

Dawkins, Evolution and Atheism

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Author's Note

This "version" of the lecture on the Dawkins, Evolution and Atheism is a revised version for the lecture on 23 March 2007 at The William Lockhard Circle in Kingsland. It is provided for the convenience of those who came to the lecture. I intend to "tidy up" the notes below and to publish them as an article in Faith Magazine due course. In the meantime, no permission is given to publish these notes in their present form in print or on the internet.

Introduction to Dawkins

I have a great respect for Richard Dawkins. His explanation of the process of evolution by natural selection is an excellent example of lucid popular scientific writing. I can agree with him about the beauty of the natural world and the wonder of the process of cumulative selection. Sadly, as we shall see, he fails to give the same intellectual consideration to the vast area of study that is theology and he descends to a populist attack on organised religion, and indeed any type of religious faith. His deserved authority as an exponent of scientific discoveries for the common man has given him an undeserved authority as a proponent of atheism.

However, let us be positive to start with and examine the good things that he has brought to us with his best-selling books.

The Selfish Gene

Written in 1976, *The Selfish Gene* was not a controversial book at first but, as Dawkins points out, it became more and more controversial as the science in it became more widely accepted.¹ By then, of course, he had written *The Extended Phenotype* and *The Blind Watchmaker* which emphasised his atheism.

We usually think of genes as the means by which organisms reproduce themselves. Dawkins contends that in fact, the primary focus should be on the genes themselves as the units of survival. The bodies or organisms in which the genes are found are the means by which genes successfully survive.

Dawkins is aware that the term "selfish" is something that seems to indicate conscious choice and he makes it clear that the word is only used in a metaphorical sense. Nevertheless, he gives a powerful account of natural selection: the process by which, over a long period of time, small changes that tend to be successful can accumulate the kind of large scale changes that are visible in the variety of plant and animal life that we see on the planet.

¹ *The Selfish Gene*, Preface to the 1989 edition, page x.

The Extended Phenotype

In *The Extended Phenotype*, Dawkins deals with this observed variation. He shows that the successful replication of genes accounts for the variation of species and indeed their modification of the environment (the dam of a beaver, the nest of a bird etc.) Here also, he elaborates the theme that there is no "why" in evolution, no "purpose" as such. It is simply the operation of mathematically describable processes whereby genes mutate and survive or die out depending on the resulting changes to the organism that the mutation produces.

Climbing Mount Improbable

Mount Improbable is a metaphor for the process of natural selection. It is impossible to jump to the top of a mountain in one go. However, by using a gentle sloping path, and small steps, it is possible over time to get to the top.

Similarly, Dawkins demonstrates, it is possible for large changes to be brought about by a long series of very small changes, each of which is successful in making the organism a little bit better at surviving in its environment.

Dawkins is keen to dismiss the idea of design. It is not necessary for the process of natural selection that a person see the end result. It simply happens because of the survival or otherwise of genetic material which is responsible for the "phenotype" or observable properties of the organism. He pays particular attention to the evolution of the eye because this is an apparently impossible achievement through natural selection. Dawkins shows not only that it is possible for an eye to evolve through natural selection in a short enough time but that there are several possible ways for the eye to evolve and, in fact, that eyes have evolved independently in many different ways.

As a corollary of his description of natural selection, Dawkins vehemently opposes the Judaeo-Christian idea that mankind should "dominate the earth".

River out of Eden

The metaphor here is used to show the path of DNA developing from the point when replicating molecules began. The various rivers of life can be traced through the digital information that DNA provides us. Again, Dawkins emphasises that it is the survival of DNA that is the focus. The successful organism ensures the survival of the pattern of DNA and therefore the continuance of the "river."

Unweaving the Rainbow

In *Unweaving the Rainbow*, Dawkins begins with the charge made by Keats that Newton had destroyed the poetry of the rainbow by explaining the origin of its colours. He offers a spirited defence of the power of science to arouse wonder in us.

