A rebuttal to 'Life on Earth; Chance or Design?', a talk given by Philip Mallinder of the Christadelphians.

By Alex Botten

At the end of September this year I decided to go along to a talk being given at my parent's church. Recently I've been taking an interest in Evolutionary Biology, trying to learn as much as I can about the subject. I've read a lot of books, watched a lot of lectures and documentaries, and feel I've got a basic grasp of the principles involved. I've also gone out of my way to explore the counter arguments posited by Creationists and advocates of Intelligent Design. As a result I was interested to see what Philip Mallinder, a Christadelphian and (apparently) a Scientist specialising in Molecular Biology, would have to say on the issue.

I must emphasise that by no means am I an expert on this subject, I have an interest and have tried to read as much as I can in a short period of time, but I do feel that I understand the arguments on both sides.

I had my sneaking suspicions that Mr Mallinder wouldn't be presenting a strictly even handed explanation of the scientific facts right from the off, due to the talk being designed as a preaching effort by the Christadelphians (who had leafleted the Knowle and Dorridge area heavily during the preceding weeks) But I set aside my prejudices and went along with my mind as open as I could possibly manage, without my 'brain falling out' (First used by the late American physicist Richard Feynman)

The title of the lecture hadn't filled me with hope either, the use of the word 'chance' indicated to me that the speaker had little understanding of the concept of natural selection. As American biologist, Douglas Futuyma says,

> 'natural selection itself is the single process in evolution that is the antithesis of chance. It is predictable.' (http://www.actionbioscience.org/evolution/futuyma.html)

Chance is not a major player beyond initial mutations that can give an organism an advantage over its neighbour. If Mr Mallinder could make such a fundamental error in the title, what else could he get wrong?

Regardless of my misapprehension, I settled in my seat and as the lecture began I was relieved to see that the leafleting campaign had been somewhat unsuccessful, noting that there were no visitors present who weren't in some way connected with members of the Christadelphians. I had worried that 'normal' people would have gone along and been faced with bad science and outright misinformation presented as fact by Mr Mallinder, I was pleased to realise that this fear was unfounded.

The lecturer started out by showing a PowerPoint slide of the Earth, and saying how wonderful and incredibly complex our world is. No problems there, I fully agreed with him. However, he then followed by saying that he hoped his lecture would supply some answers to 'opponents of Design and Creation', an immediate admission that he intended to argue from a Creationist/Intelligent Design viewpoint. Already I was wondering why he hadn't just called the lecture 'Life on Earth; Created by God', as all pretence at being open to any other option had been dropped.

He then switched to attacking atheists, singling out Dr Richard Dawkins and showing a slide

featuring a quote where Dawkins describes those who don't acknowledge the validity of evolution as wrong, stupid, brainwashed, deluded, or wicked (The God Delusion). Mr Mallinder used this as an opening to claim that atheists are 'on the attack' and trying to disprove the existence of a supreme being (something that is simply untrue, most scientists are no more interested in disproving the existence of 'God' than they are in proving Unicorns or Fairies to not exist). Now, Dawkins has a well deserved reputation as 'Darwin's Rottweiller' but Mr Mallinder's use of one of his more inflammatory quotes, presented out of context to an audience of people containing very few who would have read or watched any his work was disingenuous and, to my mind at least, designed to push the pro-Creation audience even further into accepting whatever he intended to present them with.

Incidentally, the fallacy of his statement that 'atheists are on the attack' could not be clearer. In fact belief in Creationism from fundamentalist believers of numerous faiths has led to teachers becoming concerned about teaching evolutionary biology in science classes in case they offend Christians, Muslims, et al (http://news.bbc.co.uk/1/hi/education/7028639.stm). In the USA this is even more marked, with various school boards pushing to have Intelligent Design given equal time in biology classes, despite not having any basis in actual science.

The Kitzmiller vs. Dover Schools District Board case is a well documented recent example of proponents of Evolution having to defend science from the desires of the religious to move their beliefs out of the RE classroom. In December 2004, eleven parents of children in Dover, Pennsylvania took the local School Board to court over a statement that the board had instructed be read out before any science classes about evolution. The statement reads -

> “The Pennsylvania Academic Standards require students to learn about Darwin's theory of evolution and eventually to take a standardized test of which evolution is a part. Because Darwin's Theory is a theory, it is still being tested as new evidence is discovered. The Theory is not a fact. Gaps in the Theory exist for which there is no evidence. A theory is defined as a well-tested explanation that unifies a broad range of observations. Intelligent design is an explanation of the origin of life that differs from Darwin's view. The reference book, Of Pandas and People is available for students to see if they would like to explore this view in an effort to gain an understanding of what intelligent design actually involves. As is true with any theory, students are encouraged to keep an open mind. The school leaves the discussion of the origins of life to individual students and their families. As a standards-driven district, class instruction focuses upon preparing students to achieve proficiency on standards-based assessments.”

