**Major Evolutionary Blunders: Breaking Dollo's Law**

by Randy J. Guliuzza, P.E., M.D. \*

According to the brilliant conception of the immortal*Charles Darwin*(1809-1882): Evolution—the transformation of organisms—results from the fixation of useful individual variations provoked by the struggle for existence under the influence of *natural selection.* All species—animal or plant—which exist or have existed since the appearance of life on earth, must originate via this fundamental law.1

So began “The Laws of Evolution” published in 1893 by Louis Dollo, curator of Belgium’s Royal Museum of Natural History. Dollo was a renowned Belgian paleontologist who gained his reputation for his work on*Iguanodon* dinosaurs and for the rules he formulated for paleobiology, the study of the biology of fossil life forms.

Interestingly, Harvard University’s eminent paleontologist Stephen Gould contributed to the publishing of *Louis Dollo’s Papers on Paleontology and Evolution* in 1980, a date that coincides with the period of considerable debate about Gould’s punctuated equilibrium mechanism of evolution. Dollo’s first law of evolution was “that evolution occurred by abrupt leaps,”1 which was also one premise of Gould’s mechanism. Dollo actually proposed three laws based on his field observations that have been influential in framing evolutionary research and theory. He is remembered today for his second law, which bears his name.

**Dollo’s Law of Irreversibility**

Dollo stated “that an organism cannot return, even partially, to a previous state already realized in its ancestral series.”1 Today, this is known as Dollo’s law of irreversibility. Accordingly, most evolutionists believe that evolution simply proceeds forward. For organisms with a membrane-bound nucleus, they hold that the operation of natural processes is sufficient to account for the diversity of the organisms’ genes and traits. They believe there is no specific course that evolution is ordained to follow, but once it proceeds, there is essentially no “reverse evolution.”

Paleontological discoveries and theory have not remained static since Dollo formulated his law. The principle of irreversibility has nevertheless been preserved, though interpretations of findings underlying Dollo’s law have changed and the rationale for it has been modified. Those currently believing in irreversibility do not appeal to an abundance of observations. Rather, the belief is justified by the mathematical improbability of a single evolving lineage proceeding and reversing (and re-proceeding) along the same path. Richard Dawkins notes:

“Dollo’s Law” states that evolution is irreversible….Dollo’s Law is really just a statement about the statistical improbability of following exactly the same evolutionary trajectory twice (or, indeed, any*particular* trajectory), in either direction.2

Gould agrees with this understanding. He says:

Thus, for example, Dollo’s law of irreversibility…only restates the general principles of mathematical probability for the specific case of temporal changes based on large numbers of relatively independent components.3

Of course, if re-evolution is prohibited by the exceedingly low probability of a blind process acting on random mutations in this manner, one could ask why such claims wouldn’t also apply to evolution itself.

Does Dollo’s law deserve the status of scientific law, regardless of the rationale currently invoked to support it? Scientific “law” conveys a very high level of confidence that the principle(s) embodied in the law accurately conform to reality. The status of being called a scientific law is obtained after repeated observations and experiments consistently confirm its principles. True laws are so consistent that any violation of them would constitute a miracle. If Dollo’s law is actually repeatedly violated, then that would constitute a major mistake in evolutionary theory. And it would be a blunder that has been reiterated in evolutionary education for decades.

**Dollo’s Blunder: Traits Do Reappear**

If organisms break scientific laws, then it is the law that needs a trial, not the organism. Several researchers have conducted that trial. One evolutionary biologist stated, “Recent phylogenetic studies have revealed several potential examples in which Dollo’s law seems to be violated, where lost structures appear to have been regained over evolutionary time.” He found mandibular teeth in one lineage of frogs that re-appeared after being lost, he believes, for about 220 million years. He claims this “shows that there is no support for the model of irreversible evolution (Dollo’s law).”4

Several 2016 papers deal with evolutionary reversals contrary to Dollo. “Single evolutionary reversals occur when a character changes from an ancestral state to a derived state and then back to the ancestral state within a single lineage,” reports University of Hawaii researchers in a study on a native bird species’ beak length. “Multiple reversals extend the process by returning to the derived or ancestral state several times within a single lineage.” The team documents “three single and two multiple reversals of bill length on six main islands from oldest to youngest, consistent with the phylogeny of the lineage.”5

Two other evolutionists hope to treat drug-resistant malaria through various paths of “reverse evolution” back to a susceptible state. Their frustration with thought-limiting concepts surrounding Dollo’s law spilled over:

The lack of a coherent understanding of reverse evolution is partly due to conceptual ambiguity: the term ‘reverse evolution’ is misleading, as it implies directionality in a process (Darwinian evolution) that is near-sighted and agnostic with regard to goal. This has spawned similarly dubious concepts, such as Dollo’s Law, asserting that evolution is intrinsically irreversible.6

Recently, a study documented “loss and reversals” of a molar tooth crest in a lineage of extinct kangaroos after a time gap believed to be 15 million years.7 How can this happen? “We found that contrary to Dollo’s law in biology, features lost in evolution can re-evolve when evolution ‘tinkers’ with the way features are assembled in the embryo,” reported co-researcher Aidan Couzens of Flinders University.8 The report continues how “the researchers argue that ‘reanimating genetically mothballed features may be “allowed” by evolution when it aligns with pressures that determine an animal’s ecology.’” Other true instances of “reverse evolution” may have been missed previously since “biologists have often discounted the potential for evolution to shift into reverse, dismissing such occurrences as convergent evolution, ‘where similar features evolve independently in organisms that are not closely related.’”8

Scientifically “squishy” invocations of evolution “allowing” or “tinkering with” things, coupled with the mental construct of “convergent evolution” and unquantified “ecological pressures,” place Dollo’s law squarely in the mystical realm surrounding evolutionary explanations. Which explains why anyone doing an Internet survey discovers violations of Dollo’s law, including reversals for wings in stick insects, coiling in snail shells, color vision, eggshells in boid snakes, and many more.

