against it won't dissuade any believers but will probably elicit a defensive response from them. How many ID proponents have stopped to ask why God has made them believe in something that's contrary to all the evidence He has revealed to mankind? If there are any agnostics around, then believe me the evidence really is all against it. Keep your beliefs for things that may at least possibly be true.

If you really want something to marvel at, wonder about and treat with awe just think of how over a space of some four billion years evolution has developed the environment we experience today from the starting materials then available. Natural creativity at work in a huge evolutionary laboratory: the Earth. I personally don't see the need for any supernatural creativity. If the experiment were run again, I've little doubt that the result would be

different. It's a sobering thought that just as we as individuals owe our existence to the chance activities of our parents on that critical day of our conception, mankind as a whole wasn't an inevitable inhabitant of the Earth but the outcome of the way evolution happened to pan out. We're lucky. We should cherish that luck and not delude ourselves that it was pre-destination. We should cherish the fact that we are not only participating in life on Earth, indeed life in the Universe, but have enough consciousness and knowledge to appreciate where we are.

To return to the ID dogma, it has no explanatory capacity, there is no evidence to support it and it runs contrary to mankind's hard-won knowledge of the natural world acquired over several centuries of deep study by people of pretty well every nation on Earth. Religion is a complex phenomenon and many religious people do not hold with "intelligent design", for the very reason that many intelligent people, both religious and otherwise, have produced evidence that nature is in fact far more intriguing and complicated than the ID lobby believe. I second that opinion.

*JSR*