The God Delusion

This is the most recent of Dawkins' books and frankly, I was disappointed with it. He focuses on religion rather than science and offers a weak defence against the argument for the existence of God from design. He posits the "multiverse" as his answer. We will deal with this unsatisfactory argument in due course.

In this book, Dawkins also attacks religion in general and Christianity in particular. He says, for example, that educating children in a religious faith is a form of child abuse.

The Blind Watchmaker

Perhaps his most important book for our purposes, *The Blind Watchmaker* takes its title from the argument that the 18th century Anglican clergyman, William Paley constructed for the existence of God.

Paley argues that if we come across a watch, we must assume that it was designed and made by someone. By analogy, the complex and fascinating organs of a body cannot simply "be there" they must have been designed. Paley's example is the human eye with its intricate parts and mechanism which, like the watch, must have been designed by someone.

One problem with Paley's argument is that some of nature seems to be rather less than beautiful. Darwin, while admiring Paley's reasoning, wondered about "creeping parasites" that lay their eggs in the bowels of other animals. We could doubtless think of our own pet "horrors" in the natural world.

But there is a more significant problem with Paley's argument and it is central to what we need to think about tonight. It is essentially an argument for a "God of the gaps." We cannot imagine how an eye could come about other than by a designer.

Therefore, Paley argues, there must be a designer. But what if we could describe how the eye came about and show that there are natural causes which make the eye the wonderful organ that it is?

In fact, as Dawkins repeatedly shows in his writings, we can describe how the eye evolved through the mechanism of natural selection via many small changes over a period of time that is long as far as we are concerned but short in terms of the life of the planet.

Therefore, if we have relied on the "God of the gaps", we have now closed the gap by a scientific explanation.

Disbelieving in an imaginary God

However, Christians do not rely on a "God of the gaps." Well before the publication of Darwin's work on the Origin of Species, John Henry Newman, for example, had dismissed the argument of Paley as "a false gospel."

Dawkins' rejection of God is often the rejection of a God that Christians do not believe in. Newman again was quite happy to accept Darwin's theory of evolution on the grounds that it was essentially Christian to allow that God worked through secondary causes.

We may take a simple example – perhaps Paley's watch would do. A primitive person who had never seen a watch before might conclude that this was something sent down by the gods. If his faith was based on this, it would be a great disappointment for him to visit a watch factory and see human beings making watches.

Similarly, a worshipper of the sun who believed that it was a god would be disappointed to find that the sun could be described in physical terms and that we could give a coherent account of the way in which the sun was formed and the way in which it would eventually end.

Science began to make real headway within the Christian culture of Europe precisely because Christian thinkers were interested in the universe and the way that it worked. They were interested because they believed that it was essentially good and that there was a purpose in its creation. The clash of personalities that was behind the Galileo affair depended essentially on two different views of how to conduct science – views that were both represented in the Catholic Church. The view that was ultimately vindicated was that of modern science, not of the 17th century Inquisition as we see from the establishment of the Linnaean Society and its successor, the Pontifical Academy of Sciences and the series of statements recognising the human error in the case of Galileo, the most recent of which was made by Pope John Paul II.

Rejecting a non-existent faith

If Dawkins rejects a God that we do not believe in, he also rejects a faith that we do not profess. For Dawkins,

Faith is the great cop-out, the great excuse to evade the need to think and to evaluate evidence. Faith is belief in spite of, even perhaps because of the lack

of evidence... Faith is not allowed to justify itself by argument.²

Now, in fact, no theologian, ancient or modern could be found to support such a ridiculous notion of what faith is. Dawkins tries to adduce Tertullian in his support but, as McGrath points out in his book *Dawkins' God*, Dawkins has made an elementary mistake of interpretation of Tertullian that would be obvious to an undergraduate theologian.

Rigorous scholarship – except for theology

In fact, as McGrath shows, Dawkins is rigorous in his scholarship and argument, merciless in his appeal to evidence and hard fact – except when it comes to his description of anything to do with theology.