Some scientists, however, criticize findings that question Dollo’s law. They defend Dollo by asserting that their phylogenetic trees are superior to “the moderate level of robustness of many phylogenies” in critical studies.9 One researcher allows some latitude for Dollo’s mistake but not for its continued perpetuation. He implies that Dollo made a valid law but not in the sense of criminal law. Rather, it is actually more akin to tax law in that it is has some “loopholes.” Yet, he asserts that the theoretical work of Dollo’s present defenders may have “devastating flaws” of its own.10

An evolutionary law that is violated constitutes a major evolutionary blunder. Possibly Dollo only made a minor blunder in mislabeling an inference as a law, but his overstated and under-supported conjecture misled research for decades. Also, once striking evidences of “re-evolution” were discovered, repeated salvage efforts like classifying them as merely loopholes hinder scientific progress. For example, since Dollo’s law was one element of evolutionary theory that actually was predictive (i.e., that “re-evolution” would not be observed), when observations showed that the prediction was faulty, pursuing non-evolutionary explanations would be sensible—but has frequently not been done.

**Overlooking Design-Based Explanations**

Perhaps reappearing traits may not be a violation of any law. Nor are they improbability-conquering miracles. This phenomenon is feasibly the outworking of an ingenious design for the purpose of enabling creatures to continually “fill the earth” ([Genesis 1:28](http://www.icr.org/bible/Genesis/1/28)).

One study on owl monkeys correctly notes that if organisms become too specialized to a niche, then this could “lead to a genetic constraint on adaptation if the environment subsequently changes.”11 In other words, specialization could force organisms down an unrecoverable one-way street. How might human engineers address this issue? For some uses, they may design an entity to stay constrained. In contrast, they may also design mechanisms within self-adjusting entities to turn off in order to go one direction and turn back on to reverse direction. That entity could escape a one-way specialization trap—especially if a trap was assured to happen repeatedly. Do organisms display this turn-off/turn-on characteristic?

Researchers found that after the loss of a structure, in many cases “the genetic and developmental architecture to develop such structures continues to be fully present.”12 Couzens also reviewed how reversibility may be variably widespread among organisms:

It has been argued that trait reversibility may be promoted when there is reutilization of conserved developmental pathways…[and] the reutilization of regulatory pathways and constituent genes is widespread in development…and ancestral states are recoverable across a diverse spectrum of metazoan structures.13

So, many organisms do have mechanisms to allow recovery of ancestral states. These mechanisms remain in place, but they can be deactivated for generations and then reactivated and accessed during embryonic development in other generations. What can explain the persistence of this underlying “developmental architecture” that “reanimates genetically mothballed features”?

Evolutionists claim that the information is “conserved.” Conserved is the evolution-speak label tagged to the phenomenon of finding nearly identical traits across many wildly different organisms. Such organisms supposedly “emerged” from unrelated pathways and carried unchanged (i.e., “conserved”) information for the similar trait across evolutionary time—while many other traits were greatly changing. Finding information for similar traits is certainly a factual observation. But believing that they are “conserved” is a declaration based in imagination…and firm convictions that evolution happened. In contrast, if the common trait is found in only a few diverse creatures, evolutionists then imagine “convergent evolution” happened.

There is a less mystical, more straightforward explanation that is consistent with what engineers do. It may be that different creatures are designed to retain specific developmental architecture for the common purpose of reutilizing regulatory pathways to recover ancestral states when the situation for them is suitable. Stable mechanisms that can be reactivated when useful are more consistent with intelligent forethought since “Darwinian evolution…is near-sighted and agnostic with regard to goal.”14 This may be just one of many incredibly complex innate mechanisms that enable organisms to match their traits to dynamic environmental conditions so they can continually fulfill their God-given mandate to be fruitful, multiply, and fill seas, sky, and Earth (Gen 1:22, 28).

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**Major Evolutionary Blunders: Convergent Evolution Is a Seductive Intellectual Swindle**

by Randy J. Guliuzza, P.E., M.D. \*

When it comes to swindles, it would be hard to top Liz Carmichael. She spun a tale about obtaining proprietary secrets from her deceased NASA engineer husband that enabled her to start and become CEO of a totally bogus car company marketing the Dale. This fictitious 84 mpg, three-wheeled car bilked millions from investors in 1975…and all the while Liz was actually a man, Jerry Dean Michael, impeccably dressed like a woman. No investor ever saw the car factory or drove a Dale. Yet, “Liz” always talked with investors so matter-of-factly about “her” wholly imaginary industrial realm that they willingly visualized everything within their hopeful minds, where it took on a vivid life of its own.

An intellectual swindle rivaling this is the wholly imaginary fabrication called *convergent evolution*—the idea that the same traits evolved independently in completely different organisms. Like “Liz’s” investment pitch, evolutionists also write about it so matter-of-factly that it has taken on a genuine life of its own in all their willing minds. Why do they embrace convergent evolution so eagerly? Because it serves as a rescuing device for an important dogma of evolutionary theory. (A rescuing device is a completely fabricated conjecture devised to save someone’s theory from contrary evidence.)

