

# Vitalism dusted-off as a 'solution' to evolution's fatal problems

**Evolution 2.0: Breaking the Deadlock Between Darwin and Design**

Perry Marshall

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Author Perry Marshall comes from an unusual background, for someone who studies evolution-related issues. He is not a biologist; however, his bibliography shows that he has an extensive knowledge of biology. In addition, he has tested his knowledge in online debates with evolutionists.

The author is a computer specialist who specializes in coded information. He gives many examples of coded information in this book, and does so in a lucid manner. Language is a form of code. Computers obviously depend upon code. DNA contains code. Marshall emphasizes the inability of biological information to arise spontaneously.

In a somewhat dramatic way, the author warns that the reader will be made uncomfortable by reading this book—be he an evolutionist or a creationist. As soon becomes evident, the drumbeat is unwarranted.

It soon becomes obvious to the informed reader that Marshall gives too much credit to certain developments of evolutionary theory, most of which are mundane, most of which have been known for a fairly long time, and none of which, upon close examination, substantially enhance the evidentiary basis for

presumed molecules-to-man evolution. This includes such phenomena as transposons, gene duplications, hybridization, epigenesis (neo-Lamarckism), horizontal gene transfer, accelerated mutation rates, and rapid speciation.

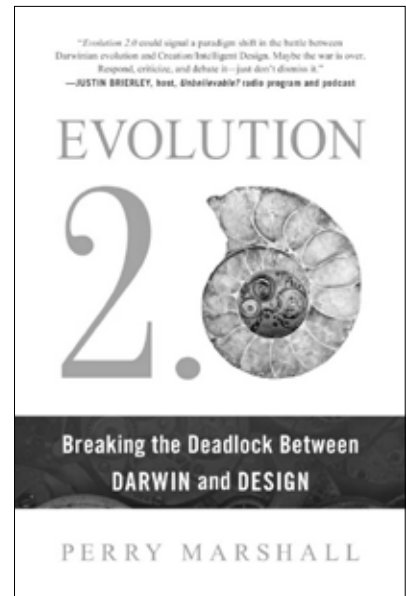
Marshall was once a young-earth six-day creationist (pp. 190, 248, 265). He now rejects creationism in large part because of what he thinks is the overwhelming evidence for an old earth. However, nowhere in the book does he show any hint of understanding the flaws of long-age dating methods or the evidences for a young universe. He now accepts evolution, while professing to be open minded to Divine intervention. It turns out, however, that he is holding to a confusing and contradictory mixture of evolutionary and teleological concepts.

## God or no God? Straddling the middle

Marshall takes a “pox on both your houses” approach towards both hard-nosed evolutionary atheists, and creationists as well as proponents of ID (Intelligent Design). He quips:

“The neo-Darwinists deny purpose, even though their language drips with purpose-laden terms like ‘selfish genes’. They criticize young earth creationists for insisting the Earth only *appears* to be millions of years old ... yet they claim that living things only *appear* to be purposeful. What’s the difference [emphasis in original]?” (p. 246).

However, informed YECs deny that the earth appears that old; age



has no appearance *per se*, but is the *interpretation* of certain appearances.

Marshall faults evolutionists for glossing over the insurmountable problems involving the supposed spontaneous origin of biological information. At the same time, he accuses ID proponents of being too quick to invoke a Designer.

In essence, Marshall believes that both sides are non-objective when dealing with God. One side invokes God for unsolved mysteries, while the other side discounts Him out of hand. Thus, to Marshall, the ‘god of the gaps’ has an evil twin, “God had nothing to do with it”.

Pointedly, the author rejects the standard ‘scientific’ position that God is outside of the realm of science. He comments:

“Every philosopher knows science cannot prove God. Hopefully, most scientists know this, too. But science’s intrinsic limitations don’t mean that God doesn’t exist ... Since science always relies on philosophical and metaphysical assumptions that lie outside of science, it is intellectually dishonest to ban debates about God and origins from the classroom

just because God cannot be scientifically tested” (p. 75).

Marshall believes that God and evolution can be reconciled if only both sides simultaneously embrace God and naturalistic processes, while letting free inquiry determine the limits of both. He elaborates:

“If, however, we take ‘Designer’ to be an *ultimate* explanation, with an unknown number of layers in between, then both nature and God receive their due respect. Science is freed from the corset of reductionism, and scientists gain greater reasons to pursue ambitious research programs [emphasis in original]” (pp. 213–214).

