

insight on how to defeat Darwinism. He believes the best approach in the public square is to focus on intelligent design, especially in the biochemical realm as so marvellously presented in Michael Behe's book, **Darwin's Black Box**. In this way we create a wedge, widening the crack in the Darwinian log. Once the wedge is driven, his hope is that the debate will begin. One of Johnson's hopes for success rests upon his observing that intellectuals are not as confident as they were in the 1960s that a totally secular society works. We have

'...an intellectual community that is itself confused and divided over the unanticipated consequences of modernism . . . Western Society will soon be ready to listen to a better idea', (p. 107)

Dedicated Christians will have a chance to speak and witness to the world at large, Johnson believes. He then wonders whether we will have a better idea to offer. No matter how hard naturalistic scientists such as Richard Dawkins try, the evidence for design is an irrefutable argument for God's existence and power (Romans

1:20). This is where Johnson and Behe are at their best. Although Johnson does not seem to favour straightforward Genesis creation, I believe we must stretch forward gathering and upholding the evidence for a global Flood and a young Earth, as clearly taught in Scripture; this is the 'much better idea' we can offer.

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Climbing Mount Improbable

*by Richard Dawkins
Penguin Books Ltd,
Harmondsworth, Middlesex, England*

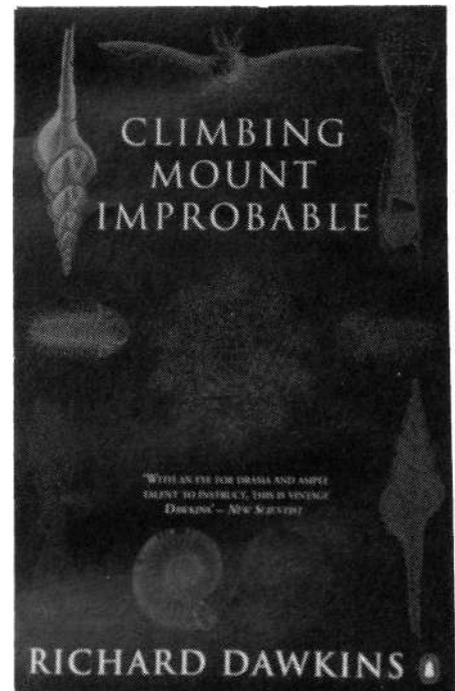
Reviewed by Jonathan Sarfati

This is the latest in a series of books by Richard Dawkins designed to show that it's possible to be an 'intellectually fulfilled atheist'.¹ Computer mogul Charles Simonyi recently endowed Dawkins with a post as 'Chair of Public Understanding of Science' at Oxford University, but the British author Paul Johnson called it 'Oxford's first Chair of Atheism'.² But true science involves repeatable, observable experimentation in the **present**, which includes physics, chemistry, experimental biology and geology, etc. Dawkins has made no notable contributions to any of these, or even to the history or philosophy of science. His main claim to fame is his ingenious story-telling about what **might** have happened in the unobservable **past**. For Dawkins sees the design argument as the strongest for theism (*cf.* Romans 1:22ff.), and he has led a long crusade trying to

show that mutations and natural selection can adequately explain all the complex structures in the living world. He is therefore a worthy successor to T. H. Huxley to the title of 'Darwin's Bulldog'. His tenacity of purpose in trying to show that there is no purpose is astounding.

But despite Dawkins' hero-worship of Darwin, Solomon had written, 'there is nothing new under the sun' (Ecclesiastes 1:9). The philosopher and priest G. H. Duggan, in reviewing a Dawkins book, pointed out that a form of Darwinism had been proposed by the ancient Greek philosopher Empedocles.³ The underlying philosophy of evolution is that man can determine truth apart from God, and this philosophy started in Eden.

Creationists cannot afford to ignore Dawkins. Thus a recent book responding to anti-creationists,⁴ while



excellent overall in my opinion, was justly criticised for overlooking Dawkins and making a small mistake as a result.⁵ Dawkins has a widespread influence well out of proportion to the actual scientific merit of his books. This is partly due to man's rejection of God, and Dawkins tickles their ears the way they want. However, his message is anything but inspiring — we are robots programmed by DNA to replicate more copies of that DNA.