Evolutionary theory holds that physical features shared by different creatures are strong evidence for evolution. To evolutionists, common traits are best explained by their descent from a common ancestor—not by a shared common design. Darwin taught:

All the…difficulties with classification are explained, if I do not greatly deceive myself, on the view that the natural system is founded in descent with modification: that the characters which the naturalists consider as showing true affinity between any two or more species, are those which have been inherited from a common parent…that community of descent is the hidden bond which naturalists have been unconsciously seeking, and not some unknown plan of creation.1

However, this highly revered tenet greatly needs rescuing because so many nonhereditary similarities contradict it. Convergent evolution is the fabricated conjecture evolutionists invoke to explain very similar characteristics between creatures that could not have been inherited from a common ancestor and that evolutionists will never accept as having been produced by an intelligently designed internal programming that is specified for common purposes.

Evolutionary literature often contracts convergent evolution down to its central idea and simply calls it convergence.

**The Basic Notion of Convergence Is Imaginary**

It is tempting to start an evaluation of convergent evolution by identifying all its problems. This is where a word of caution is necessary. Like other key elements of evolutionary theory, convergence is *not* an observable process but is rather “observed” only in someone’s mind as imaginary visualization. Convergence is another evolutionary mystical, mental construct.

We should not naively proceed into matter-of-fact discussions of convergence without questioning the basic premise that such a Darwinian process truly happened. If we don’t question it, we give convergence a life of its own—just like “Liz” got her investors to hand over their money for an imaginary product and thus perpetuated the misleading of other people. It is better to begin by rejecting the idea that convergence accurately explains *any* historical realities and then show that fanciful narratives about convergence amount to *ad hoc*, just-so stories.

**A Magical Story Substitutes for Purposeful Internal Programming**

In *Why Evolution Is True*, Jerry Coyne explains convergence by describing two similar-looking but unrelated cacti: “I have both types growing on my windowsill, and visitors can’t tell them apart without reading their tags.”2 He knows that common ancestry cannot explain their similarity, so he focuses on eliminating the explanation that their shared traits result from designed internal programming for common purposes. Switching from science to theology, Coyne asks:

Why would a creator put plants that are fundamentally different, but look so similar, in diverse areas of the world that seem ecologically identical? Wouldn’t it make more sense to put the same species of plants in areas with the same type of soil and climate?2

By answering his own question with a “I wouldn’t do it that way” reply, Coyne dismisses any consideration of design—a classic evolutionary tactic. He thus dodges thoughtful discussion of possible design-based explanations.

Coyne also substitutes what he believes is a “well-known”—i.e., matter-of-fact—scientific alternative in lieu of designed internal programming. Yet, he merely invokes a simple magical story that is not based on fact but only exists in his mind.

Again one must ask: If animals were specially created, why would the creator produce on different continents fundamentally different animals that nevertheless look and act so much alike?...No creationist, whether of the Noah’s Ark variety or otherwise, has offered a credible explanation for why different types of animals have similar forms in different places. All they can do is invoke the inscrutable whims of the creator. But evolution *does* explain the pattern by invoking a well-known process called *convergent* *evolution*. It’s really quite simple. Species that live in similar habitats will experience similar selection pressures from their environment, so they may evolve similar adaptations, or converge, coming to look and behave very much alike even though they are unrelated.2

Another evolutionary authority, the late Ernst Mayr of Harvard, claimed convergence illustrates how evolution functions as a substitute “engineer”: “Convergence illustrates beautifully how selection is able to make use of the intrinsic variability of organisms to engineer adapted types for almost any kind of environmental niche.”3 Evolution is thus the “intrinsic variability,” or a creature’s normal heterozygosity, coupled with the natural process of struggling to live that fractionates the diverse alleles into various populations.

**Casually Invoking Convergent Evolution Everywhere**

Evolutionary literature projects engineering prowess and God-like volition onto unconscious nature and weaves an active nature-agent into its narratives.4 This helps the incredible accomplishments claimed for evolution appear more believable. Ascribing the ability for nature to repeatedly “converge” on the same trait in very diverse organisms—sometimes separated by many millions of years, even to identical genes—gives convergent evolution a seemingly omnipotent capability.

For evolutionists, convergence’s supreme power is both implicit and pervasive. A belief expressed in a study published in Nature “hints that evolution may be finding the same genetic solutions to a problem more often than previously thought” and “that convergent molecular evolution is much more widespread than previously recognized.”5

The litany of incredibly complicated biological traits to which convergent evolution is casually appended as the explanation is enormous. A few examples from evolutionary literature will highlight some of the capabilities ascribed to convergence.

For instance, the power of convergence is projected in extinct wildebeest-like mammals that had trumpet-like nasal passages remarkably like the nasal crests of hadrosaur dinosaurs—even though both were allegedly separated by millions of years. By casually explaining this anatomical similarity by convergence, evolutionists morph it into wondrous evidence for evolution.

The fossil record provides tangible, historical evidence for the mode and operation of evolution across deep time. Striking patterns of convergence are some of the strongest examples of these operations, whereby, over time, similar environmental and/or behavioral pressures precipitate similarity in form and function between disparately related taxa.6

The precision of convergence is seen in finding out that 59 swimming or flying animal species ranging from mollusks to insects, birds, bats, whales, and fish all use the same fluid motion mechanics. The tips of their wings, fins, etc. all bend at essentially the same point and flex 26 degrees. The research team pondered, “What factor(s) drive natural selection to converge on highly constrained bending kinematics across such a wide range of animal groups?”7 They speculated that nature molded these diverse organisms as it drove them independently through time in the quest for energy efficiency.