The foregoing sounds nice, but really offers nothing different from what is already going on anyway. The ID proponent generally believes that most of the layers of naturalistic explanations, for once-mysterious biological phenomena, are already known. For this reason, a designer is *not* a ‘god of the gaps’ copout.<sup>1</sup> Instead, the designer is a viable explanation for the remaining crucial biological mysteries, such as the origin of life. The evolutionist, on the other hand, believes that all the layers will eventually prove to be naturalistic, and so the Intelligent Designer is, or will be, squeezed out of existence.

Finally, Marshall’s formulation turns out to be a tautology, and a trivial one at that. If ‘designer’ just means ‘ultimate explanation’, then, by definition, the ‘designer’ must exist. Whatever made the universe is the ‘designer’. To the evolutionist, the ‘designer’ is nothing more than the blind evolutionary process itself. In fact, Marshall’s formulation turns out to be identical to the parallel redefinition of God, only using different words. If ‘God’ means ultimate reality, then, by definition, ‘God’ must exist. If a Supreme Being exists, and made the world, then He is the ultimate reality, and He rightly is called God. However, if naturalistic

evolution is ultimate reality, then, by definition, naturalistic evolution is ‘God’.

### ‘Bad design’ in nature?

The author adopts a middle view on so-called suboptimal structures. On one hand, he provisionally accepts certain suboptimal structures, and adheres to the premise that the evolutionary process makes designs that are, in his words, ‘best guesses’. On the other hand, he realizes, from personal experiences that he elaborates on, that “Designs always have delicate tradeoffs” (p. 231).

Pointedly, Marshall chides evolutionists for their intellectual hubris in their dysteleological arguments. He warns that:

“But human beings must be very careful not to proudly assert that we could ‘obviously do better’. We don’t know that. We do not understand what’s involved in designing an eye because we’ve never built one. (Or, actually, we have, and they’re all inferior.) If you lose your eye, there’s not a single scientist in the world who can build you a new one. Especially not arrogant speculators who try to tell you why the design of the eye is ‘pathetic’. If I were selecting an eye surgeon, I’d look for one who has deep respect for the human eye, not disdain for it. How about you?” (p. 231).

### Defending evolution on dubious grounds

The author is enamored with the ‘shared mistakes’ argument involving human and ape pseudogenes. In doing so, he shows not a hint of understanding of alternative explanations for this fact,<sup>2</sup> or of recent discoveries of functionality among pseudogenes.

Some of the author’s ideas appear to elevate relatively unimportant phenomena into ones of great (imagined) evolutionary significance. For instance, the author brings up rapid speciation. However, this is an example of ‘horizontal’ variation and not the origin of biological novelty. Informed creationists, both before and after Darwin, accepted speciation, so it’s hardly a unique evolutionary insight. Much the same applies to hybridization.

Now consider epigenesis, which is also called neo-Lamarckism, and which involves the parents’ transmission of traits to their descendants outside of the transmission of genes. As an example of epigenesis, Marshall cites the Dutch parents who, having starved during the German occupation in WWII, had children that were smaller in size. However, it is unclear how many different traits can be transmitted through epigenetic processes, and for how many generations this extragenic inheritance can be operative. In addition, if the real issue is not ‘survival of the fittest’ but ‘the arrival of the fittest’, then the exact mode of transmission, from generation to generation, is of little importance. Most important of all, it is unclear if epigenesis plays any significant role (or any role at all) in the supposed spontaneous origin of biological information.

Much of the author’s reasoning does not solve evolutionary problems, but rather begs the question. As a classic example of question-begging, think of the ‘solution’ to origin-of-life problems that posits that life arose on another planet. To say that the origin-of-life mystery is solved by its appearance on another planet begs the question about its origin on *that* planet. In assuming what it needs to demonstrate, it only relocates the problem from Earth to another planet.

Marshall does not bring up the foregoing argument. However, he engages in analogous forms of question-begging and problem-relocation pro-evolutionary arguments. Let us consider some of them.

The author accepts, with not so much as a glimmer of questioning, the serial endosymbiosis theory. According to this theory, for example, the mitochondrion was once a stand-alone cell before it became engulfed by the bacterial cell, and relegated to its present role of a “powerhouse” organelle. However, this raises the question about how even the stand-alone mitochondrion originated.

Now consider gene transfer in bacteria. Marshall claims that this shows how rapidly evolution can occur, as, for example, the emergence of ‘superbugs’ that are resistant to antibiotics. It does not. The capability to resist certain antibiotics is not being created: it is merely being ‘passed around’ from one bacterial cell to another. The author’s contention begs the question about how the resistance to antibiotics originated.