Dawkins writes in a lucid style, with never a dull moment — he throws

in much informative material in real science which keeps the reader interested. And the real science in the book camouflages the many just-so speculations Dawkins resorts to.

The book's title is a parable: many structures in living organisms are so complex that there is a vanishingly small probability of producing them in a single step — this corresponds to leaping the high Mt Improbable in a single step. But, says Dawkins, this mountain has a gently upward-sloping terrain on the other side, where a climber can ascend gradually, constantly progressing to the top. This corresponds to the neo-Darwinian mechanism of evolution — mutations + natural selection. Mutations produce gradual improvements, and natural selection means that organisms which have them are slightly more likely to leave offspring. So a later generation of organisms is slightly more complex, or higher up the slope of Mt Improbable. This process is repeated until the dizzy peaks are scaled by this ever-so-gradual process.

SELF-REPRODUCTION, A PRE-REQUISITE

Indeed, the origin of the first self-reproducing system is recognised by many scientists as an unsolved problem for evolution, and thus evidence for a Creator.⁶ There is good reason for this: even the simplest self-reproducing organism contains vast quantities of complex, specific information. *Mycoplasma genitalium* has the smallest known genome of any free-living organism, containing 482 genes comprising 580,000 bases.⁷ Of course, these genes are only functional with pre-existing translational and replicating machinery, a cell membrane, etc. But *Mycoplasma* can only survive by parasitising more complex organisms, which provide many of the nutrients it cannot manufacture for itself. So evolutionists must posit a more complex first living organism with even more genes.

More recently, Eugene Koonin and

others tried to calculate the bare minimum required for a living cell, and came up with a result of 256 genes. But they were doubtful whether such a hypothetical bug could survive, because such an organism could barely repair DNA damage, could no longer fine-tune the ability of its remaining genes, would lack the ability to digest complex compounds, and would need a comprehensive supply of organic nutrients in its environment.⁸

Yet even this 'simple' organism has far more information than can be expected from time and chance, without natural selection. The information theorist Hubert Yockey calculated that given a pool of pure, activated biological amino acids, the total amount of information which could be produced, even allowing 10⁹ years as evolutionists posit, would be only a single small polypeptide only 49 amino acid residues long.⁹ This is about 1/8 the size (therefore information content) of a typical protein, yet the **hypothetical** simplest cell above needs **at least** 256 proteins. And Yockey's estimate generously presupposes that the many chemical hurdles can be overcome, which is a **huge** assumption, as shown by many creationist writers.¹⁰⁻¹³

In fact, Dawkins admits:

'[T]he original replicator probably was not DNA. We don't know what it was' (p. 261).

In both **Climbing Mount Improbable** and **The Selfish Gene**,¹⁴ Dawkins opts for a replicating molecule, perhaps RNA, as the first entity, although RNA is itself not self-replicating, is chemically unstable, and there are insuperable chemical hurdles preventing its prebiotic synthesis.¹⁵ In another book, **The Blind Watchmaker**,¹⁶ he advocated A. G. Cairns-Smith's outlandish idea that clay minerals with self-replicating patterns of crystal defects were the first organisms. Dawkins relied on Cairns-Smith's popular book on this idea, **Seven Clues to the Origin of Life**.¹⁷ But Dawkins failed to mention that Cairns-Smith is mainly driven to such a desperate expedient because of

serious chemical flaws in the more usual protein-first or RNA-first ideas in typical Oparin-Haldane (primordial soup) scenarios. Cairns-Smith's critique of such models in the first part of his technical book, **Genetic Takeover**,¹⁸ is one of the most convincing demolitions ever written, but Cairns-Smith's evolutionary faith prefers clay to a Creator.