The scope of convergence is seen in multitudes of organisms evolving eyes. Evolutionists claim that similar environments constrained creatures to converge on comparably complex eyes—independently at least 40 times, and probably as many as 65 times.8

But even if claims of Darwinian convergence were not *ad hoc*stories, the concept still has serious problems.

**Problem 1: Imagining Coincidence upon Coincidence**

Developmental biologist Sean Carroll reports that a similar gene, *Pax-6*, “has been found to be associated with eye formation in animals with all sorts of eyes.” Convergence is normally the explanation of choice for these similarities. But Carroll rejects convergence as implausible since that account simply invokes “a remarkable coincidence in that the*Pax-6*gene was called upon repeatedly to build eyes from scratch in these different groups of animals.”9 Instead of convergence, he embraces another imaginary account that is equally implausible. He believes these genes were remarkably “conserved” unchanged for 600 million years in organisms as diverse as flies and elephants—while other genes became so intensely mutated they caused the evolution of flies and elephants.

Carroll’s “remarkable coincidence” is exceedingly restrained. Similarities of marsupial and placental mammals are presented as another showpiece of convergence. Evolutionists believe that on Australia and the Americas, nearly identical environmental conditions—drought, flood, heat wave, Ice Age, famine, disease, food types, predators—were occurring over vast ages in nearly identical intensity, timing, sequence, and other factors to mold not just*a gene*but whole suites of physiological and anatomical features to coincidently arrive at remarkably similar body types for dogs, wolves, cats, anteaters, moles, mice, Coyne’s cacti, etc. Two intelligent design researchers sum up, “Without some form of design or teleological guidance, convergent evolution requires a piling of coincidences upon coincidences that strains credulity.”10

**Problem 2: Convergent Evolution versus Darwin’s “Community of Descent”**

Every occasion in which evolutionists must invoke convergence argues against similar features being strong evidence for evolution. When looking at similar features, which evolutionary explanation is legitimate—convergence or common descent? Or should both be taken as imaginary scenarios? Consider a report on unexpected genetic similarities for genes enabling echolocation in whales and bats.

The discovery represents an unprecedented example of adaptive sequence convergence between two highly divergent groups….[Study author Stephen Rossiter said,] “It is generally assumed that most of these so-called convergent traits have arisen by different genes or different mutations. Our study shows that a complex trait—echolocation—has in fact evolved by identical genetic changes in bats and dolphins….We were surprised by…the sheer number of convergent changes in the coding DNA.”11

The same report stated:

If you draw a phylogenetic [relationship] tree of bats, whales, and a few other mammals based on similarities in the prestin [a hearing gene] sequence alone, the echolocating bats and whales come out together rather than with their rightful evolutionary cousins.11

Addressing this specific contradiction, Lee Spetner perceptively observes:

Convergent evolution is…an invention. It was invented solely to avoid addressing the failure of the phylogenetic tree to support Common Descent. There is no theoretical support for convergence, and whatever evidence has been given for it is the product of a circular argument.12

The blunder of evolutionary theory is that similar features are evidence for evolution…except when they aren’t.

**Problem 3: Convergent Evolution Was “Stunningly” Wrong**

What about the teaching of 40 independent evolutionary developments of various eyes? That manifested into another incredible evolutionary blunder. “This view was entirely incorrect,” Sean Carroll notes after citing genes called *Hox genes* that control eye development in sighted creatures. “The late Stephen Jay Gould…saw the discovery of Hox clusters…as overturning a major view of the Modern Synthesis [natural selection fractioning out genetic variability].” Carroll candidly continues, “Natural selection has not forged many eyes completely from scratch; there is a common genetic ingredient to making each eye type, as well as to the many types of appendages, hearts, etc.”13

**A Better Organism-Focused, Design-Based Explanation**

The general evolutionary view—that nature acts as an exercising agency to mold passive organisms into unlimited forms over time as they are docilely driven by environmental challenges called *selective pressures*—is bankrupt. No scientific paper has ever quantified a “selective pressure.” “Converged,” “conserved,” or other evolutionary words that project volition onto nature serve as rescuing devices. Convergence is not an observation demonstrated to flow from objectively discernible causes but is a declaration based on mental pictures—a metaphysical conjecture that substitutes for a total absence of explanation.

However, creationists have long explained similar traits in very diverse creatures as functioning toward similar purposes. They expected to find shared genetic programming to guide the traits’ development, an expectation confirmed in Hox genes, gene networks, and other mechanisms.14

In a recent rebuff to convergence, ICR geneticist Dr. Jeffrey Tomkins discussed how pythons and boas can each express—evidently quite quickly—some highly similar yet environmentally specific traits that enable them to fit and fill different niches.15

These findings tend to confirm design-based creationist theory that emphasizes active, problem-solving organisms that are capable of extraordinary self-adjustments to fill dynamic environments. Future research will likely confirm more details of how creatures can detect signals during development (and also afterward) and make self-adjustments to their own traits per internal algorithms. Sensors, algorithms, and other internal system elements enable them to actively and continuously track environmental changes—not be passively driven and molded by them.

Such extreme bioengineering magnifies the profound wisdom of nature’s true creative Agent, the Lord Jesus Christ (Ps 104:24).

