

**My Short Interview with
Richard Dawkins
by Lanny Swerdlow**

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Lanny Swerdlow: Hi! With me today is Dr. Richard Dawkins, author of *The Selfish Gene*, the revolutionary book (as far as I'm concerned) *The Blind Watchmaker*, and his newest book, *Climbing -- er...*

Richard Dawkins: ...*Mount Improbable*.

Lanny Swerdlow: *Climbing Mount Improbable*. I've got a couple of questions that, ever since I've read the book, I've always wanted to ask you. They're kind of grand in their scope of things, they're not particularly specific. In your book *The Blind Watchmaker*, I believe that you made the argument that the principles of evolution apply everywhere in the universe. In other words, the laws of thermodynamics apply on a planet a hundred-billion light years away from the earth as well as they apply on the earth. So the principles of evolution apply on that planet as much as they would on earth.

Richard Dawkins: It's a less-strong claim than for the laws of thermodynamics. I think for the laws of thermodynamics we more or less know that they apply everywhere in the universe. The laws of Darwinian evolution: First off, we don't know if there's life anywhere else in the universe; there may not be. It is actually seriously possible that we may be alone in the universe. Assuming that there is other life in the universe (and I think most people think that there is), then my conjecture is that how ever alien and different it may be in detail (the creatures may be so different from us that we may hardly recognize them as living at all), if they have the property of organized complexity and apparent design -- adaptive complexity -- then I believe that something equivalent to Darwinian natural selection -- gradual evolution by Darwinian natural selection; that is, the non-random survival of randomly varying hereditary elements -- will turn out to be applied. All life in the universe, my guess is, will have evolved by some equivalent to Darwinism.

Lanny Swerdlow: Also from reading your book *The Blind Watchmaker*, I kind of pick up the idea that the mechanism of evolution not only apply to origin of species, or DNA survival, but in a way, apply to everything in the universe, from quarks to galaxies.

Richard Dawkins: I would prefer not to say that. I certainly haven't said that in any of my books, and I would be reluctant to say that. I think that something very special happens in the universe, when a self-replicating entity, which DNA is -- DNA is probably not the only one, but DNA is the self-replicating entity that we know. When that comes into existence, then there is a whole new game that starts. Before that, you had just physics; you have molecules bumping around, forming new molecules according to the ordinary laws of chemistry. Once, by those ordinary laws of chemistry, a molecule springs into

existence which is self-replicating, then immediately you have the possibility for Darwinism, for natural selection to occur. Then you have this extraordinary process, which we only know of on this planet, but may exist elsewhere, whereby things start to get more complicated and start to appear as though they've been really designed for a purpose. If you look carefully for what that purpose is, it turns out to be to replicate, to pass on, to propagate that very same DNA, or whatever it might be.

Lanny Swerdlow: People will sometimes look at the physical universe and say it looks like it was designed.... Isn't the fact that a solar system survives based on [the fact that] it has properties which will ensure its survival, versus another solar system that is unstable?

Richard Dawkins: So you're kind of trying to make a Darwinian view of solar systems.... In a way, but let me make a distinction, then, between what we call one-off or single-generation selection, and cumulative, multi-generation selection. A solar system survives because -- let's say, a planet orbiting a star will orbit the star at a particular distance, which is the right distance for that planet and that star. That's the crucial distance. If it was orbiting faster, it would whiz off into deep space; if it were orbiting slower, it would spiral into the star. So, there is a kind of selection of planets to be orbiting at the right speed and at the right distance from their stars.

But that's not cumulative selection, that's one-off, single-generation selection. It's like one generation of biological selection. It's like finches who have the wrong size of beak for a hard winter. The ones with the wrong size of beak die, so in the next winter, the next generation have all got the right size of beak. That's one generation.

What's really crucial about biological evolution is that that doesn't stop at one generation, it goes on to the next and the next and the next, and it takes hundreds, it takes thousands of generations to build up, cumulatively, the really impressive adaptive complexity that we get in living things, like eyes and elbow joints. So, that's the reason why solar systems don't look very impressively designed, whereas living bodies look very, very impressively designed indeed. They've been through many generations of cumulative selection.

