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An Economist's Rational Road to Christ

- Something created us
- Created things have a purpose
- The New Testament's prescriptions and story is consistent with human flourishing as if our creator wrote it
- 'As if' assumptions are often true

Bertrand Russell (1872-1970) was an eminent philosopher, mathematician, and logician, and avowed atheist. In his *History of Western Philosophy*, he discusses many arguments for the existence of God—first cause, natural law—and finds them all logically defective, except the argument from design. This is the argument that there are things in the known world which cannot plausibly be explained as the product of blind natural forces, but are reasonably regarded as evidences of a purpose. He notes there is no formal logical defect, and the veracity of this hypothesis turns on 'comparatively detailed considerations.' He found the theory of evolution adequate to rebut the argument from design, but a lot has been discovered since then. ¹

If you share Russell's intellectual interests the theory of evolution is the most important argument for the existence of god. That could be any god, however. The New Testament is a statement that claims to be the word of God, and also reads like an instruction manual by our creator in terms of its helpfulness in this world, consistency with healthful psychology, ethics, and economics. For these reasons, plus the belief in a creator, I find faith in Christ a highly rational decision.

The Creator Argument

My path from secular humanism, to deism, to Christianity was uncommon—most deists become Buddhists—and so I think that I am filling a void with this thesis, in that I have not read a paper that describes an intellectual path to Christ. I used to be an avid reader of atheist literature that described how nature, and humans in particular, came about, and how we can know pretty much how the physical universe not just works, but started. Then I read a copy of Michael Behe's 1996 book, *Darwin's Black Box*.

The cell is not simply complicated, but it has a *specific* complexity, chemically active parts arranged in a particular way. If you switch large chunks of an unspecified complex system, such as a turbulent water flow or a crystal, it still works the same for all practical purposes. If you switch chapters in a novel, sub-routines in a computer program, or one stretch of DNA with another, the outcome is catastrophic failure. The essence of a large complex unspecified system can be summarized concisely, as in the recursive nature of crystals and Mandelbrot sets; a

complex specific system is like a computer program; it cannot be abbreviated much and work. The theory of evolution is defined generally as the idea that all life results from random mutations at the molecular level that were filtered through a reproductive sieve acting at the level of the phenotype, the organism as a whole. You need not just variation across generations, but mutations: natural selection only culls from existing types within a population.

As someone who can write computer code, I know the mutation-with-selection method would never work on computer programs; mutations simply have a success rate too low to be the essence of any development of significantly novel functionality, regardless of how many selection sieves I forced them through. How this process work in an organism's DNA, which is considerably more complicated than a computer program? I was not persuaded by the hypothesis of a personal God, but was eager to learn how evolutionists responded to this argument. Over the next decade, I read more and noted that the intelligent design argument was winning.

The evolutionists—I refer here mainly to biology PhDs who write about evolution and should know better—make bad analogies, engage in a good deal of hand waving, and most importantly, do not emphasize actual probabilities for functional mutations. Interestingly, they are also increasingly angry. If you search an evolutionary website, there is a strong tone of contempt for the ID community, and an adolescent amount of name-calling and vulgarity for a group of academics.² Richard Dawkins is the champion expositor of evolution, and loves to criticize ID, but does not debate the many scientists actually working in the field who have good-faith arguments. Instead, he only debates scientifically illiterate preachers. These are not symptoms of confidence.

I find the biological argument for creation most compelling. Cosmological arguments are quite interesting, as the physical constants of the universe have to be very precise, many with ridiculously fine tolerances, including the extreme 'cosmological constant' that has a tolerance of 1 in 10^{120} .³ However, with such arguments, one can always fall back on the anthropic argument: if the constants of universal laws were not consistent with life, we would not be here, and given that the multiverse contains 10^{500} + universes (or, the many worlds theory), this is probable. Alternatively, life could take some other form based on the physics of other universes, and we just do not know what those physical laws or life forms are like. I find such an idea hardly less fantastic or testable than positing an intelligent designer of our universe, yet many thoughtful people find the multiverse theory and anthropic argument for fine-tuning of the universe rational, a belief in a personal God irrational. The key advantage of biological complexity is that it is not explained via the anthropic argument, as we see thousands of molecular machines not necessary for our existence; there is no contingency that makes the improbable life-cycle of a butterfly likely given we exist to see it.

Evolution can explain some things, but it cannot explain, for instance, how a bear evolved into a whale. This is the micro- vs. macroevolution distinction, a concept first articulated in the 1930s by the famous evolutionary theorist, Theodosius Dobzhansky, but an idea made more popular since the 1990s via the ID arguments. Microevolution is about simple point mutations or changes in the distribution of alleles in a population. For example, there are alleles for blue and brown eyes that are somewhat binary, and alleles for darker or lighter skin, which is more of a

continuum. You can generate populations that are all blue eyed or really light skinned, but this is just selecting from existing genes within the population. Mutations, such as that which provides protection against malaria, are simple changes to existing proteins (i.e., a handful of allele changes), like changing a program to use the number 12 as opposed to 15, or some condition from ‘true’ to ‘false.’ One of the most common mistakes scientists make is to over extrapolate some local phenomenon. The faster lion might tend to breed more, and so too the faster gazelle, but we do not have lions and gazelles that attain speeds of 100 mph; patterns stop, why everything is only good in moderation.

As a PhD economist, I find the macro and micro distinction instructive. The development of “macroeconomics” in the 1930s is a good example of trying simply to map some of the logic—and credibility—of microeconomics (then “economics”) onto aggregates, such that, rather than modeling the quantity and price of eggs, one modeled the total output and price level of an economy. We have tried to analogize the economy as a giant person, what we call “representative agent” or “Robinson Crusoe” models, where we assume that the entire economy is similar to a single person. We have tried to build many sub-models into an economy via input-output models, or models in which different industries have different interactions with interest rates and the like. There are many thousands of books and journals dedicated to macroeconomics and many Nobel Prizes, so many think it works. Yet, macroeconomists still cannot agree why Haiti is poor, how to fix Haiti, how to forecast or even explain business cycles, or predicted that Japan would thrive after WWII while the Soviet Union would stagnate. In summary, they do not know more than a simple student of history would without their macroeconomic theoretical tools. This highlights the fact that for all their rigor, macroeconomics is not a science; it simply provides definitions for macroeconomic data, such as inflation and GDP. Micro is generally nothing like macro, in anything.