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**Major Evolutionary Blunders: Evolutionists Strike Out with Imaginary Junk DNA, Part 1**

by Randy J. Guliuzza, P.E., M.D. \*

The suspense is palpable as fans watch baseball slugger Casey at the plate primed to wallop a game-winning home run. “And now the pitcher holds the ball, and now he lets it go, and now the air is shattered by the force of Casey’s blow.” But the blow turns out to be a massive swing-and-a-miss for Casey—a total whiff—so “there is no joy in Mudville—mighty Casey has struck out.”1 Ernest Thayer’s legendary 1888 baseball poem conveys the message of how overblown expectations, bolstered by smug overconfidence, can be dashed when the actual performance results in an enormous swing-and-a-miss.

Just like the mighty but futile force of “Casey’s blow,” evolutionary literature gloated for over three decades about evidence evolutionists believed was a powerful confirmation of evolution. Their “proof” was the discovery that a large percentage of DNA they called *junk* *DNA* does not code for proteins. Since evolutionists believe that over long ages organisms (and their DNA) are crafted by chaotic environments in which they struggle to survive, evolutionists expect to see in evolution’s wake many different types of  “useless” genetic junk. They were so certain that most non-coding genetic material was junk DNA, some said its only functional ability was embarrassing creationists.

Yet, joyless Mudville was let down by Casey, and recently there has been less joy in Evolutionville as the expectations of junk DNA have been exposed as overblown. Thoughtful research confirmed function for much of the diverse types of DNA mislabeled as junk. Scientific evidence showed the widely touted “junk DNA” argument, which evolutionists anticipated being a Darwinian home run, is really a blundering swing-and-a-miss—another total whiff—for their theory.

**Evolutionary Theory Expects to Find Genetic Junk in Organisms**

Evolutionary proponents have had many whiffs. Recall the case of Haeckel’s embryos, which were touted as reflecting the stages of organisms’ evolutionary past. Biochemist Michael Behe noted, “The story of the embryos is an object lesson in seeing what you want to see.”2

And regarding the Piltdown Man hoax, biology philosopher Jane Maienschein recounted “how easily susceptible researchers can be manipulated into believing that they have actually found just what they had been looking for.”3 These episodes and others show that rather than being established by observation and experiment, major evidences for evolution have historically only needed to be phenomena that could be envisioned within evolutionary scenarios. Thus, finding DNA that does not code for protein, or looks like genetic wreckage, or appears as a hodgepodge of non-functional genetic repeats, etc., matches the chaotic genetic history of life on Earth that an evolutionary theorist is expecting to “see” in DNA.

This evolutionary “sight” affects all levels of scientific interpretation. Scientists whose analysis is constrained to fit evolutionary theory will not see a brain, a digestive system, and other complicated biological phenomena as designed things but rather as conglomerations of parts cobbled together by nature. “We’re all here because of mutations,” claims molecular neuroscience professor Jernej Ule, who adds:

But most random mutations actually disrupt the functions of our genes and so are a common source of genetic diseases….How does nature resolve this conflict?...We’ve known for decades that evolution needs to tinker with genetic elements so they can accumulate mutations while minimising [*sic*] disruption to the fitness of a species.4

How can Ule so easily embrace such counterintuitive thinking? By using a mental rescuing device. In his case this is his belief that a simple appeal to nature is a sufficient stand-alone cause to explain phenomena that in any field other than biology it would require the actions of an intelligent agent. Ule conceives of nature as being like an omnipotent agent capable of “resolving conflict” and “tinkering” with organisms over time. Nature, just like a potter, thus fashions creatures as if they were modeling clay.

This belief is widespread because most research programs in Ule’s field of evolutionary biology are shaped by a very influential concept synopsized in Nobel laureate Francois Jacob’s 1977 paper “Evolution and Tinkering.”5 Nature was described as a mindless tinkerer that drove the evolutionary process in fits and starts, down dead ends, in U-turns and other meandering paths throughout Earth’s history. Evolutionists believe that numerous “mistakes” and “junk” in living things confirm that nature started with a primitive cell and shaped it into all of life’s diverse forms. For them, the perceived struggle to survive explains why biology has both junk and incredibly complicated molecular machines that look like they were designed for a purpose—but really weren’t.

The distinguished biochemical researcher Walter Neupert explains how he and most biologists project God-like powers onto Mother Nature to mentally reconcile the counterintuitive notion that no designer was necessary for living things that look remarkably designed:

The vast majority of biologists believe that these ‘machines’ are not made by optimizing a design. Rather, we are convinced that they are the products of aeons of evolutionary processes. Francois Jacob made this clear almost 30 years ago: nature is not an engineer; she is a tinkerer (Jacob, 1977). Molecular machines, although it often may seem so, are not made with a blueprint at hand….There are no blueprints; the workshop of the tinkerer is a collection of millions of bits and pieces that are combined, and odds and ends are used over and over again to yield something that works better.6

A more recent scientific article presented a model for a natural origin of microscopic biological machines. Just like Neupert, the evolutionist authors project God-like creative powers onto nature as a whimsical tinkerer: “This model agrees with Jacob’s proposition of evolution as a ‘tinkerer,’ building new machines from salvaged parts.”7 If readers are attuned to it, they will find that evolutionary literature commonly invokes the personification of nature exercising agency through evolution as a substitute for God’s intelligent agency. Junk DNA fits perfectly with the evolutionary expectation of biology being messy rather than neatly engineered—and in their minds, evolutionists could “see” junk all over the genome.