Dawkins also cannot stomach such a conclusion. He makes the childish objection, similar to one he made in **The Blind Watchmaker**:

'[I]f we postulate him as our cosmic designer we are in exactly the same position as we started. Any designer capable of designing the dazzling array of living things would have to be intelligent and supremely complicated beyond all imagining. And complicated is just another word for improbable — and therefore demanding an explanation.' (p. 68)

Several things are wrong with this argument:

- (1) God is perfectly 'simple' — in theology, this means God, who is spirit (John 4:24), is not composed of parts, unlike organisms.³ It is almost amusing to see Dawkins musing on the alleged limitations of such a being, based on a complete misunderstanding.
- (2) It is only things which **have a beginning** which require a cause; God has no beginning so requires no cause.¹⁹

INFORMATION CONTENT

The above shows that it's impossible for ordinary chemicals to assemble into a self-replicating cell, since natural selection cannot come to their aid. But even if the first cell was granted, can natural selection increase the total quantity of information? As Dawkins himself says:

*'[T]here is enough information capacity in a single human cell to store the **Encyclopaedia Britannica**, all 30 volumes of it, three or four times over'*²⁰

The problem is, all **observed**

examples of natural selection involve sorting or loss of **pre-existing** information; evolution requires **new** genes with **new information**. Neo-Darwinism requires that mutations can generate this new information, but observed mutations have never been shown to do so. Sometimes a loss of information can help an organism so is 'beneficial', for example, beetles born without wings are less likely to be blown into the sea. But **loss** of wings is the opposite sort of change to what evolution needs.²¹

The information scientist Werner Gitt has shown that the laws of nature pertaining to information show that in all known cases, information requires a sender.^{22,23} Since living organisms have such a vast information content, Gitt points out that it is a sound application of science to deduce that this information also has a Sender.

Dawkins' atheistic faith cannot allow this, so he asserts that the complex features of the living world are not designed, but 'designoid', that is, having only the appearance of being intelligently designed. But can mutation + natural selection really violate known informational laws?

BIOCHEMICAL MACHINERY

Another book which appeared at about the same time as **Climbing Mount Improbable** was **Darwin's Black Box** by the biochemist Michael Behe.²⁴ This is replete with examples of biochemical 'irreducible complexity', systems which need many parts working together before they have any function. This includes the immune system, blood clotting, vision, cellular transport, cilia and flagella, etc. For example, Behe has pointed out that many components are needed at the right place and the right time to make a blood clotting system work. If even one is missing, the animal is either a hemophiliac, or else suffers blood clots in vital vessels. Either way, it's dead. It is small consolation to have a small edge over another animal, as per Darwin and Dawkins, if both die before they have

a chance to reproduce.

AT THE BOTTOM OF MOUNT IMPROBABLE? EYE EVOLUTION, A CASE STUDY

One major criticism of Dawkins' scenarios is that they presuppose an enormous level of complexity to start with. Indeed, Dawkins is repeating the error of Darwin — as Behe shows, Darwin was ignorant of the complexity of even the simplest cell that modern biochemistry has discovered.

When 'explaining' the origin of the eye, Darwin started with a light sensitive spot. Similarly with Dawkins' chapter on eye evolution. He relies on a computer simulation of gradual eye evolution by Dan Nilsson and Susanne Pelger, which claims,

*'it would take less than 364,000 years for a camera eye to evolve from a light-sensitive patch.'*²⁵

They start from a light-sensitive layer, with a transparent coating in front and a light-absorbing layer behind.

First, this layer bends gradually into a cup, so it can tell the direction of light rays increasingly well. This continues until it is curved into a hemisphere filled with the transparent substance. Secondly, bringing the ends together, closing the aperture, would gradually increase the sharpness of the image, as a pinhole camera does. But because a smaller hole cuts out light, and as there are diffraction effects if the hole is too small, there is a limit to this process. So thirdly, the shape and refractive index gradient of the transparent cover change gradually to a finely focusing lens.