Lanny Swerdlow: I was listening to your previous interview and a question popped into my mind that I wanted to ask; it's kind of a hot-button question. They asked you a question about children being gullible and you explained that this is an adaptive mechanism, that they have a lot to learn when they're young, so they'll take in a lot of information. Some of the information is good, some of the information is bad, and the problem is that once they've taken in this information they're pretty well set for the rest of their lives. Is this one of the reasons explaining why religion and belief in supernatural forces is so ingrained in people because it's indoctrinated into them when they're very young and very gullible? and even when they get older and can start reasoning better, it's been so ingrained into them that they can't get out of it?

Richard Dawkins: Yes, I do think that. What would be consistent with that view is the fact that (really, rather remarkably) of the people who are religious, the

religion that they have is almost always the same as that of their parents. Very occasionally, it isn't. This is an almost unique feature about people's beliefs. We talk about a child as being a 4-year-old Muslim or a 4-year-old Catholic. You would never dream about talking about a 4-year-old economic monitorist or a 4-year-old neo-isolationist, and yet, you can see the parallel.

Lanny Swerdlow: Yes!

Richard Dawkins: Children really ought not be spoken of as a Catholic child or a Muslim child. They ought to be allowed to grow until they're old enough to decide for themselves what their beliefs about the cosmos are. But ... the fact [is] that we do treat [children] that way, and ... parents seem to be regarded as having a unique right to impose their religious beliefs on their child; whereas, nobody thinks they're going to impose their beliefs about -- I don't know -- why the dinosaurs went extinct, or something of that sort. But religion is different. And I do think that you can explain an awful lot about religion if you assume that children start out gullible. Anything that is told to them with sufficient force -- particularly if it's reinforced by some kind of threat, like, "If you don't believe this, you'll go to hell when you die" -- then it is going to get passed on to the next generation. Above all, "You must believe this, and when you grow up, you must teach your children the same thing." That, of course, is precisely how religions get promoted, how they do get passed on from generation to generation.

Lanny Swerdlow: Almost sounds Darwinian! Last question, last night ... I saw ... the program, and I read about you, and then they had a little squib, in the program, of somebody opposing you. I was kind of taken aback by that.... Obviously, what you're talking about is very controversial, because some people who are religious feel it's attacking their very basic religious beliefs. I wonder if you might have a comment on -- here's a science group that, for some reason, feels so pressured by religions (or something), that they'll do an extraordinary thing by putting a religious argument in a Program; something they've never done before. How do you react to that?

Richard Dawkins: I think that you're overreacting to this particular thing. I think that when somebody's trying to sell tickets, it's quite good to put in a -- er, some negative, um -- I don't blame them for that at all. The particular extract that was put in was not by any known person. It was just a letter to the editor of a journal in which I'd had an article published. The person who wrote it is not somebody I've ever heard of; it was not a refereed article. It was just that if you say anything in the press that remotely treads on people's religious toes, all hell breaks loose. You always get a great mailbag full of stuff. Now, I just throw it straight in the bin! Newspapers, obviously, have a duty to publish some random selection of the papers that they get in, and I think that's what happened in this case.

Lanny Swerdlow: Finally, ... do you see the concepts of evolution as sort of an atheistic explanation of the origins of life? And, is that why the religions have so much problem with it, because it undermines their basic foundations?

Richard Dawkins: Well, evolution is different about this, because there are a large number of evolutionists who are also religious. You cannot be both sane

and well educated and disbelieve in evolution. The evidence is so strong that any sane, educated person has got to believe in evolution. Now there are plenty of sane, educated, religious people: there are professors of theology, and there are bishops ... and so obviously they all believe in evolution or they wouldn't have gotten where they have because they would be too stupid or too ignorant. So, it is a fact that there are evolutionists who are religious and there are religious people who are evolutionists.

My own personal feeling is that it is rather difficult. I find that the reason that I am no longer religious is that the argument from design has been undermined by evolution. So if the basis for your religion is the argument from design, if the reason why you are religious is that you look at the world and you say, "Isn't it beautifully designed! Isn't it elegant! Isn't it complicated!" then Darwinism really does pull the rug out from under that argument. If your reason for being religious has nothing to do with that, if your reason for being religious is some still, small voice inside you which utterly convinces you, then the argument from design, I suppose, has no bearing on that. But what, I think, Darwinism has done is utterly to destroy the argument from design which, I believe, is probably, historically, the dominant reason for believing in a supernatural being.

Lanny Swerdlow: Thank you very much! I sure appreciate your time.

Richard Dawkins: Thank you.

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