**Is Junk DNA Strong Evidence for Evolution and against Creation?**

The concept of junk DNA began in the early 1970s when genetic researchers made the curious finding that over 95% of DNA does not code for proteins. Some DNA is characterized in perplexing ways such as long strings of repeated code that almost seemed like gibberish. Evolutionary researchers believed they were observing genetic fossils and other genetic wreckage left over from nature’s tinkering. In reports that were uncharacteristic of good science, many investigators hastily labeled the huge segment of DNA with yet-unknown functions as “junk,” beginning with geneticist Susumu Ohno who explained:

More than 90% degeneracy contained within our genome should be kept in mind when we consider evolutional changes in genome sizes. What is the reason behind this degeneracy?...The earth is strewn with fossil remains of extinct species; is it a wonder that our genome too is filled with the remains of extinct genes?...Triumphs as well as failures of nature’s past experiments appear to be contained in our genome.8

Evolutionary authority Jerry Coyne made a post-hoc prediction in 2009 that evolutionists would expect to find DNA in genomes along the lines of Ohno’s “junk,” and “the evolutionary prediction…has been fulfilled amply.” He noted, “Now that we can read DNA sequences directly, we find…in [species] genomes is inscribed much of their evolutionary history, including the wrecks of genes that were once useful.”9

Junk DNA flourished in evolutionary literature as valid proof of evolution. Evolutionary spokesmen like Ernst Mayr and Richard Dawkins appealed to it. Dawkins claimed that “[pseudogenes] are genes that once did something useful but have now been sidelined and are never transcribed or translated….What pseudogenes are useful for is embarrassing creationists…[since it] is a remarkable fact that the greater part (95% in the case of humans) of the genome might as well not be there, for all the difference it makes.”10

On one side of the coin, the supposed existence of junk DNA is used as evidence for its evolutionary origin. But as Dawkins implies, on the other side of the coin evolutionists see it as a strong argument against DNA being intelligently designed. Popular science historian Michael Shermer contrasted these two explanations for DNA’s origin. “Rather than being intelligently designed,” he said, “the human genome looks more and more like a mosaic of mutations, fragmented copies, borrowed sequences, and discarded strings of DNA that were jerry-built over millions of years of evolution.”11 Shermer’s comments were consistent with what the evolutionary community was publishing about other genetic research.

In 2001, when the first drafts of the Human Genome Project were published, results were interpreted by some who saw so much “junk” that to them the reality of evolution became a mental certainty.

They identified thousands of segments that had the hallmarks of dead genes. They found transposable elements by the millions. The Human Genome Project team declared that our DNA consisted of isolated oases of protein-coding genes surrounded by “vast expanses of unpopulated desert where only noncoding ‘junk’ DNA can be found.” Junk DNA had started out as a theoretical argument, but now the messiness of our evolution was laid bare for all to see.12

**Collins Fits Junk DNA into Theistic Evolution**

Geneticist Francis Collins was the Director of the Human Genome Project and currently is Director of the National Institutes of Health. Unsurprisingly, he once endorsed the concept of junk DNA. What did surprise many was the degree to which Collins publicly identified his work as fully compatible with belief in God’s creative agency. He was instrumental in founding the organization BioLogos to promote evolutionary creationism. BioLogos credits the diversity of life on Earth to “the God-ordained process of evolution”13—i.e., theistic evolution, in which natural or created heterozygosity (genetic diversity) is fractionated out by natural processes. Citing junk DNA as evidence for evolution, Collins said:

Even more compelling evidence for a common ancestor comes from the study of what are known as ancient repetitive elements (AREs)....Mammalian genomes are littered with such AREs, with roughly 45% of the human genome made up of such genetic flotsam and jetsam.14

Within the same context, he mocked creationists who claimed from an investigative standpoint that the “junk DNA” label was premature: “Of course, some might argue that these are actually functional elements placed there by a Creator for a good reason, and our discounting them as ‘junk DNA’ just betrays our current level of ignorance.”14

Creationists at the time were adamant that experiments had not ruled out a functional role for this DNA. They disagreed that it should be classified as junk given the normal understanding of the word. Bypassing decades of potential research on this DNA, evolutionary authorities simply declared it “junk.” In fact, two leading researchers had already concluded by 1980 that “the conviction has been growing that much of this extra DNA is ‘junk,’” unlikely to have any function and “that it would be folly in such cases to hunt obsessively for one.”15 Consistent with Darwin’s look-imagine-see approach to science,16 it was natural for evolutionary researchers to clearly envision DNA of unknown function as junk given their firm evolutionary beliefs.

However, at the time when junk DNA was being declared as factual evidence for evolution and against creation, there were already published scientific reports on some “junk” DNA that documented its important functions. Next month’s Major Evolutionary Blunders article will show that ignoring these findings was akin to the hubris the slugger Casey flaunted just before his embarrassing total whiff of the pitch.

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# Major Evolutionary Blunders: Evolutionists Strike Out with Imaginary Junk DNA, Part 2

## by Randy J. Guliuzza, P.E., M.D. \*

“Casey at the Bat” is one of America’s best-known poems. Surprisingly, even operas have dramatized the story of Mudville Nine’s baseball slugger. In Ernest Thayer’s 1888 poem, a smugly overconfident Casey was ready to wallop a game-winning home run, only to dash the hopes of Mudville by totally whiffing the ball with a massive—and embarrassing—swing-and-a-miss.