In Behe’s second book, *The Edge of Evolution*, he made a quantitative argument about the evolutionary speed of malaria’s response to various treatments. His argument was based upon an empirically observed data point from public health studies which found that chloroquine resistance arose in about 1 in every 10^{20} malaria organisms.⁴ The mutation rate of malaria is roughly 1 in 10^8 mutations per base pair per parasite. There are on average 10^{12} parasites in the human body -- that’s enough for more than a thousand copies of every possible single mutation to exist somewhere in each infected person. Thus Behe argued that at least two mutations were necessary for chloroquine resistance, and these mutations were not sequentially helpful, in that the empirical probability of chloroquine resistance was as if they happened simultaneously.

Evolutionist Ken Miller wrote about this argument:

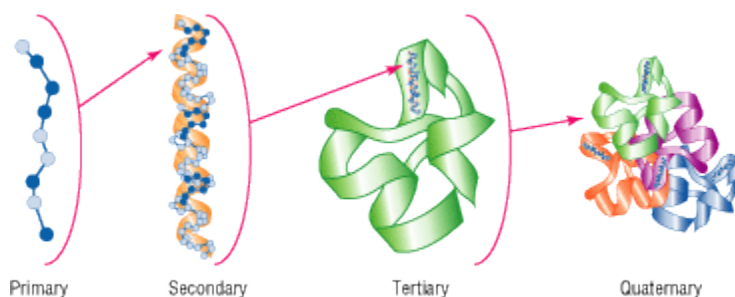
“It doesn’t really matter if chloroquine resistance emerges at a probability of one chance in 10^{20} , one in 10^{15} , or even one chance in 10^{10} . The problem is the logic that Behe uses...”⁵

However, it matters very much when one side is arguing that an event has a 1 in 10^{10} chance, another 10^{20} . A 1 in 10^{20} empirical number implies the mutations were, as a practical matter, simultaneous, which is why the number is the square of one mutational probability. A number in

between, say 1 in 10^{15} , would imply there was some selection into a first beneficial mutation, but a latter mutation was needed to create full chloroquine resistance. The actual numbers matter, because while it is conceivable that beneficial mutations scale linearly (in math terms, $O(n)$, where n is the number of needed mutations), if the data show functional mutations are highly nonlinear— $O(2^n)$ —then the mutations we do observe do not extrapolate from races to species. Science is about probabilities, not possibilities. The data in the case of chloroquine resistance showed two mutations were needed, and these arose as if intermediate single mutations were selected against, highlighting the time to generate this mutation increase exponentially when more than one mutation was needed. This implies a bound to the evolutionary mechanism, and so in finite time it is simply not true ‘anything’ is possible. This caused me to concede evolution does not work, implying an intelligent designer, which changes everything.

The key to Behe’s insight is that cells have considerable specified complexity. Just to create the RNA that codes for a protein takes special promoter regions on the DNA. Thereafter, it is often spliced to remove certain parts depending on the need, and then finally is sent to the ribosome, where it is translated into a protein, folded into a specific three-dimensional shape, proofread and tagged potentially for destruction if found defective. Most proteins work in teams of a half dozen or more, and proteins fit together in very precise ways, as they have not only three-dimensional shapes, but charges (+ or -), and also are either hydrophilic or hydrophobic, which alters how the protein folds, creating a puzzle piece with five dimensions. Proteins are as complex as paragraphs of words, and fit to other proteins the way a story connects one paragraph to another.

Figure 1. The Four Levels of Protein structure



The DNA codes for proteins via triplets of nucleotides, called codons. Interestingly, codons can be read in both directions, as in palindromes like the phrase ‘Do geese see God?’ Overlapping genes enable the production of more proteins from a given region of DNA than is possible if the genes were arranged sequentially, but then greatly restrict mutations, because adding or deleting one nucleotide shifts all of them over one space (a frameshift mutation), so a single insertion or deletion can shift all the triplets by one letter, changing their meaning entirely.

Figure 2. DNA Reading Frames

ATG CCA GAG CAT AAC	Reading Frame 1
ATGC CAG AGC ATA AC	Reading Frame 2
ATGCC AGA GCA TAA C	Reading Frame 3

Because of the interleaving of the genetic code, almost all mutations are detrimental, because the DNA is digital, not analogue, as proteins are often destroyed by single point mutations, and need specific binding site characteristics to fit with other proteins (shape, charge, hydrophilic/phobic). Requiring several mutations to acquire some novel functionality necessitates crossing a highly peaked fitness landscape, in contrast to the standard evolutionary reasoning that there are always many little steps one can take in creating a highly complex new cellular function (e.g., see pictures of Sewall Wright's fitness landscape). A protein complex like the cilium involves 50 different proteins working together like an internal combustion engine thus involves hundreds of thousands of specific mutations. To create a cilium *de novo*, either by single amino acid mutations, or blocks of them, would be like expecting a monkey to type a coherent short story by selecting and resubmitting subsets of gibberish that seems most meaningful.

The numbers problem for evolutionary theory is exemplified best by an early argument for Darwinism supposedly made by Sir Thomas Huxley, Darwin's bulldog, who helped popularize evolution soon after the *Origin of Species* was published.⁶ He noted that while life is complicated, one must remember that given enough time, a bunch of monkeys will type the complete works of Shakespeare, a true statement that presumably implies improbable events are actually quite probable, given that our world is approximately 4.5 billion years old. Yet, assuming that a typewriter has 50 keys, the probability that a monkey would type Shakespeare's *Hamlet* alone, has been calculated to be 1 in 3.4×10^{183946} on the first try. A million monkeys typing one letter per second would not come close to typing *Hamlet*, because only 4.3×10^{17} seconds have ticked by since the beginning of the universe. There is a big difference between what happens in an infinite amount of time, and a really large finite amount.