Marshall repeats the argument that the bacterial flagellum is not a compelling example of irreducible complexity, as the bacterium could have imported much of the ‘machinery’ from other bacteria, using processes comparable to horizontal gene transfer. However, this only relocates the problem, and begs the question on the origin of this ‘machinery’ itself.

The author brings up gene duplication as a factor in evolution. However, this begs the question about how the original gene arose in the first place.

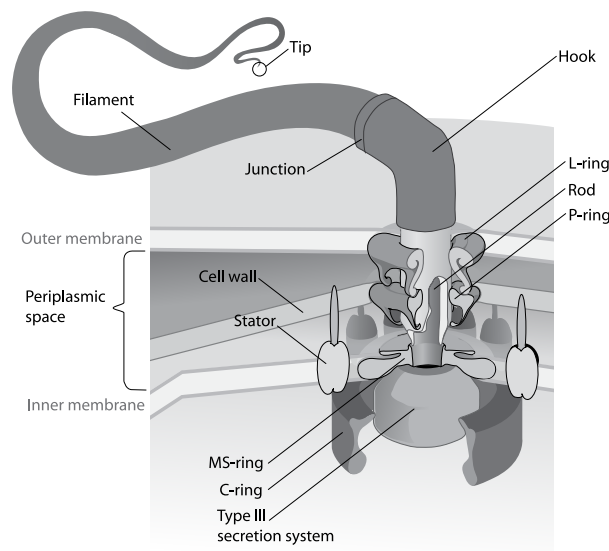


Figure 1. Bacterial flagellum

### What is a mutation?

Marshall appears to think of a mutation as the change of a single nucleotide in the DNA molecule. Labouring under this misconception, the author expresses wonder at genomic changes caused by transposons, gene duplication, etc. Far from being some kind of new or game-changing fact, as Marshall seems to think, these have been known by evolutionists for decades. Nor do they render obsolete the neo-Darwinian synthesis: they merely expand its scope. Finally, they do not solve the central problem of *all* evolutionary theories, which is the origin of novel, functioning biological systems.

### Conflating non-randomness with intentionality

The author’s thinking, while superficially impressive, appears to be a confusion of distinct phenomena. Let us first define some terms to make this clear.

Randomness simply means having an equal probability. For instance, suppose that a bag contains 851

beans, and a person is asked to blindly pick one bean out at random. If his choice is truly random, then each bean has an equal probability of being picked; that is, 1 chance in 851. However, what if the person, unwilling to possibly spill some beans, is disinclined to bury his hand deeply in the bag? Beans near the top of the bag now have a relatively high probability of being chosen, while those near the bottom have almost zero probability of being chosen. His choosing of a bean is now clearly non-random.

To distinguish non-randomness from intentionality, let us consider another scenario. This person (still disinclined to reach for the bottom beans) has a preference for beans that are rough to the touch. His choice is therefore now governed not only by non-randomness but also by intentionality.

As intentionality becomes a sustained behaviour, it grades into teleology. Teleology means a goal-oriented intentionality, an intentionality that has a pre-determined outcome. Let us suppose that this same person picking out the beans is determined to remove as many rough-skinned beans as possible. His choice of beans is not only non-random, and not only governed by intentionality, but is unmistakably teleological in nature.

### The intentionality of evolution?

The author speaks of classical neo-Darwinism thought largely in terms of random mutations. He argues the fact that mutations are non-random. However, this means little, and confuses the issue. It would be better

to think of ‘intentional’ mutations. His confusion is evident by his conflation of the two, as he writes, “Mutations aren’t random; they’re goal directed” (p. 259). How so? One must not confuse outcomes with intentionality, but that is what Marshall appears to be doing.

Let us illustrate the author’s confusion, of outcome and intentionality, by considering gravity. We could say that gravity prevents the earth itself, earth’s objects, and the earth’s atmosphere, from uselessly drifting off into interstellar space. While this is an outcome, it is not intentionality. Gravity has no way of ‘knowing’ that its operation is in any way related to its Earth-preserving effects. Thus there is no way that gravity is acting according to intentionality. In addition, if one does not believe in God, one cannot suppose that gravity came into existence because of someone’s intention of maintaining a functional earth.

Marshall seems to misunderstand retrotransposition as some kind of intentional process which operates according to the needs of the organism. It does not. It merely enhances variability, which allows natural selection to act on a larger set of mutational ‘trials’.