Teachers in the district refused to read out the statement, saying that they would not break their regional code of education, a code that prevents them from teaching anything they believe to be false. Also three members of the schools board resigned in protest. The case was eventually settled on the 20th of December 2005 when John Edward Jones, a Bush appointed Federal Judge, ruled that

> “The proper application of both the endorsement and Lemon tests to the facts of this case makes it abundantly clear that the Board’s ID Policy violates the Establishment Clause. In making this determination, we have addressed the seminal question of whether ID is science. We have concluded that it is not, and moreover that ID cannot uncouple itself from its creationist, and thus religious, antecedents.” (taken from the conclusion of the 139 page decision issued by Jones - http://www.pamd.uscourts.gov/kitzmiller/kitzmiller_342.pdf)

The court had found Intelligent Design to not be a 'science', and had also ruled that it was unconstitutional to teach it in classrooms in a country that insists on separation of Church and State. It is evident that, far from being 'on the attack', evolutionary science is having to defend itself from the increasing desire of Creationists to get their voice heard in the classroom.

The point of the lecturer bringing atheists into the debate was, as far as I could tell, to equate acceptance of evolution with non-belief in a 'supreme' being. It appears that, in Mr Mallinders mind, Atheism and acceptance of evolution are the same thing. Again, this was a very emotive tactic for Mr Mallinder to employ as he was aware that the partisan audience would be mostly of the opinion that to deny the existence of 'God' is to commit the only 'sin' that cannot be forgiven ('But whoever blasphemes against the Holy Spirit will never be forgiven; he is guilty of an eternal sin. ' Mark 3:29, NIV). Mr Mallinders goal to link acceptance of evolution to denial of 'God' was, to my mind, a dishonest and misleading route to take.

Mr Mallinder then claimed that 'over 40%' of scientists believe in some kind of 'God'. On the surface this is surely intended to impress people. After all, if those clever scientists believe in 'God' then there must be something in it? Scientists are smart cookies, they have to be to pass all those exams they need to sit to become scientists! More than a quick glance at the figure causes the whole thing to seem less impressive though. Surely if only 40% believe in 'God', that means that the majority don't? Also he failed to mention that over 99% of scientists globally accept evolution as fact ('Why Darwin Matters' Shermer). To be honest I wasn't expecting him to present any figures that would undermine his own argument, but I feel it was a dishonesty to the audience to be so selective with his statistics, statistics for which he conspicuously didn't cite a source. (I believe the source of his '40%' to be a survey carried out for an issue of the 'Nature' journal in 1996, by Edward J. Larson and Larry Witham)

Throughout the lecture Mr Mallinder repeatedly referred back to the Bible, even going as far as to say that the sheer number of people who believe it to be true was proof of its accuracy. He also used Biblical quotes as evidence to support its provenance! Sadly this argument is entirely circular, as any attempt to 'prove' something using faith alone is doomed to be. One cannot give a lecture claiming to be from a scientific viewpoint and invoke 'faith' as part of that argument – 'It's true because the Bible says so' just isn't good enough.

When William Paley and his watch was brought up as the next point I started to realise that Mr Mallinder intended to use typical Intelligent Design arguments to make his point. The Watchmaker analogy was a teleological argument published by Paley in his 1802 work “Natural Theology, or Evidences of the Existence and Attributes of the Deity collected from the Appearances of Nature”. The analogy is this -

> “In crossing a heath, suppose I pitched my foot against a stone, and were asked how the stone came to be there; I might possibly answer, that, for anything I knew to the contrary, it had lain there forever: nor would it perhaps be very easy to show the absurdity of this answer. But suppose I had found a watch upon the ground, and it should be inquired how the watch happened to be in that place; I should hardly think of the answer I had before given, that for anything I knew, the watch might have always been there. (...) There must have existed, at some time, and at some place or other, an artificer or artificers, who formed [the watch] for the purpose which we find it actually to answer; who comprehended its construction, and designed its use. (...) Every indication of contrivance, every manifestation of design, which existed in the watch, exists in the works of nature; with the difference, on the side of nature, of being greater or more, and that in a degree which exceeds all computation.”