A good test of a theory is when the proponent puts it into an analogy: what is it like? These allow non-experts to judge the expert. Thus, when Dawkins invoked the infinite monkey example he highlighted his underlying premise: given enough time *anything* can happen.⁷ In *The Blind Watchmaker*, in a chapter entitled, "Accumulating small change," he referenced the Huxley argument, and simplified it to a smaller phrase from Shakespeare, "methinks it is like a weasel." He noted that if you start with a random sequence of letters and then randomize over those digits, *keeping ones that match the target*, you arrive in a relatively short time.

For example:

Generation 1: MWR SWTNUZMLDCLEUBXTQHNZVJQF

Generation 2: MWR SWTNUZMLDCLEUBXTQHNZVJQL

...

Generation 98: METHINKS IT IS LIKE A WEASQL

Generation 98: METHINKS IT IS LIKE A WEASAL

Generation 99: METHINKS IT IS LIKE A WEASEL

At a glance, this looks like a reasonable analogy to the random variation and natural selection of evolution. However, there is no analogous mechanism for selecting for those intermediate meaningless phrases. Nature cannot select for parts of DNA that will prove useful *eventually*. To suggest that the process above, which selects for—fixes, retains—nonfunctioning intermediate stages, is *like* evolution suggests a profound misunderstanding, because in Dawkin's example, his algorithm averages about a hundred steps, while without the selection of intermediate steps, the number of steps averages 10^{40} for this problem. Surely some intermediates would be selected, but that might take you to 10^{10} . To say there is a difference between his example and real selection is the heart of the problem: the numbers for one are feasible for explaining the tree of life, while for the other, they are not.⁸ If you ignore the math, and focus on possibilities, you can generate many examples and presume they demonstrate that the mechanism works. The latter is not a rational inference, just hand-waving speculation.⁹

Current evidence for evolution covers a wide range of topics.

- fossil record (whales, birds/reptiles, humans)
- evolution in real time (finches' beaks, dog breeds)
- vestigial organs (appendix)
- embryo development (ontogeny recapitulates phylogeny)
- bad design (laryngeal nerve, eye)
- biogeography (life on new islands)
- homologies between species (bat, ape hands)
- molecular phylogeny (tree of life via genetic similarity)

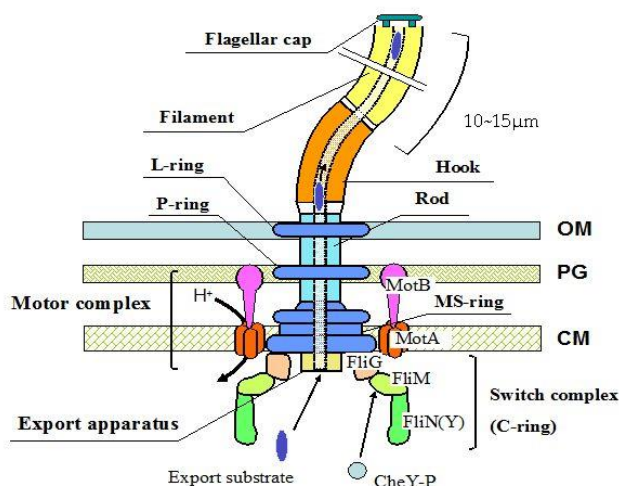
The best evidence for evolution changes each generation, because the old evidence is found to be false (see footnote for a dissection of the list above).¹⁰ They are part of a spread argument, so like Persia's Immortals, when one inevitably dies a new one just takes its place.

For example, Michael Behe highlights the bacterial flagellum as an irreducibly complex cellular machine, in that it is so functional, intricate, it could not be built step-by-step via naturalistic evolution. Other researchers have noted the type 3 secretory system (T3SS) allows some bacteria to pump proteins outside its cell wall, and so is fastened to the cell wall in manner similar to the flagellum. It contains several proteins 'homologous' to the proteins in the basal portion of the bacterial flagellum. As the T3SS is fully-functional, even though it is missing most of the parts of the flagellum, it shows intermediates exist that could then build up to the flagellum. In the evolutionists account, this means is that the argument for intelligent design of the flagellum has failed.

Yet 'homologous' is not close to identical. For example, one flagellar protein and a protein from the T3SS are homologous because, across a stretch of about 58 amino acids within 300, 13 residues are identical in at least 50 percent of the proteins studied, and another 23 amino acids within that stretch have similar chemical properties.¹¹ Thus, one still needs dozens of amino acid

changes to change the ‘directly homologous’ proteins to ones that work in the flagellum, and add several more, involving many thousands of specific mutations.¹² Consider the probability of changing a unicycle to a bicycle via a sequence of random assembly-line mistakes that persisted and were built upon. We know intuitively that an assembly line would never, over many billions of years, allow this to happen without a human seeing the defective part and then adding the necessary pieces that would enable new function. Without an analogous intuitive understanding of chains, sprockets and wheels at the protein level, biologists are able to propose similarly disparate machines can morph from one into another via random mutation because most people have no idea of the precise and complicated mechanism by which protein complexes are assembled.

Figure 3: the base of the bacterial flagellum



The irreducible complexity argument is not that no subset of a functional system is useful in some other context, just that one cannot generate a step-by-step creation of an irreducibly complex molecular machine from such a subset with realistic probabilities. Richard Dawkins wrote this single example of a functioning complex with some similar parts ‘beautifully showed how the bacterial flagellar motor could evolve via known functional intermediates.’¹³ There are still many tens of thousands of functional mutations needed to get the T3SS to switch from injecting proteins to twirling a propeller. Were all the proteins needed by the new propeller useful for the secretory system prior to it actually propelling the little bacteria? 2 and 4 stroke engines, ball muskets and rifles, the code for Excel and Word, all have some large similarities, but the transition of one to another, outside of an intelligent designer, still generates Hamlet-like improbabilities. Saying ‘evolution did it’ is not a demonstration, just an assertion of faith.