However, Behe has shown that even a 'simple' light sensitive spot requires a dazzling array of biochemicals in the right place and time to function. He states that each of its

'cells makes the complexity of a motorcycle or television set look paltry in comparison'

and describes a small part of what's involved:

'When light first strikes the retina a photon interacts with a molecule

called 11-cis-retinal, which rearranges within picoseconds to trans-retinal. (A picosecond [10^{-12} sec] is about the time it takes light to travel the breadth of a single human hair.) The change in the shape of the retinal molecule forces a change in the shape of the protein, rhodopsin, to which the retinal is tightly bound. The protein's metamorphosis alters its behavior. Now called meta-rhodopsin II, the protein sticks to another protein, called transducin. Before bumping into meta-rhodopsin II, transducin had tightly bound a small molecule called GDP. But when transducin interacts with meta-rhodopsin II, the GDP falls off and a molecule called GTP binds to transducin. (GTP is closely related to, but different from, GDP.)

*GTP-transducin-metarhodopsin II now binds to a protein called phosphodiesterase, located in the inner membrane of the cell. When attached to meta-rhodopsin II and its entourage, the phosphodiesterase acquires the chemical ability to "cut" a molecule called cGMP (a chemical relative of both GDP and GTP). Initially there are a lot of cGMP molecules in the cell, but the phosphodiesterase lowers its concentration, just as a pulled plug lowers the water level in a bathtub.'*²⁶

And the eye-cup sounds simple enough when Dawkins describes it, but dozens of proteins control the structure of cells and their arrangement, and it needs molecular supports to hold the structure in place.

A major objection to the Dawkins scenario is that the ability to perceive light is meaningless unless the organism has sophisticated computational machinery to make use of this information. For example, it must have the ability to translate 'attenuation of photon intensity' to 'a shadow of a predator is responsible' to 'I must take evasive measures', and be able to act on this information for it to have any selective value. Similarly,

the first curving, with its slight ability to detect the direction of light, would only work if the creature had the appropriate 'software' to interpret this. Perceiving actual images is more complicated still. And having the right hardware and software may not be enough — people who have their sight restored after years of blindness take some time to learn to see properly. It should be noted that much information processing occurs in the retina before the signal reaches the brain.

Nilsson and Pelger admit that '*an eye makes little sense on its own*'²¹ and that they '*avoid the more inaccessible problem of photoreceptor evolution*',²⁸ although they remain convinced that eye evolution is possible. But the fact remains that, far from starting at the bottom of the mount, Dawkins starts very high up a sheer cliff, even if he, and Nilsson and Pelger, were right that there is a gentle plateau from there.

ARE MUTATIONS AND NATURAL SELECTION SUFFICIENT?

Dawkins, following Darwin, emphasises that any improvement by mutation, however slight, will add survival value. Even the most complex organisms can supposedly be built up from an accumulation of such changes over eons. But this assertion has been severely undermined in two recent books: Walter ReMine's **The Biotic Message**²⁹ and Lee Spetner's **Not By Chance**.³⁰ The objections include:

- (1) Mutation rate is very low — 10^{-9} - 10^{-10} per nucleotide per generation.
- (2) Of these, beneficial mutations are a small fraction — 90-95 per cent of mutations are harmful, 5-10 per cent are neutral. And as discussed before, observed beneficial mutations are not the information-gaining type needed for evolution.
- (3) The smaller the change, the smaller the selective advantage. This is expressed by the selection coefficient *s*. If a mutation has *s* = 0.001 or 0.1 per cent, a supposedly typical value, then the number of surviving offspring is

0.1 per cent greater for organisms with the mutant than without it. But the smaller the selective advantage, the more likely that random effects (for example, genetic drift) will eliminate it — its probability of survival is about $2s$.³¹ So the above mutation has only one chance in 500 of surviving, even though it is beneficial.

- (4) Even if a beneficial mutation survives, for it to become fixed in a population, the organisms not carrying it must be eliminated. This is the **cost of substitution**. The limits the amount of substitution which can occur in a given time. This is known as Haldane's Dilemma,³² after J. B. S. Haldane, one of the world's leading evolutionists (and a Stalin-supporting communist for a while). He **wanted** evolution to work, but couldn't get around his dilemma.