Paley's analogy is flawed on many levels, and it is a sign of the desperate need of believers in Creationism to find something to back their beliefs up, that they are still referring back over 200 years to an idea that was roundly debunked by the work of Darwin less than a century later.

Unfortunately the idea of a pocket watch being a good example is somewhat undermined by the processes that had to take place for a watch to exist in the first place. Whilst a craftsman could make a complex watch, it is important to remember that he is depending on many many years of improvement and alteration carried out by successive generations of watchmakers. A watchmaker could no more make a working watch without cumulative experience and training to draw on than a complex organism could instantaneously spring into existence without many generations of slow refinement. If anything the complexity of a watch argues in *favour* of natural selection; experiments over time with what does, and does not work, have led to the complex mechanical time pieces we are familiar with today.

Mr Mallinder then moved onto the mousetrap as an example of something irreducibly complex. The idea here is that some things appear to need so many simultaneous developments to work that they could not have possibly evolved. The mousetrap is used as an example; take away any part, say creationists, and the whole ceases to work. This is, yet again, a completely false argument in favour of Intelligent Design. Professor John McDonald, of the University of Delaware, even went as far as showing how a mousetrap is in no way irreducible. (http://udel.edu/~mcdonald/mousetrap.html). That a cat could also be described as a 'mousetrap' far more complex than a man made one was not mentioned, perhaps because a cat could still function as a catcher of rodents even if it had many parts missing?

I had suspected that the argument Mr Mallinder would present would ultimately depend on Irreducible Complexity and so almost laughed out loud when a cross section of a bacterial flagellum appeared on the projector screen. The flagellum has long been the 'poster boy' of the Intelligent Design advocate, so complex that they claim there is no way it could have been evolved. In his introduction to this part of the lecture, Mr Mallinder recommended the book 'Darwin's Black Box' by Michael Behe, but made no mention of the afore mentioned Kitzmiller vs Dover Schools District Board trial where Judge John Edward Jones, in his ruling stated that; 'Professor Behe's claim for irreducible complexity has been refuted in peer-reviewed research papers and has been rejected by the scientific community at large'. That Mr Mallinder's argument was so dependent on the voracity of Behe's claims put the remainder of the lecture on very shaky ground in my opinion.

However, we must address the Flagellum before we can move on. It is indeed a tremendously complex biological 'motor' and it is hard to see how something like that could develop. It is not impossible though, and recently scientists have been able to prove that many parts of it exist in more primitive forms doing other jobs in other organisms (such as the type III secretory system). As I said at the beginning of this article, I am no expert, but Dr Kenneth Miller of Brown University is, and deals with the Flagellum in great detail in his article 'The Flagellum Unspun', where he says the following about the argument for Irreducible Complexity using the Flagellum as evidence

> If we are able to search and find an example of a machine with fewer protein parts, contained within the flagellum, that serves a purpose distinct from motility, the claim of irreducible complexity is refuted. As we have also seen, the flagellum does indeed contain such a machine, a protein-secreting apparatus that carries out an important function even in species that lack the flagellum altogether. A scientific idea rises or falls on the weight of the evidence, and the evidence in the case of the bacterial flagellum is abundantly clear. (http://www.millerandlevine.com/km/evol/design2/article.html).

So thoroughly dismantled has the irreducible complexity argument been that it is foolhardy to try and argue the existence of a 'creator' from it. Yet this is what Mr Mallinder did for the remainder of his lecture.

Citing first cell membranes, then various enzymes, he time and time again said 'this is so

complicated I can't see a way that this could possibly have evolved, can you?'. He also claimed that the partial success of scientists like Jack Szostak (http://www.hno.harvard.edu/gazette/1996/09.12/CreatingLifeina.html) in creating basic life building structures in a lab were failures as they had not proved anything. However, he didn't mention that a small amount of success had been achieved in a brief period of time, or that nature had had many millions, if not billions of years to throw up a self reproducing organism.

One of the most bizarre statements in the whole lecture was when Mr Mallinder said (and I paraphrase) 'How did this enzyme know to develop in such a way that it would break down alcohol in the body?'. He seemed to be inferring that evolution has a final goal in mind, that it 'knows' what it is trying to make, an idea that anyone with even a passing knowledge of the mechanics of natural selection would find laughable.