And we find in Dawkins' writings various positions adopted regarding religion, the human person, morality and social policy which have nothing whatever to do with the science of evolution and everything to do with Dawkins' own views.

Dawkins competently demolishes weak arguments for the existence of a “God of the gaps.” He also demolishes many arguments of the “creationists”, Christians who do not accept the mechanism of natural selection. What he does not do is to take seriously the arguments for the existence of God that would be available for him to consider from theologians at his own University and indeed from many scientists, especially those working in physics, astronomy and cosmology.

Back to basics

Therefore we need to look to some of those arguments now.

The laws of physics

Dawkins shows that the mechanism of natural selection can account for the wonderful variety of life that we observe on earth. Rightly in my view, he argues that we do not need any additional explanations. By way of analogy, we can describe what is happening when a kettle boils. We do not need to suppose that there is an angel who comes in and boils the water when it has been heated for a while.

But the laws of physics themselves are simply left there. The mechanism of natural selection is a marvellous application in the world of the laws of physics when applied to the complex molecules of DNA. The simple statements of the constants and fundamental laws of the universe describe what is necessary for the process to work. They are a part of the description of the universe. We can test them out by applying them in our own technology or by

observing how they work in the much more advanced applications that we observe in nature.

The account of the universe

We observe – and Dawkins agrees vehemently – that things in the universe do not simply happen “by chance.” Whether we are speaking of the falling of a body to the earth under the law of gravity or the natural selection which results in the formation of the human eye, there is an explanation in terms of how the world works – ultimately in terms of the laws of physics.

The study of the causes of things is the whole foundation of science. What Dawkins and Einstein and Stephen Hawking are doing is to look to the causes of things to explain how they come about. To say that things are “just there” is not an explanation and it is the end of science.

What we do when we explain things is to explain them in terms of other things. We explain the formation of the eye or the heart in terms of the DNA which gives rise to that particular organ. We can explain DNA in terms of the constituent nucleotides which make it up. And we can explain them ultimately in terms of the physics of the formation of molecules.

Each time, we are explaining one thing in terms of another thing that is not simply “just there.” Even the universe itself can be described in terms of the laws of physics. This was the great achievement of Einstein's general theory of relativity in 1915 and Hubble's discovery in 1929 that the universe is expanding. (It is from this explanation that the theory of the “big bang” at the origin of the universe derives.)

Still some explaining to do

So with the universe itself, “there is still some explaining to do”³ The universe cannot be its own explanation because it can be demonstrated that it is, itself something that acts in an ordered way. It obeys the laws of physics. Why? It could have been otherwise. Simply to shrug one's shoulders and refuse to take up the question is not an explanation. It is not a “scientific” approach.

Therefore, we must seek outside the universe for an explanation of the universe itself. The universe is the sort of thing that is caused to be in a particular way. We still have some explaining to do.

The mind of God

And if we are looking for an explanation outside of the material universe. We will be asking why the universe exists and why it exists as it does. And, as

² From a lecture entitled *Lions 10, Christian nil*, quoted by Alistair McGrath in *Dawkins' God* page 84

³ Faith Pamphlet *Can we be sure that God exists?*

Stephen Hawking himself points out, if we answer that question, we

It would be the ultimate triumph of human reason – for then we would know the mind of God.⁴

Hawking was probably trying to be provocative with this statement. However, Christian thinkers have beaten him to this point. That is exactly what we want to do when asking questions about the fundamental cause of the universe. We are searching for God.

Fundamental to this is the positive appreciation of science in our argument for the existence of God. The “God of the gaps” argument overturns our reasoning. In brief, we do not say “Science cannot explain this, therefore there is a God.” On the contrary, we can say “Science *can* explain this, therefore there is a God.”

A multiverse?

Dawkins ducks the argument

I was excited to find that in *The God Delusion*, Dawkins addressed the question of the fundamental laws of physics as a serious argument for the existence of God. Then I was saddened to find that his only answer was “the multiverse.”