While falsification in theory determines a scientific statement, most theories we argue about, such as global warming, evolution, or optimal fiscal policy, cannot be falsified in practical terms. As any sufficiently complicated argument cannot be wrong, Darwin’s *Origins* has been the

inspiration for generations of progressives, in the same way Marx's *Das Capital* motivated generations of socialists, even though it was built on the labor theory of value that no one defends any more (I could spend 100 hours on a painting and it would still be worthless). Darwin's treatise, not Wallace's, was seminal precisely because it was longer, more subtle, and sufficiently complex that it flattered and disarmed all but the most wary intelligence. This is all the more curious because, without Wallace, there would have been no *Origin*, although the converse is not true.¹⁴ The key to a convincing theory is that it be simple enough to be apprehended without much strain, consistent with popular prejudice, but sufficiently convoluted to allow a cast of high-status interpreters.

This is the classic spread argument often used in debate, where one proposes many different arguments, all sufficient and none necessary, impossible to address in any reasonable amount of time. Such rhetoric is common in courtrooms, as for some reason, in American courts there is no cost to making several assertions in order for one to stick. For example, in the 2005 Pennsylvania *Kitzmiller v. Dover* trial about teaching evolution in school, the attorneys against ID piled up a stack of books in front of Michael Behe for good theatre, and referenced 58 peer reviewed articles that mention the evolution of the immune system. Yet all those articles did was note various similarities between various systems and proteins among different species. Pointing out similarities at the structural level does not address the origin of the system in which the components are integrated and constructed.

The spread argument is not limited to the courtroom. At the TalkOrigins.org website, they catalogue a large list of arguments for evolution and against intelligent design. On its section for '29+ Evidences for Macroevolution,' it lists dozens of papers in support. One paper is an experiment where several strains of *E. coli* were subjected to various temperatures, noting that those *E. coli* that weathered certain changes in temperature outcompeted ancestral *E. coli*. This is like noting that people who survive a plague would be more fit than the typical individual who did not face this test, hardly striking. No new proteins were created, no new species, just 'tough' *E. coli*. One could go through all the TalkOrigins arguments but the point is there are too many to address in any seminar, court case, or reasonable amount of time anyone would apply to the problem. While all as flawed as the example above, as they are 'peer reviewed' they constitute proof in many venues because most people defer to experts.

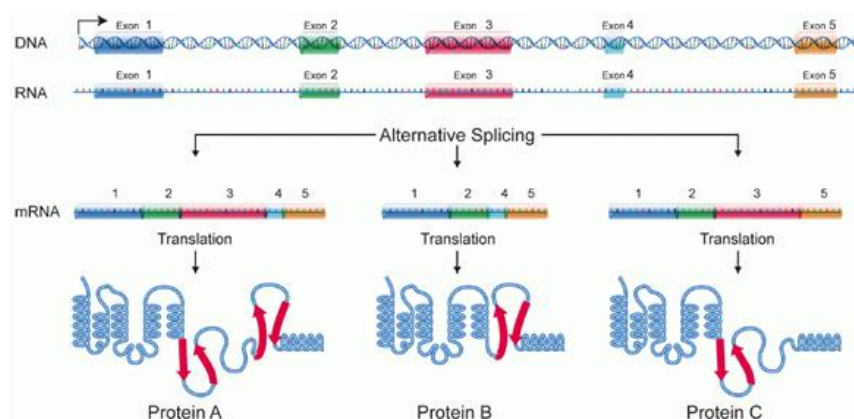
A titanic shift in the evolutionary argument has occurred at the molecular level. Selection used to be considered the driver of evolution, while now it is considered by many to play a minor role: most evolution supposedly occurs through the gradual acquisition of neutral mutations. Most of the DNA does not code for proteins, and with 3 billion base-pairs every human generation about 100 genetic mutations arise randomly. Natural selection still works, though it is just relegated to final phase where new DNA nucleotide strings are produced in abundance, later co-opted by a final serendipitous mutation with some fitness advantage. Thus, a flagellum's creation from nothing would involve hundreds of thousands of new nucleotides, most just randomly accumulated.¹⁵ In the influential models of evolutionists like Darwin, Ronald Fisher, JBS Haldane, or Richard Dawkins, change was based on tiny selective advantages. It is no longer is it required that most mutations be beneficial, so that thousands of mutation occur randomly over

time, then a couple serendipitous ones pull these all together to create something truly novel. Precisely how this is done is never demonstrated, just the assertion that it is possible, and one's skepticism does not prove it did not happen this way.

Another major shift in our understanding of biology is that the more we learn about DNA, the more obvious it is that the old idea that genes code for proteins in a straightforward way is simply untrue: it is insanely more complicated. In humans about 20K protein coding genes create 100K proteins. Initially, people thought the process was simply DNA → RNA → protein. Yet it soon discovered that only 1% codes for proteins, and another 10% of DNA creates functional RNAs that assist in the creation of proteins while not actually coding for proteins. One can think of this in the way only 10% of our economy is involved in manufacturing or farming, 90% in providing the services needed to assist those sectors. In 2014 an international collaboration on the Encyclopedia of DNA elements (ENCODE) found 70% of the genome is transcribed into RNAs and no one is sure exactly what they are doing, and many suspect that if we look more carefully all of the genome is transcribed (they only looked at 20 out of 150 cell types, and kidney cells transcribe different parts of the DNA than muscle cells). Some think most of those transcriptions are useless, but if so, it would be a uniquely inefficient process within our cell.

The bottom line is genes are not so much an instruction manual, but rather a collection of reusable libraries pieced together for a specific protein, put into a specific array for a specific protein.¹⁶ Contiguous sequences of protein coding genes are separated into an average of 8 regions, for example, 15 regions where 7 subsequences need to be excised (the introns), and then the other parts (the exons) stitched together. The exons used for one protein are usually used for other proteins. A single protein-coding region in DNA can yield thousands of different proteins through alternative splicing directed by those RNAs that use various subsets of genes to create different proteins.¹⁷ One could add the epigenetics (which turns genes off or on given environmental cues) and lateral gene transfer (supposedly genes jump from phyla to phyla via viruses), but the point is the more we learn the more we realize how complicated biology is at the molecular level.