And that was about it for his argument. He returned briefly to attack Dawkins' 'faith' in evolution, though didn't mention any of the other scientist who are very vocal about the facts of evolution; the Catholic Dr Kenneth Miller, or former fundamentalist christian Michael Shermer, for example, both men who have stated that religion and evolution needn't be opposed to each other. Missing the obvious irony in stating that his 'faith' was far more well founded than Dawkins', he again reiterated his belief in the accuracy of the Bible. He finished by stating that evolution is just a series of 'hypotheses and assumptions', and bringing up a copy of the first slide of the evening with the words 'In the Beginning God created the Earth' added.

The floor was then thrown open to questions and I couldn't resist seeking clarification on one matter. 'Philip, would you describe yourself as a Young Earth Creationist or are you an advocate of Intelligent Design?', I asked. I had noted that he had used the 'classic' Intelligent Design arguments throughout his lecture so wanted see where he stood. If he answered that he was a Young Earth Creationist then I could put him in the 'bad scientist' box, if he claimed to be a believer in designed evolution then he would be on very shaky ground with the fundamentalist church he is a member of.

His reply was initially intended to throw me off, I feel; 'I believe what it says in the Bible'. I am not sure that Mr Mallinder was aware that I had been brought up in the Christadelphian faith and had studied Theology at university, and that I'd know what it said in the Bible.

'Well, if you take the Bible as being literal, the Earth was created by God in one week around 4000BC, is that what you believe?'

He eventually had to admit that's what he believed. I saw no point in asking any more questions of him. Other members of the church did ask a couple though, including the breathtakingly ignorant 'If evolution is happening why don't we see partially evolved creatures all around us?' (I resisted the urge to explain to this individual that everything living at the moment is in a constant state of flux, as evolution has no 'end point')

I think the most puzzling thing overall for me was this; why, when he belongs to a religious group that holds Genesis to be *literally* true, did Mr Mallinder use the arguments developed by Behe and his fellow Intelligent Design followers? After all, those who advocate Intelligent Design are *not* deniers of evolution, they are religious people who have been forced to try and bend science and faith into a new shape due to the overwhelming evidence against their previously held world view. When presented with the undeniable facts of the age of the cosmos, Earth, mankind et al, 'Creation Science' was forced to remodel itself as 'Intelligent Design', tacitly accepting that evolution was fact but twisting it into a form that wouldn't paint 'God' entirely out of the picture. I can understand why people who are willing to accept evolution as a fact but don't want to give up

'faith' in a 'God' would want to do such a thing, but a fundamentalist Christian?

Creationism *isn't* the same as Intelligent Design, Creationists believe the world to have been brought into existence *as is*. They believe that there are no fundamental differences between animals that existed in those first few days of 'creation', and those we see around us now. In their most extreme form they believe the world to have been built and inhabited by 'God' in the space of a literal 7 day period. That this is provably incorrect presents them with a major problem.

None of which explains at all why Mr Mallinder, a Young Earth Creationist, didn't just stand up and say 'God created the whole Universe in a week, that's what the Bible says, I believe the Bible to be correct, so that's what I believe. Furthermore I don't need to prove anything to you because the Bible is self-evidently correct'. Is the 'faith' of believers so threatened by the relentless march of science that they are unable to merely 'believe'? Do they have to seek for 'proof' in the world around them? As author (and atheist) Douglas Adams pointed out in the “Hitchhikers Guide to the Galaxy”; 'proof denies faith, and without faith [God is] nothing'.

Ultimately, though I believe them to be utterly wrong in their faith, I have more respect for Christians who take the Bible entirely literally than those who pick and choose which bits best fit 'reality'. At least the blindly faithful, who would deny the existence of dinosaurs even when standing beneath a skeleton of a prehistoric monster in the British Museum, are keeping true to the wishes of their 'God', as laid down in 'his' book. After all, if Jesus believed the Genesis account to be what actually happened, what kind of ego does it take to claim to know better? Believe in the truth in the teachings of Christ and you pretty much *have to* accept the rest of the Bible as being literal.

The others, those who preach Intelligent Design as anything other than lazy pseudoscience, those followers who sneakingly know that there's something *worrying* about their religious texts not matching the reality of the material world, the ones who will try and reconcile the irreconcilable, those are the ones I have no respect for at all.