This is the theory that there are many universes, most of them dull, with perhaps only one in which intelligent life can develop.

Not an evidence-based assertion

The Faith Pamphlet already quoted addresses this theory:

In the first place there is absolutely no evidence for any other universe than our own. There never could be. By definition, the universe is everything that we could ever possibly observe or be influenced by. But even if we allow this flight of fantasy, where did all the other universes come from? What guarantees that any “interesting” universes exist? Why are they not all boring? And whose bright idea was it to make lots of different universes so that one, at least, would evolve intelligent life? ... We still need an intelligent Designer.

Descent into the meaningless

But the many-universes theory is even sillier still. If you can explain evolution away by supposing that there are many universes, and evolution will occur in a few of them just by chance, then you can explain anything and everything in exactly the same way. For instance, why do aeroplanes fly? Well, there are a huge number of universes, and in almost all of them aeroplanes do not fly—we just happen to be in one where by chance they do. In the end, everything becomes completely meaningless.⁵

Who made God?

At one point, Dawkins refers to the question with which Bertrand Russell plagued his nanny: “Who made God?” In fact, you do not have to be Bertrand Russell to ask this question. Very many parents and teachers have heard this natural question from children. Like many children’s questions, it gets to the heart of an important philosophical question.

Remember that we were speaking of how the scientist will explain one thing in terms of another. This is the way that science operates within the universe. The point that we got to was how we might explain the universe itself. We would not succeed in our quest if the explanation was in terms of something else that needed explaining, something that had another cause. Stephen Hawking quotes the amusing example of the lady who said that the world was standing on a turtle. When asked what that turtle was standing on, she relied that it was another turtle. When quizzed about this turtle, she said that she was not going to be fooled by this sort of argument and triumphantly proclaimed “It’s turtles all the way down.”

Precisely what we are looking for is something that does not need a further explanation or a further cause. We cannot have an infinite chain of causes because that too does not have to exist as it does. It still requires an explanation. All that we have accomplished is to bring in a further inexplicable and unevidenced infinite chain. Why it is there is still a question that needs answering.

Nor can we say that the universe was simply “always there.” The most important corollary of Hubble’s discovery of the expanding universe is that the universe had a beginning, precisely that it was not “always there.”

When we speak of God, it is precisely of a being who is “always there,” a being who is not caused and does not admit of further explanation. To ask “Who made God?” is to mistake God for some kind of thing or person who needs a cause, who might not have been there. God is the one who is not made but who always is. This theological statement finds new relevance when we are faced with a universe that itself obeys the laws of physics and needs to be grounded itself, as the universe, in an uncaused cause which exists necessarily and which admits of no explanation outside of itself. As the penny Catechism put it “God exists alone of himself.”

⁴ Stephen Hawking in *A Brief History of Time*.

⁵ Faith Pamphlet *Can we be sure that God exists?*

A Unity Law of control and direction

Search for the Grand Unified Theory (GUT)

We can, in fact go further across the “threshold of the mind of God.” What God has caused to exist is a universe that is shot through with meaning, with things that can be explained in terms of other things. The laws of physics are fundamentally very simple. Let us take an example

when Isaac Newton “discovered” gravity, what he actually did was to discover the universality of gravitation. What he realised is that the force that makes apples fall on earth is the same as the force that makes the moon stay in orbit around the earth, and makes the earth and the other planets orbit the sun. Gravity is not just something on earth, it applies throughout the universe. Since Newton’s time we have discovered that the same force of gravity explains the formation of stars, the existence of black holes, and the development of the large-scale structure of the universe from the Big Bang onwards.⁶

Maxwell’s equations are another example though less well-known to the non-scientist. Electromagnetic waves are fundamental to the universe as is the speed at which they travel: the speed of light.