Figure 4. Many proteins from one gene



For Darwin, the simplicity of the cell allowed him to imagine that it was infinitely plastic; for modern evolutionists, the *complexity* of the cell allows them to imagine infinite plasticity. The large number of different exon combinations that can create a protein, and the many different RNAs that regulate them, generate a bewildering array of possibilities given the many RNAs we do not understand. Genes affect more than one phenotypic trait (pleiotropy), and many genes affect a single phenotype. Consider my early learning of the eye color gene, which assume that B represented Brown, and ‘b’ blue: BB, Bb, and bB implied brown eyes because B was the dominant allele, bb implies blue eyes because it is homozygous for the blue allele. Now my ‘23andMe’ report lists several genes that suggest I *probably* have blue eyes, implying even this simple phenotype, color, is much more complex than previously thought.

Creator Data

Intellectual theories like evolution which posit that all life evolved via naturalistic processes of descent with modification and natural selection, will never be resolved via logic or some field results. As in the flagellum example, one can point to something similar and argue many of such complexes provided the bridge by which one builds from nothing to something as complex. One cannot prove that evolution did not happen this way, because that would require one to demonstrate the infeasibility of all the different pathways from A to B, an undefined state space, especially because A is an undefined ancestor protein. Yet, we have data on real-time evolution from several sources that ends the debate in the way the fall of the Soviet empire resolved the Marxist hypothesis.

Since the early 1900s, the biological community has used the tiny fruit fly (*Drosophila*) to conduct thousands of experiments. Radiation and certain chemicals allow one to increase the mutation rate, generation times are only 30 days, and strong selection techniques are applied to reveal evolution. Since 1910 geneticists have documented over 3,000 mutations in this creature. Some are dramatic, such as legs growing out of their eyes, and flies with an extra set of wings (but no muscles were attached). These truly novel mutations do not lead to greater fitness, rather extinction. Via artificial selection their main result is to generate sexual isolation, where certain female flies would be unreceptive to other flies. These are considered cases of ‘incipient speciation,’ which is amusing because we see this in people—there are tribes in southern Africa that have had very little interbreeding over 30,000 years—and no one thinks sexually isolated human demographics are incipient species, and neither do we think dog breeds that no longer naturally mate are not all dogs.¹⁸

An even better species for demonstrating evolution involves *E. coli*. For over a century, scientists have picked the single-celled bacteria apart—sequencing its genes, cracking its genetic code, running experiments on its metabolism, earning Nobel Prizes off of it, and turning it into, arguably, the most-studied organism in history. Richard Lenski's experiments with the bacteria has been ongoing since 1988 and created over 64,000 generations. For the first 20,000 generations of Lenski's experiment very little happened. There were a few molecular adaptations observed in size and other simple changes, yet whenever we understood their molecular basis,

they involved the knocking out of genes, or decreasing protein activity via point mutations in the DNA.

In 2003, Lenski's team found a change was so profound that it was seen as a speciation event. One of his lines of cells has developed the ability to utilize citrate as a food source in the presence of oxygen. Wild *E. coli* already has a number of enzymes that normally use citrate and can digest it under anaerobic conditions, so all the bacterium needed to do to use citrate was to find a way to get it into the cell under aerobic conditions, as the rest of the machinery for its metabolism was already there. The protein that transports citrate from outside the cell into the cell cytoplasm where it can be used as a carbon source is normally turned off under anaerobic conditions, but a mutation rearranged the DNA so the transmembrane protein gene was next to a new promoter, allowing it to be produced in aerobic environments. Thus the greatest example of macroevolution in 64,000 generations was merely turning a switch that used to be sometimes on, to always on. This kind of evolution does not extrapolate to create new machinery implicit in creating new species, in the same way dog breeding does not extrapolate to create anything but more funny looking dogs.

There was also a large effort to use mutations to create new crops in the twentieth century. Based on the theory of evolution, if the rate of mutation was increased (using radiation or chemicals known to create mutations), and highly artificial selection was applied, one would expect to find valuable new traits in these crops. A couple mutations did generate benefits, but they involved a simple loss of function, as with low-phytate corn that has certain advantages as an animal feed: the genetic machinery that directs phytic acid production was damaged. Again, that does not generalize to create things like the flagellum, an eye-sensitive spot, or the endocrine system. That sort of agricultural R&D is now considered a dead end, and companies have abandoned such efforts. Profit maximizing corporations would accept neo-Darwinian logic eagerly if it worked, but it does not.

If we look at the global human genome, where populations have been separated for 50,000 years, there are no changes like the many profound differences between apes and humans. The split between aborigines and pygmies was about 1/100th of the time of that between chimps and humans (50k vs. 5MM). Compared to chimps, there are 50 million new nucleotides in humans, each species has about 700 genes not found in the other, and tens of thousands of proteins have slight differences (why we can't use chimp red blood cells even though we share all genes related to their manufacture).¹⁹ If evolution proceeds linearly, there should be 500k new nucleotides, 7 new genes, hundreds of different proteins between anciently separated human populations, yet the differences across all human populations consist of trivial changes in allele frequencies (thus, people are darker skinned near the equator) and some minor mutations (e.g., lactose tolerance, sickle cell), so that anthropologists consider human races significantly less different than dog breeds. The macroevolution that took us from apes to humans appears to have stopped.

Richard Dawkins once noted, 'evolution has been observed. It's just that it hasn't been observed while it's happening.'²⁰ This is quite convenient, because Alfred Wallace noted in his 'Sarawak Law' that when species appear in the fossil record, closely allied species appear too. Thus, there

will always be species that look ‘like’ other species close in time to it, so you will always be able to find something like a horse close to the horse in the fossil record. For example, I could look at the fossil record, and see bear, wombat, hedgehog, otter, beaver, platypus, sea lion, seal, manatee, beluga whale, humpback whale, blue whale, and assert a clear path, but these are just ever more similar looking animals that exist at any time. The point is when we try to observe non-trivial functional mutations in real time on simpler species, using artificially accelerated methods of mutation and selection, we see nothing.