In like manner, Marshall seems to think that accelerated mutation rates are teleological. They are not. They are simply the outcome of environmental stressors acting on the genome. They do not have intentionality, as they have no way of ‘knowing’ that organisms are now facing increasing challenges owing to the stressful environment.

There is no evidence, certainly none supplied by the author, that ‘intentional’ mutations exist. Finally, Marshall demolishes his own argument as he makes the following revealing statement, “Factors we don’t yet understand influence mutation rates of cells, and mutations maximize

the chances of survival” (p. 111). Since, and by his own admission, we do not understand the causes of mutation rates, then most certainly we cannot even begin to suggest that they are intentional in any way—even if they theoretically could be!

### Vitalism making a comeback?

Author Perry Marshall flirts with a teleological conception for the presumed disappearance of legs in the course of whale evolution (figure 1). He suggests that the (alleged) retention of the ability of the whale genome to encode for legs implies either (or both) the fact that the presumed vestigial bones still serve a function, or that

“... the adaptive program was trying to hang on to valuable inventory. It seemed almost ... conservative. As though it knew it might need those legs sometime in the future, and so resisted deleting them” (p. 15).

This is evolutionistic teleology with a vengeance!

The author is reviving century-old discredited ideas. Bergsonism, or vitalism, posits that living things have some kind of ‘drive’, or predetermined ‘plan’, to evolve, and to evolve towards certain pre-specified outcomes. His idea would only make sense if the processes which govern the expression of whale genes had some mysterious way of predicting the descendant-whales’ needs in the distant future, and then had some way of conducting themselves according to these foresights!

### Introduction to coded information

The author utilizes his background in computers to illustrate how codes, and coded information, work. Coded information uses a language called ASCII. In ASCII, the letter ‘A’ is encoded by ‘1000001’. When one

presses the letter ‘A’ in the keyboard, it is encoded as ‘1000001’. The computer then decodes the ‘1000001’, and the letter ‘A’ is displayed on the screen.

In like manner, the DNA contains code. GGG (guanine-guanine-guanine) is not the amino acid glycine. It is encoded information for the ribosomes to *add* glycine at that spot in the encoded protein. Before that, the coded information is encoded into messenger RNA, and then decoded using matching transfer RNA to make the amino acid glycine. In other words, GGG are symbolic instructions to make glycine. In addition, in those parts of the DNA molecule that are not involved in protein synthesis, GGG does not mean glycine, and may mean something different, or even nothing at all.

### Biological encoding and the origin of life

Basing his thinking on his background in computer information systems, notably the role of codes, Marshall is mercilessly critical of evolutionary origin-of-life hypotheses. He writes:

“In this book, I do not even consider the question of what kind of process it might have taken to physically build even a ‘simple’ cell with enough parts to function. All cells have hundreds of thousands of moving parts. I have attempted only to consider the question of how the instructions for the daughter cell got into the DNA, and how the language for those instructions was formed. Answers to even that simple, obvious question proved elusive” (p. 179).

The author then focuses on the specifics of how evolutionistic origin-of-life ideas utterly fail to explain the presumed spontaneous origin of coded information. For example:

“Many books and papers on the Origin of Life only discuss



the assembly of the chemicals themselves. Nothing we know about chemicals tells us where the codes come from” (p. 181).

“A code will only function in the context of an encoder and decoder. Plus, amino acids aren’t code. A string of nucleotides all by itself is not a code. Chemicals all by themselves don’t communicate. No one has ever demonstrated that chemical reactions alone can generate codes . . . . Without code there can be no self-replication. Without self-replication you can’t have reproduction. Without reproduction you can’t have evolution or natural selection” (p. 182).

“Codes are not matter and they’re not energy. Codes don’t come from matter, nor do they come from energy. Codes are information, and information is in a category all by itself” (p. 187).

### The untenable RNA-only biological world

Marshall is unsympathetic to the evolutionist speculation that RNA came first, and that DNA was a later evolutionary add-on. He comments:

“There are problems with the RNA world hypothesis: (1) many scientists believe RNA is too complex to have arisen without the presence of the very same life forms it is believed to have created;

(2) RNA is inherently unstable, so even if it did arise, it wouldn’t last long without a cell to protect it; (3) catalysis of chemical reactions is seldom observed to occur in long RNA sequences only; and (4) the catalytic abilities of RNA are limited. The RNA world hypothesis doesn’t actually solve the chicken-and-egg problem of RNA and proteins: You need RNA to produce proteins, and you need proteins to build the machinery to read the RNA in the first place” (p. 181).