It can be said that all the fundamental laws of the universe are aspects of two laws – quantum mechanics and general relativity. The hope among physicists today is that a single “Grand Unified Theory” (GUT) could be worked out. To do so would be to show that the universe as a whole could be described in terms of a single law underlying all of the complex development of the universe.

At the threshold of the mind of God

Here again, we are at the threshold of the mind of God – a God who is supreme intellect as well as creative will: in other words, a God who is ultimate wisdom.

The GUT no explanation of itself

The convergence of science upon a GUT is the expression in scientific terms of what this would mean for the material universe. The GUT cannot itself explain how the universe came into existence. The laws of physics are expressed in terms of rules, constants and equations. The ultimate reason for our wonder and awe is that they exist and operate in the universe.

Design in the universe

“Intelligent Design”

The idea of “intelligent design” has been linked recently to an argument against natural selection. I

wish to appropriate the expression for a Christian account of a universe in which natural selection does operate.

Richard Dawkins rejects the idea that there is a purpose in natural selection. He is able to describe in terms of DNA why it is that things evolve as they do. The survival of the patterns of DNA is all that he needs to describe evolution even of very complex organisms like mammals and complex organs like the eye.

Natural selection does not “just exist”

However, as we have seen, the mechanism of natural selection does not “just exist” in an explanatory vacuum. The laws of physics are a necessary part of the overall explanation. And as we have seen, the fact that the universe itself is governed by these laws makes the universe stand in need of an explanation outside of itself.

The ultimately simple description of the universe by physicists and the realistic expectation of a GUT lead us to a further question which we may now raise.

Why are those laws and constants as they are, with the potential for the formation of galaxies, the formation of complex, self-replicating molecules and the evolution of life? Physicists have gone beyond Dawkins’ explanation of life in terms of DNA or more primitive molecules to the point that we are able to describe the universe itself.

Yet the way that the universe is set up is “contingent”, it does not have to be this way. But it does have to be this way if a fish is to evolve. Tinker with the laws of physics even slightly and you will not have the kind of universe that will develop in the way that ours has nor the kind of earth on which we live.

The anthropic principle

This has led some scientists to speak of an “anthropic principle.” The way that the universe is, physically, is extremely finely tuned in such a way that life, and ultimately human life can evolve. This expression has sometimes been misunderstood or misused and therefore I do not want to emphasise it overmuch. However, the important point to grasp is that the evolution of life – taken at its most “reductionist” in the terms set out by Richard Dawkins (an account which I find most attractive and convincing) – depends on the ultimate laws of physics being as they are.

If we then consider the uncaused cause, the only necessary being who always is “just there”, we find, further that the supreme mind of God has created the universe in just such a way that we have evolved from it.

⁶ Faith Pamphlet *Can we be sure that God exists?*

Christ, Lord of the Universe

I want to add a specifically Christian reflection on this matter.

The wisdom of God

The scriptures speak of the wisdom of God in reverent terms and the Gospel of St John identifies the Word of God with the second person of the Blessed Trinity. St Paul speaks of Christ through whom all things are created. I believe – and Pope John Paul II reflected on this in his meditations at the turn of the millennium – that the scientific account of the universe enables us to see in a most magnificent way what St Paul was speaking of.

The unity law for the spirit

We have spoken of God as the creator of the material universe, a universe which is full of meaning because of the fundamental laws (or law) according to which it is constituted. A further lecture would need to examine the creation of the spiritual soul: something that cannot be described in terms of physics and cannot therefore be produced by the mechanism of natural selection. The spiritual soul must always be directly created at the first moment of the existence of the human being.

But in the wisdom of God, his unified and wonderful mind which is reflected in the laws (or law) of the universe, is also present in his provision for the spiritual soul of the human person.

We could trace this wisdom through the account of the fall of man, the revelation of God in the old Testament and the final revelation in Jesus Christ, God the Son.