Last month’s article outlined a similar situation for evolutionists.1 For three decades, they overconfidently declared that the messiness of “junk DNA” confirms how nature exercises creative agency over organisms through evolutionary tinkering. These supposedly useless non-coding bits of genetic sequence were flaunted as leftovers of the evolutionary process. Now we’ll see how the true facts about DNA are like a fastball blowing by evolutionists and exposing their overblown claim as a blundering swing-and-a-miss.

**Junk DNA Claims Are Stunningly Wrong**

Akin to how evolutionists visualized evolutionary characteristics to validate Piltdown Man and vestigial appendixes—characteristics that research has shown only existed in their minds2—creationists maintain that hastily labeling any DNA as “junk” is another misguided flight of imagination. In 2006, Human Genome Project Director Francis Collins offered a coy taunt against that view:

Of course, some might argue that these [“junk DNA” sequences] are actually functional elements placed there by a Creator for a good reason, and our discounting them as “junk DNA” just betrays our current level of ignorance.3

His statement proved ironically predictive. By 2015, Collins admitted that a level of ignorance had indeed betrayed the consensus of evolutionists. Numerous discoveries showed functions for DNA once discounted as junk. One science reporter noted:

In January [2015], Francis Collins, the director of the National Institutes of Health, made a comment that revealed just how far the consensus has moved. At a health care conference in San Francisco, an audience member asked him about junk DNA. “We don’t use that term anymore,” Collins replied. “It was pretty much a case of hubris to imagine that we could dispense with any part of the genome—as if we knew enough to say it wasn’t functional.” Most of the DNA that scientists once thought was just taking up space in the genome, Collins said, “turns out to be doing stuff.”4

Reviewing online reports from 1994 until today reveals how espousing notions of junk DNA is simply ill-informed. These carry titles such as “Hidden Treasures in Junk DNA”; “‘Junk RNA’ molecule found to play key role in cellular response to stress”; “Not ‘junk’ anymore: Obscure DNA has key role in stroke damage”; “‘Junk’ All That Separates Humans From Chimps”; “The Unseen Genome: Gems among the Junk”; “Live Chat: New Treasures in the Genome”; “Far From ‘Junk,’ DNA Dark Matter Proves Crucial to Health”; “Breakthrough study overturns theory of ‘junk DNA’ in genome.”

Thus, for scientists motivated to cure disease, searching DNA for jewels among the “junk” is valuable. Recently, “researchers have shown that when parts of a genome known as enhancers are missing, the heart works abnormally, a finding that bolsters the importance of DNA segments once considered ‘junk’ because they do not code for specific proteins.”5 And an MIT report noted that “several years ago, biologists discovered a new type of genetic material known as long noncoding RNA…[in] sections of the genome once believed to be ‘junk DNA.’ Now, in a related study, biologists have discovered how an enigmatic type of RNA helps to control cell fate.”6

Once again, research has uncovered newly demonstrated function for biological objects that evolutionists simply declared to be nonfunctional—as if a lack of knowledge of functionality somehow equated to basic evidence that established non-functionality.

**Are Tandem Repeats and Pseudogenes Really Junk?**

Several reports by ICR geneticist Jeffrey Tomkins cataloged functions for DNA that was considered junk. In regard to repetitive DNA called tandem repeats (TRs), Tomkins explained:

Because human reasoning essentially views the repetition of words in spoken languages as errors, these DNA sequences were first written off as meaningless junk….Now it appears nothing could be further from the truth since these repetitive words are linked with pervasive biochemical function.7

Tomkins reported on one group of researchers that approached TRs supposing they actually had a purpose. They concluded, “Our results suggest that there are potentially thousands of TR variants in the human genome that exert functional effects via alterations of local gene expression or epigenetics.”8

Evolutionists have touted pseudogenes—supposedly non-functional vestiges of currently functional genes—as junk. Tomkins wrote:

Pseudogenes were once thought to be genomic fossils—the broken remnants of genes that mutated long ago. However, research is progressively showing that many pseudogenes are highly functional and critical to life. Now, a newly characterized pseudogene has been shown to produce a functional protein, but only in cells where it is required—leading researchers to coin a new term pseudo-pseudogene.9

Tomkins described how the concept of pseudogenes “was based on an over-simplistic view and a lack of advanced information about the complexity of protein production” and “how looking at the genome as a product of evolution hinders scientific discovery.”9

One massive research project, dubbed ENCODE, examined non-coding DNA for function. Discoveries published in 2012 identified biochemical functions for about 80% of the genome. Tomkins summed up:

Results from 30 simultaneously published high-profile research papers [proclaim] that the human genome is irreducibly complex and intelligently designed. From an evolutionary perspective, this is yet another massive blow to the myth of “Junk DNA.” This evolutionary idea was exposed as a fraud from a scientific perspective in Jonathan Well’s recent book The Myth of Junk DNA.10

Further, Tomkins noted, “And what about the remaining 20% of the genome—is it functional too?” It’s probably not worthless either. Tomkins added that the lead analysis coordinator commented, “It’s likely that 80% will go to 100%….We don’t really have any large chunks of redundant DNA. This metaphor of junk isn’t that useful.”11

**Rage and Bullying for a Hopeless Cause**

Science reporter Carl Zimmer described one scientist’s professional reaction to the idea that junk DNA is an invalid concept:

When the N.I.H.’s [National Institutes of Health] official Twitter account relayed Collins’s claim about not using the term “junk DNA” anymore, Michael Eisen, a professor at the University of California, Berkeley, tweeted back with a profanity.12

The rising tide of public denunciations of the concept of junk DNA by scientists evoked some high-profile anger from a few evolutionary biologists, notably Dan Graur of the University of Houston in Texas, T. Ryan Gregory from the University of Guelph in Ontario, Larry Moran at the University of Toronto, and some others. Zimmer added, “To these biologists, a fully efficient genome would be inconsistent with the arbitrariness of our genesis….Where some look at all those billions of bases and see a finely tuned machine, others, like Gregory, see a disorganized, glorious mess.”12

Biology declared to be a “glorious mess”—and not neatly designed—is cherished evidence for those who embrace deadly struggles as the fuel for biological change.