There is a long philosophical and scientific history to the underlying thesis that reality is an illusion. This skeptical hypothesis can be dated in as far back as ancient Greek philosophy. In 2003 philosopher Nick Bostrom argued that there is good reason to believe we are simply living in a simulation, avatars like those in SimCity, with seeming consciousness, like in the movie, “The Matrix.”²¹ Given this argument, which was well-received, it is curious that most academics consider a Christian God creator to be outside the bounds of rationality.

Esteemed academics believe in all sorts of fantastic theories because if we assume they are true, they explain other things well; they are “as if” theories of forces that we cannot test or observe directly. Likewise, we cannot observe God’s existence directly, but that also is not how most science is conducted. Certainly, some scientific theories, like those of Galileo, can be proven by dropping objects off the Tower of Pisa to show that those of different weights fall to the Earth at the same speed. However, most science is not like that anymore. The rational argument for a creator via inference is the best explanation—the simplest and most powerful—is a standard scientific argument, at least as rational as assuming that a million parallel universes are created every second (as in the multiverse argument, which is used to explain the improbable physical constants needed for life to exist).

The Rise of Progressives

Evidence of a designer is a real game changer, especially as over the past two centuries science seemed to have proved God a primitive myth. For most of history, the intelligentsia were religious apologist, rabbis and priests, but today the intelligentsia consider themselves completely different, rational and reality based. This is a delusion; they are no longer apologists for religion to be sure, but they still have a faith in something that cannot be proven that colors their beliefs. This premise is tightly linked to the theory of evolution.

Religion has declined in scientific respectability since Galileo embarrassed the Catholic Church, as rejecting the heliocentric solar system highlighted the pope’s opinion was demonstrably false on some issues.²² The decline accelerated in the US after 1960, in large part because as more people went to college they learned that evolution was a fact, proved by science, making a creator god almost irrelevant, humans not special but rather just another animal.

Spinoza’s 1670 *Theologico-Political Treatise* argued that ‘miracles’ such as those mentioned in the bible reflect ignorance and are not helpful explanations. As Europe entered the Enlightenment and discovered reductive explanations for what previously were considered miracles, such as how planets move, or where Kings obtained their power, life appeared to be significantly less mysterious and increasingly rational. Kant examined the history of the world

and likened civilization at that time to a child entering adulthood. He stated that previously, we had a childlike ignorance of the natural world, sociology, and philosophy, and so were dominated by superstition, ignorance, and credulity, but because of the scientific method we were leaving that stage and would never look back.

The German philosopher Georg Hegel argued that individuals do not have original ideas, but their thoughts are merely expressions of the Absolute Mind, a *zeitgeist* that evolves over time in an upward direction. In his words, individuals "...are all the time the unconscious tools of the World Mind at work within them." What Hegel was offering was a spiritualized version of evolution, nicely consistent with Kant's view of progress at that time. Charles Lyell's 1828 *Principles of Geology* argued for uniformitarianism, the idea that the Earth was shaped by the same processes still in operation today, such that, given millions, not thousands, of years, all of the great geological upheavals of the past and enormous changes during the long history of the Earth could be explained easily in terms of well-understood processes.

Yet as Spinoza's 'no miracles' dictum spread throughout science, no one was able to offer a good answer to William Paley's 1802 watchmaker argument. He argued that if you came across the most sophisticated technology of his day, the pocket watch, it would be most reasonable to assume it was made by an intelligent person, not natural forces. This appeared to be an exception to Spinoza's rule, a case where a miracle could be invoked, as Paley argued that the complex structures of living things and the remarkable adaptations of plants and animals contained integrated complexity that required an intelligent designer, they cannot simply appear naturally.

Nietzsche noted that "Without Hegel, there would have been no Darwin," in that Hegel applied the concept of evolution not to biology, but to the world of ideas. Darwin's theory was a direct application to species of Lyell's geological argument to geological formation (they were friends), the idea that a commonly observed process, selection, when applied to the variation in offspring over hundreds of millions of years, would create change sufficient to explain all life. Note that Darwin's famous dictum *Natura non facit saltus* ("Nature does not make jumps") was a phrase from Lyell.

Thus, Darwin's *Origin of Species* was acclaimed immediately as a correct explanation of how life arose, because nothing is as convincing as evidence for a theory everyone believes. When Nietzsche famously wrote, 'God is Dead' in 1882, he was describing conventional educated opinion, not making an ontological assertion. Evolution was regarded less as an idea that changed the world than as an attitude favored by the sophisticated as a vindication of their belief that existence lacked purpose.²³

Hegel's Absolute Mind appeared to point to our modern conception of evolution. Evolution as a hypothesis hardened into dogma before anyone had any idea about its genetic mechanism; it simply was too good to check.²⁴ Darwin showed how methodological naturalism, the strategy that precludes supernatural causes as a matter of principle, could answer Paley's argument. The specific mechanism at the genetic level was not appreciated because they had no conception of it, and so Darwin merely argued that natural selection, when applied to a pool of offspring who all differed in some ways, over a sufficiently long time, could create anything. This has been called

“the best idea anyone has ever had.”²⁵ As it rebutted the thorniest remaining theological argument for the existence of God, it surely was the most welcome.

Progressivism is the spirit that prevails today. It is a philosophy based on the Whiggish “Idea of Progress,” which asserts that advancements in science, technology, economic development, and social organization make it possible to improve the human condition via reason.²⁶ It adopts philosophical naturalism, the theory that there can be no mention of supernatural forces. It is a worldview filled with faith in humanity’s ability to control a complex and often unsettling world.