Christ, the ultimate meaning for the universe

Here, I will simply jump to the end because it is in Christ that all matter in the universe finds its ultimate meaning. Christ, the Lord of the Universe, is the incarnate wisdom of God. In him, there is the final consummation of all the development of the universe through the formation of the galaxies, the evolution of life and the development of God's provision for his people.

All in and for Christ

He is the image of the invisible God, the first-born of all creation; for in him all things were created, in heaven and on earth, visible and invisible, ... all things were created through him and for him. He is before all things, and in him all things hold together. (Col 1.15-17)

Some notes from questions

Here I wish to make some notes, partly for my own benefit, in response to some of the questions that have arisen when I have spoken on this subject. In due course, they may be worked up into a proper appendix.

String Theory

In one recent talk, having fielded one or two questions about how string theory might impact on the argument I have outlined, one questioner, a religious sister, asked me “Can you explain simply what string theory is?” It was a fair question. There is no point talking about a theory if you can’t explain simply what you are talking about. So here is a passage from the introduction to the article “String Theory” in the *Wikipedia*:

String theory is a model of fundamental physics whose building blocks are one-dimensional extended objects (strings) rather than the zero-dimensional points (particles) that are the basis of the Standard Model of particle physics. For this reason, string theories are able to avoid problems associated with the presence of pointlike particles in a physical theory. Studies of string theories have revealed that they require not just strings, but also higher-dimensional objects.

The basic idea is that the fundamental constituents of reality are strings of energy of the Planck length (about 10^{-35} m) which vibrate at resonant specific frequencies[1]. Another key claim of the theory is that no measurable differences can be detected between strings that wrap around dimensions smaller than themselves and those that move along larger dimensions (i.e., physical processes in a dimension of size R match those in a dimension of size $1/R$). Singularities are avoided because the observed consequences of “big crunches” never reach zero size. In fact, should the universe begin a “big crunch” sort of process, string theory dictates that the universe could never be smaller than the size of a string, at which point it would actually begin expanding.

Interest in string theory is driven largely by the hope that it will prove to be a theory of everything. It is a possible solution of the quantum gravity problem, and in addition to gravity it can naturally describe interactions similar to electromagnetism and the other forces of nature.⁷

As far as the argument for the existence of God goes, we should remember that we are not arguing for a “God of the Gaps”, nor are we using a particular theory to prove that God exists. As Christians, we are positive about the ability of the human mind to know. Therefore we are also positive about the scientific

enterprise: we believe that it is worth doing science because we can find out about the universe. Moreover, we can apply that knowledge, sometimes in unexpectedly beneficial ways.

Further refinements in theoretical physics only add to the force of the argument: we are looking for a more detailed or a more complete explanation of how the universe works. It is the rejection of science, the idea that there is nothing we can safely conclude about the universe, that would undermine our argument for the existence of God. That kind of scepticism would mean that we would no longer have an argument from science that there must be a further explanation.

Is the argument circular then?

Following this discussion, one questioner was troubled that the argument for the existence of God would work whatever science discovered. Therefore, was it not vacuous?

Again, I would insist that we are not tying our argument for the existence of God to the success or otherwise of a particular scientific theory.

However, the success of the scientific enterprise, its practical applications in terms of technology, show us that we are getting somewhere. Our argument would collapse if it could be shown (How?) that the universe was indeed simply “random”, that is to say, that there was no way of describing laws or constants, no way of making any predictions about what would happen and no way of testing them experimentally.

There are some people who seem to be heading down this path. Relativism is a seductive idea and a natural bedmate of relativism in morality and history, to take two common examples, would be relativism with regard to the natural world. The common statement “It’s only your view” could be applied infuriatingly to science as well. If you then say that you have carried out an experiment and made a prediction, the interlocutor could adduce a conspiracy theory of some sort to give an alternative explanation that does not need the laws of physics.

Ultimately, the denial of the existence of God and of objective truth will result in the denial of the objective character of the scientific enterprise.

⁷ Wikipedia article “String Theory” at http://en.wikipedia.org/wiki/String_theory (Accessed 15 May 2006)