Take a population of 100,000. If only a male and female pair have the new trait, natural selection must eliminate the other 99,998 and all their heirs. If there is perfect selection (*s* = 1), this can happen in one generation. But this means that for every new trait, 49,999 individuals must be eliminated without offspring. (This should be a warning to theistic evolutionists: death is called 'the last enemy' [I Corinthians 15:26], so how could God use all these deaths as a means to achieve a 'very good' creation [Genesis 1:31]?) Then the population must be regenerated with these survivors.

Anyway, even if evolution happened at the maximum speed for 10 million years, how many traits could be substituted in a creature with human-like generation times of say 20 years? Only 500,000. This small number of nucleotides is only a small fraction of the forty 500-page books worth of information (120 million base pairs) which are needed to transform an ape into a man. And in real life, selection is far less intense, meaning that only about 1,700 substitutions

could occur.

These problems have largely been ignored in Dawkins' propaganda. Many of his computer simulations of evolution use 'organisms' with high reproductive rates (producing many offspring), high mutation rates, a large probability of a beneficial mutation, and a selection coefficient of 1. Also, his 'organisms' have tiny 'genomes' with minute information content, and they are not affected by the chemical and thermodynamic constraints of a real organism.

Nilsson and Pelger did account for selection coefficients, although they chose *s* = 0.01 for each step in their simulation, larger than considered typical in nature. But they took no account of the tiny rate of favourable mutations. They merely assumed a certain variability in a population, and assumed that this would remain constant throughout. But in a real population, natural selection could select only from the variability in **existing** genes for the best vision, culling those for inferior vision. This would reduce variability, because genes are eliminated. This is not the same as having mutations to produce better and better eyes. Neither did their simulation prove that simple mutations could continually produce 1 per cent improvements. Somewhere along the way, totally new genes would be required.

EVOLUTION OF FLIGHT?

As Dawkins says,

'to a first approximation, all animals fly . . . because . . . to a first approximation, all species are insects'.

Also,

'there are twice as many bird species as mammal species, and a quarter of mammal species are bats'.

Flying is of course a very complicated process, as any aircraft designer would know. Birds have a number of complex structures to enable them to fly: wings with a good aerofoil shape, the intricately structured feathers, the

lungs with their unique air circulation system through parabronchi, and the algorithm for the controlled muscle movements to achieve flight.³³

Again, Dawkins exudes confidence that neo-Darwinism can bridge the gaps from non-flying to flying animals. But he can't help admitting:

'My guess is that both bats and birds evolved flight by gliding downwards from the trees. Their ancestors might have looked a little like colugos. Birds could be another matter . . . Here's one guess as to how flying got started in birds . . . Perhaps birds began by leaping off the ground while bats began gliding out of trees. Or perhaps birds too began by gliding out of trees.' (pp. 113-114, emphases added.)

The example of eye evolution showed that Dawkins is a master of glossing over difficulties. In support of the running, jumping and mid-course correcting theory, he writes:

'The beauty of this theory is that the same nervous circuits that were used to control the centre of gravity in the jumping ancestor would, rather effortlessly, have lent themselves to controlling the flight surfaces later in the evolutionary story.' (p. 114)

The words 'rather effortlessly' make the mind boggle, but then his word 'story' inadvertently gives the game away.

Some more story-telling is evident in Dawkins' discussion of feathers. Alan Feduccia, a world authority on birds, says *'Feathers are a near-perfect adaptation for flight'* because they are lightweight, strong, aerodynamically shaped and have an intricate structure of barbs and hooks which makes them waterproof and able to repair their shape.³⁴

But Dawkins glibly states: *'Feathers are modified reptilian scales'*. But scales are folds in skin; feathers are complex structures with a barb, barbules and hooks. They also originate in a totally different way, from follicles inside the skin in a manner akin to hair. Finally, feather

proteins (ϕ -keratins) are biochemically different from skin and scale proteins (α -keratins) as well. One researcher concluded:

*'At the morphological level feathers are traditionally considered homologous with reptilian scales. However, in development, morphogenesis, gene structure, protein shape and sequence, and filament formation and structure, feathers are different.'*³⁵

SEX

The origin of sex is a puzzle for evolutionists. Sex has many disadvantages; for example, only 50 per cent of the genes are passed on to an offspring, so there is a 50 per cent chance of losing a beneficial mutation. And in a stable population, there is on average one offspring per parent, so asexual reproduction is twice as efficient at passing on genes to the next generation.