### The Second Law of Thermodynamics

Although Marshall does not mention the Second Law of Thermodynamics by name, he alludes to the fact that it virtually prevents the spontaneous origin of biological information. Pursuing his earlier example of computers further, Marshall adds that

“Nothing we presently know in pure physics or chemistry explains the origin of these cellular engineering capabilities. We don’t know how cells make choices. If the universe booted up the first cell without the action of a designer, then the universe itself must possess directional qualities that nobody yet comprehends. Humans make machines. To date, we’ve never made self-replicating machines.

The closest we’ve come is computer viruses. But what if someone built a computer that reproduced other physical computers? What if someone wrote a computer program that got better and better with time, all by itself? What if Bill Gates started with DOS and we got the latest version of Windows without any human programmer ever having to write a line of code? That would be pretty impressive, wouldn’t it? We all know that human-made machines don’t evolve all by themselves; left to themselves, our cars and computers and PlayStations degrade and crash and break” (p. 151).

The author brings up Stanford computer scientist John Koza, who created programs that design analog circuits, thereby producing something new and valuable from scratch. However, Marshall points out that the program worked only because it imposed a very specific narrow set of constraints, and precise goals, in advance (p. 222). It was therefore a manifestation of design, and hardly a manifestation of quasi-spontaneous useful information originating by itself.

### Dawkins’ Weasel debunked

Arch-atheist Richard Dawkins wrote a computer program that generated random letters. The program was designed to change the letters, each time comparing the result with the goal—the classic phrase, *Methinks It Is a Weasel*. It took 43 iterations for the program to come up with this phrase, letter-perfect. From this, Dawkins has waxed in evolutionistic triumphalism, proclaiming that he has now decisively shown that no intelligent designer is needed for the origin of complex biological systems.

Dawkins’ claim is patently ridiculous. Marshall comments:

“But don’t forget—Dawkins has always insisted that evolution

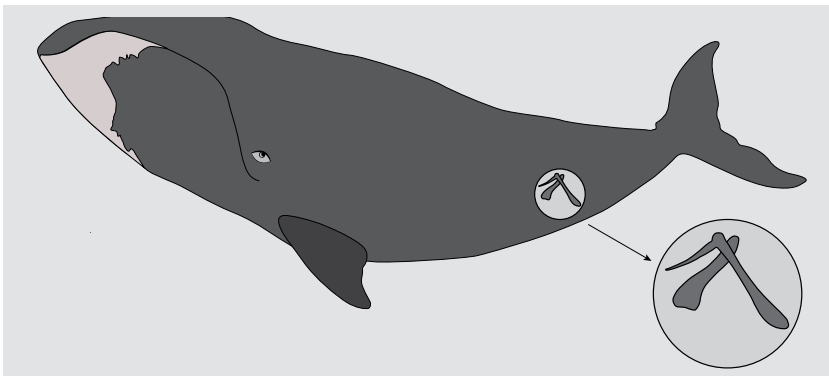


Figure 2. The so-called vestigial leg bones in the whale

is blind and purposeless. His program is anything but blind and purposeless; its goal is precisely defined from the beginning! What Dawkins actually proved with this experiment was: If you want to evolve, you have to start with a goal” (p. 222).

In other words, and ironically, Dawkins is using teleology in order to try to refute teleology!

### Conclusions

Marshall appears to be confused in his thinking. He even comes across as being somewhat mixed up in his thinking. For instance, he believes that evolution is teleological (as in the emergence of biological order) and, simultaneously, non-teleological (as in the case of certain so-called suboptimal structures). In fact, the author seems to misunderstand certain evolutionary processes (e.g. accelerated mutation rates) by endowing them with properties of intentionality that they do not have. The author is indecisive in his admittance of God into the picture.

The author’s tendency is to pick and choose parts of the evolution and creation arguments. His position is nothing new, and is unlikely to impress either camp. Contrary to the promises of the title of this book, it does not even begin to break the deadlock between Darwinism and design.

### References

1. Compare Weinberger, L., Whose god? The theological response to the god-of-the-gaps, *J. Creation* 22(1):120–127, 2008; [creation.com/gaps](http://creation.com/gaps).
2. Woodmorappe, J., Are pseudogenes ‘shared mistakes’ between primate genomes? *J. Creation* 14(2):18–30, 2000.