Progressives are secular, and think their morals and means are predicated on the real world that we all experience firsthand. If you look at what is popular at Harvard, NPR, NBC, or the *New York Times*, you will find the standard progressive mindset. To say you are for progressive principles means you are focused on reducing suffering via top-down education, regulation, and law. In the Progressive view, religion was based on arguments by authority of disputed texts, whereas progressions are focused on texts based on reason, the scientific method, and empiricism.

Human Nature and Will over Reason

All philosophy is based on a concept of human nature. Socrates thought humans were teleological, and everything has a purpose. Thomas Hobbes thought man was by nature little better than animals. Jean Jacques Rousseau thought that outside of the corrupting of society, men are noble savages. Marx thought human nature evolves over time given the structure of production and social relations that underlay them. All were necessary in describing what we ought to strive for, and what this implies we should do now. While nature does not tell us right and wrong, nature restricts the answers. For example, regardless of laws that mandate men and women have the same number of athletes in colleges, men continue to like playing and watching physical sports more than women.²⁷

Human nature starts with the basic homeostatic drives for food, warmth, safety, and sex that all animals have. Yet mammals also demonstrate ‘affective’ or emotional instincts. Affect is the component of subjective experiential feeling that is difficult to describe verbally, but is linked closely to internal brain states and neurotransmitters. Some of these go very deep. For example, lobsters that lose dominance battles become depressed. If you administer Prozac to them, a drug used to alleviate depression in humans, relieves these symptoms in lobsters, and they lose their ‘depression.’ Researchers have found neurocorrelates for the affects rage, fear, caregiving, panic, and play, and these were not in the neo-cortex that makes us uniquely human, but rather, in the more primitive parts of the human brain, such as the amygdala and hypothalamus.²⁸

These are desires that we do not process consciously and found in many mammals. We are both driven by them, and try as well to manage and discipline them. If play and language are hard-wired, what about other human universals, such as envy, empathy, or a search for meaning? If an instinct was not good at any level, it would be removed via natural selection, just as polar bears do not have dark fur; a viable instinct has to be evolutionarily stable. The key point is that anything common across time and place among people is good for us in moderation, as our instincts were not designed to kill us, but rather to help us prosper if properly moderated

Everyone knows they sometimes make decisions based on vague emotions and desires, other times on cold calculation, and it seems clear that one should not make important decisions when highly emotional. For many, rationality seems an optimal strategy for making decisions. The neuroscientist Antonio Damasio studied certain victims of accidents, tumors, and other forms of brain trauma in the 1970s and '80s. In these unusual cases, the victim's faculties remained generally intact despite their experiences, and yet their lives were falling apart.

They performed well on any test that measured their intelligence and critical thinking, and yet outside the lab, when presented with more ambiguous questions, they found themselves paralyzed and unable to make a decision at all. This is because without adding emotional valence to various future scenarios, it is very hard to weigh the positive and negative outcomes. Any decision involves trade-offs, so without emotions or feelings, every positive and negative outcome must be translated into some kind of metric that allows comparison. Without emotion, this is extremely difficult because of the number of positive and negative inputs are difficult to compare (e.g., one option may compromise the respect of my friends but help my career). Damasio noted that we are more like feeling machines that think, than thinking machines that feel.

At approximately the same time, Michael Gazzaniga was studying split brain patients, and noted that the part of the brain we use to formulate speech and talk in our head is usually in one hemisphere. Using clever experiments that flashed pictures to one hemisphere of the brain alone, he then asked the subjects to point to answers with different arms (which are controlled by different hemispheres). When he asked the speaking hemisphere to explain the choice, he showed that when patients knew something in their non-speaking hemisphere and signaled this knowledge via the hand that hemisphere controlled, their speaking hemisphere engaged seamlessly in confabulation to explain their final judgment.²⁹ Gazzaniga compared it to a Presidential press secretary denied access to crucial meetings, whose job it is to explain why a policy decision was made when often he has no knowledge.

The most fascinating part of this research is that people do not even know when we are rationalizing; it occurs unconsciously; we lie to ourselves all the time. Our will is deeper than anything we might try to articulate, and all of our verbal dexterity instinctively tends to explain the will in the most plausible way it can, as opposed to shaping the will. Think about how we crave foods with basic chemicals we might lack, such as salt or carbohydrates, and it is rather amazing that we have specific inexplicable desires for such things as potato chips. Emotions lie in the basic parts of our brain we share with other mammals and babies that cannot reason; they exist at a deep level and help us actualize our will. The will dominates our reasoning routinely whether we think about it or even notice what is going on.

In Plato's *Phaedrus*, he painted the picture of a charioteer driving a chariot pulled by two winged horses, one dependable, the other troublesome. The charioteer represents reason, the dependable horse represents good moral sense, and the unruly horse represents the soul's irrational passions and biases. In order for the charioteer to be free to go where he wants, he must constrain the irrational horse; thus, paradoxically, freedom requires constraints, with reason controlling the untamed will. Reason is the essence of humanity. Christianity takes the opposite view, and posits

that the will controls reason and emotions, and therefore, subordinating one's will to God is an important principle in the Christian worldview; pride in oneself is man's greatest sin. For example, in the Garden of Eden, the snake tells Eve that if she eats from the apple, "Your eyes will be opened, and you will be like God, knowing good and evil." In Christianity our main problem is that our ability to perceive the abstract concepts of good and evil also allows us to determine this for ourselves, often in a self-serving way.

Character habits we call virtues, such as temperance, gratitude, honesty, tolerance, prudence, and courage, help us prosper. Aristotle's *Nicomachean ethics* discusses many of these virtues in a nuanced way, as in the famous line "Anyone can become angry—that is easy, but to be angry with the right person at the right time, and for the right purpose and in the right way—that is not within everyone's power and that is not easy." Statements prescribing virtue cannot be precise, because the action must be appropriate to the occasion. This is why the will is emphasized more in the New Testament than is specific conduct; only with good will is it likely that, over time, trade-offs will not simply be a rationalization of base motives; without good will, no amount of prudence will generate consistent virtue, and much evil has been done under the pretext of righteousness, using the logic of breaking a few eggs in order to create an omelet, an omelet that often never arises.