It is also biologically costly to maintain the sex organs, and maintain mechanisms to stop the male's immune system destroying his own (genetically different) sperm, and stop the female's immune system destroying incoming sperm or the offspring she carries (in viviparous organisms). Females obviously expend a lot of time and energy if they must bear live young. On the other hand, males eat about half the food so there can be only half as many females of the species bearing young. In an asexual population, **all** its members reproduce. Also, courtship rituals, conspicuous plumage, etc. are expensive and make the animal more vulnerable to predators. And in many cases, the male and female genitalia are precisely tuned so one could fit the other, meaning that they could not have evolved independently.

How could 'selfish genes' concoct a system with all those disadvantages, especially one which guarantees that some will be lost in the next generation? Creationists can explain the origin of fully functioning sexual

reproduction from the start in an optimal and genetically diverse population. Once the mechanisms are **already in place**, they have certain advantages. There is a 50 per cent chance of losing a harmful mutation without cost to the population (death of an individual). Sex also enables more variability, providing a greater capacity for adaptation. But to build them from scratch, no. The hypothetical transitional forms would be highly disadvantageous, so natural selection would work against them. Even Dawkins himself says:

'To say, as I have, that good genes can benefit from the existence of sex whereas bad genes can benefit from its absence, is not the same thing as explaining why sex is there at all. There are many theories of why sex exists, and none of them is knock-down convincing. . . Maybe one day VII summon up the courage to tackle it in full and write a whole book on the origin of sex!' (p. 75)

BAD DESIGN?

This argument is commonly brought up by evolutionists against creation. Many such arguments forget the Fall, and others are based on ignorance of the need for a particular arrangement. In the latter category is the allegation that the eye is imperfectly designed because the 'wires' (nerves) run between the photoreceptors and the light. Many anti-creationists besides Dawkins have argued thus — the roll of dishonour also includes Jared Diamond,³⁶ Kenneth Miller,³⁷ and George Williams and John Bonner.³⁸

However, Dawkins admits that the nerves are transparent, so don't detectably affect the image. More importantly, the ophthalmology researcher George Marshall pointed out:

'The light-detecting structures within photoreceptor cells are located in the stack of discs. These discs are being continually replaced by the formation of new

ones at the cell body end of the stack, thereby pushing older discs down the stack. Those discs at the other end of the stack are "swallowed" by a single layer of retinal pigment epithelial (RPE) cells. RPE cells are highly active, and for this they need a very large blood supply — the choroid. Unlike the retina, which is virtually transparent, the choroid is virtually opaque, because of the vast numbers of red blood cells within it. For the retina to be wired the way that Professor Richard Dawkins suggested, would require the choroid to come between the photoreceptor cells and the light, for RPE cells must be kept in intimate contact with both the choroid and photoreceptor to perform their job. Anybody who has had the misfortune of a hemorrhage in front of the retina will testify as to how well red blood cells block out the light. . . . The idea that the eye is wired backward comes from a lack of knowledge of eye function and anatomy.²⁹

If the photoreceptors were not in contact with the choroid, as per the 'superior' design of Dawkins *et al.*, they could not be regenerated efficiently. Thus it would probably take months before we could drive if we were photographed with a flashbulb, as another ophthalmologist, Joseph Calkins, points out.^{40,41}

CONCLUSION

I have not covered all the points Dawkins makes in a book of 300 pages. For example, he has chapters on spiderwebs, sea shells and segmentation. But there is plenty of information on two of his case studies — flight and sight — plus some general principles, to show that the Apostle of Atheism has a long way to go to make a convincing case for his faith.

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