Graur understood the negative implications for evolutionary theory if people learned that the idea of junk DNA was an evolutionary swing-and-a-miss. So, he published harsh public attacks against ENCODE research teams in peer-reviewed evolutionary literature. In one paper meant to shame ENCODE researchers into recanting the conclusion that most of the genome had function, he declared:

This absurd conclusion was reached through various means, chiefly by employing the seldom used “causal role” definition of biological function…by committing a logical fallacy…[and] by failing to appreciate the crucial difference between “junk DNA” and “garbage DNA.”13

Some interpreted his attacks as nitpicking over the definition of “function” and quibbling about his arbitrary DNA “junkiness” scale.

“In the social-media age, scientific disagreements can quickly become public—and vitriolic,” the science journal Naturereported regarding ENCODE’s new “framework for quantifying the functional parts of the human genome,” which clarified their finding “that 80% of the genome is biochemically functional”…and they narrated Graur’s abruptly hostile reaction.14 He “weighed in on this latest report,” saying:

ENCODE’s “stupid claims” from 2012 have finally come to back to [sic] “bite them in the proverbial junk”….Through it all, he admittedly showed very little tact. “I believe science is a search for the truth, not a lesson in manners,” he says. “I don’t do politeness.”14

By nature, thugs “don’t do politeness” by either slashing tires or trashing reputations when enforcing their notion of conformity. Graur-like Darwinists know that research teams often need years to discover the function of one segment of “junk DNA.” Since enormous amounts still need careful study, they can use the rest of their lives to coercively defend junk DNA by browbeating others to withdraw conclusions. However, the trend in discovering new functions is decidedly against junk DNA, so they are strong-arming others for a lost cause.

**Defend Junk DNA or Risk Supporting Creationists**

Zimmer disclosed why Graur and Gregory unleash attacks:

It’s no coincidence, researchers like Gregory argue, that bona fide creationists have used recent changes in the thinking about junk DNA to try to turn back the clock to the days before Darwin…whose 1859 book, “On the Origin of Species,” set the course for our understanding natural selection as a natural “designer.”15

Revealing a metaphysical bias, peer-reviewed evolutionary science journals sounded alarms. One published book review savaged the works of two other evolutionists who criticized junk DNA. It warned that “they will also certainly provide ammunition for intelligent design proponents and other creationists. The debunking of junk DNA and the quest to find function for the whole of the human genome have constituted major focus points for such groups in their crusade against evolution.”16

Graur takes another swipe at ENCODE by reminding Darwinists to respect their theory’s highest purpose:

We urge biologists not be afraid of junk DNA. The only people that should be afraid are those claiming that natural processes are insufficient to explain life and that evolutionary theory should be supplemented or supplanted by an intelligent designer….ENCODE’s take-home message that everything has a function implies purpose, and purpose is the only thing that evolution cannot provide.17

Scientific thuggery aims to intimidate colleagues into silence or bully others into shading their conclusions to not supply “ammunition” against evolution.

**Christ’s Creative Agency Confirmed**

The fact is, evolutionists’ definitive declarations that certain enigmatic DNA sequence was junk were spectacularly wrong. Speaking in Scientific American, Australian geneticist John Mattick concurred:

I think this will come to be a classic story of orthodoxy derailing objective analysis of the facts, in this case for a quarter of a century….The failure to recognize the full implications of this [important parallel information derived from non-coding DNA] may well go down as one of the biggest mistakes in the history of molecular biology.18

Junk DNA has been exposed as another evolutionary whiff—an embarrassing, science-obstructing swing-and-a-miss.

Notwithstanding reality, Graur-like evolutionists remain hopeful about smashing a home run for Darwin by swinging away in their labs straining to find a junky genome…but that target just gets harder to hit. Scientific American forecasts these efforts as vain: “No one knows yet just what the big picture of genetics will look like once this hidden layer of information is made visible. ‘Indeed, what was damned as junk because it was not understood may, in fact, turn out to be the very basis of human complexity,’ Mattick suggests.”18

Junk DNA amounts to one inning in a bigger contest between two irreconcilable beliefs. One holds that the Lord Jesus Christ exercised creative agency over creatures whose intricate craftsmanship reveals His infinite wisdom and power. The second is a glory-robbing notion that nature exercises agency over organisms through evolutionary tinkering.

Indeed, the known treasures of DNA—and those yet to be discovered—all showcase the Lord Jesus’ endless engineering greatness, as implied by ENCODE’s continuing search for genetic functions:

Yet with thousands of cell types to test and a growing set of tools with which to test them, the project could unfold endlessly. “We’re far from finished,” says geneticist Rick Myers of the HudsonAlpha Institute for Biotechnology in Huntsville, Alabama. “You might argue that this could go on forever.”19

For those with open hearts, the thrill of endless scientific discovery arouses justifiable awe of the Lord’s profound mind. “O LORD, how great are Your works! Your thoughts are very deep. A senseless man does not know, nor does a fool understand this” (Ps 92:5-6).

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