If the will ultimately dominates reason regardless of how much we try to reason, Plato's strategy of organizing our thoughts will fail. People are not so much reasoning as they are desirous, driven desires we hardly understand but think we reason into existence; it is simply impossible to reverse the hierarchy. Rationality is a tactic, not a strategy, in daily life, and in science. What the bible calls the 'heart' is the emphasis on our will, what we prioritize above everything else.

Everyone Seeks a Grand Purpose

If we are mere accidents of historical contingency, perhaps we have all the meaning of an ant in an ant hill. The existential writer Albert Camus lamented that without God, we have to come to grips with the fact that our lives are inherently meaningless, and either accept God, or the absurdity of life, or kill ourselves. This is a sub-plot in Woody Allen's *Hanna and Her Sisters*, as Woody's character looks for the meaning of life in various religions, from Catholicism to Hare Krishna, and ultimately finds it while watching a silly scene in the Marx brother's film *Duck Soup*. The revelation is that life should be enjoyed, rather than understood.

It is a nice thought, but humans were not made to find contentment living only in the present. Our unconscious will needs to find something grand to serve, even if we cannot articulate it. Sartre spent hours each day in coffee shops, writing his thoughts, so he was very good at articulating them. A devotee of Camus and Heidegger, he concluded that we are "condemned to be free." That is, modernity had freed us from the absence of choice found in instinctive animals, or people living on the edge of existence whose tasks are dictated by the immediate goal of survival. However, humans have to accept that life is absurd, because there is no objective meaning or purpose to life; therefore, we simply create meanings that are merely ephemeral and subjective. Now, existentialists concede that *if* God exists, we have a clear meaning, but no

existentialist other than Kierkegaard thought that a sane person could believe that there was a personal God.

No one can live this way, even existentialists. Thus, at the age of 55, Sartre declared that his interest in Marxism trumped his philosophy of existentialism.³⁰ Marxism offered a total vision of the world via its objective laws of motion, the ways in which economic power relationships shape individual consciousness and conceptions of truth and the good. Subjective meaning was rejected, and objective meaning was recognized and pursued. Marxism is the ultimate progressive project: atheist, putatively objective and scientific, top-down over bottom-up, with failures in the past attributed to idiosyncratic errors we have now corrected. It was a lousy choice, no better than that of the existentialist philosopher Heidegger, who in midlife became an ardent supporter of Hitler. Marxism and Nazism allowed people to connect to future appreciative people, just as Pericles' Funeral Oration connected the fallen warriors to the greater future that Athenian citizens would appreciate.³¹

It is instructive that in the late 1960s when the West was by far the most educated and prosperous that humans had ever been, many people wanted a revolution.³² Prosperity was not enough. They needed a grand goal, and as God was becoming less relevant to most, the focus was to 'immanentize the eschaton', to create heaven on earth.³³ Socialism seemed to offer the only purpose to many as religion receded, especially to those religious denominations sympathetic to progressivism (e.g., Unitarians). When everyone becomes wealthier but religion recedes, the average person becomes more dissatisfied with the status quo.

Deep within every human being, there still lies the anxiety at the possibility of being alone in the world, a heartbeat away from dying without a purpose. As Betty Friedan wrote in her 1962 book, *The Feminine Mystique*, housewives of that era lay in bed in an existential panic, afraid of the big question looming silently over them, "Is this all?" Without a grand purpose or immediate necessity, angst festers.

Christian Classical Liberalism

Historically, individuals lived to help their families and the tribe. Yet, around 800-200 BCE, many different religions arose that centered on the individual. Plato and other Greeks wrote a great deal about man's nature and proper aspirations, in ways that are very similar to the philosophies of many other religions: Taoism, Shintoism, Buddhism, Confucianism, Judaism, Hinduism, and Zoroasterism. This coincidence of thought is called the "Axial age," and was encouraged by the tradition of travelling scholars, who roamed from city to city to exchange ideas about human meaning, duty, and the fundamental nature of things. They all focused on the definition of a good person, where the motivation was not some law or ruler, but rather the creation of a harmonious, happy, and fulfilled life.

This approach to bettering society was based on individuals taking responsibility for their own prosperity and happiness. The main problem we all face in life is within us, not other people, and our personal virtue is inseparable from the rest of our lives. They accepted the injustices of various ages, but had faith that regardless, any individual could have a good life if s/he simply focused on what they could control. One can quote Epictetus, Shantideva, or the Bhagavad-Gita

to see what we now call the Serenity Prayer (often attributed to a 20th century American theologian Reinhold Neibuhr):

God, grant me the serenity to accept the things I cannot change,
The courage to change the things I can,
And the wisdom to know the difference.

All of these religions were humble; they did not try to create a new society, just work within the system in order to thrive. This does not mean one should not try to improve institutions and laws, merely that such efforts should rely on prudent incrementalism, because modesty suggests we simply cannot generate a ‘Great Leap Forward.’

The Christian worldview underpins the development of individualism during the Enlightenment. Regardless of their social roles, all individuals—slaves as well as the free, women as well as men—were equal in the sight of God. The non-egalitarian customs transferred by ritual and heredity were replaced by the egalitarian union of all in the “body of Christ.” God’s grace was available to everyone, sinners included. Scenes of Christ’s suffering and resurrection painted on the walls of medieval churches testified that the immortal soul, rather than the immortal family, was the primary constituent of reality. God was no longer tribal, but universal. The multiplicity of gods of the pagan Greeks, Romans, and the subsequent barbarian invaders were swallowed up in a single universal God.

The mundane virtues of Christianity are essential to bourgeois morality, a life of ‘good deeds done in the humility that comes from wisdom’ (James 3:13). A good businessman focuses on modest efficiencies, and teaches care, discipline, courtesy, and manners; he teaches fidelity to contracts, honesty in dealings, and concern for one’s moral reputation, as well as gratitude for simple transactions. Capitalism flourished in a Christian environment because these small virtues thrive only if one values those of temperance, prudence, justice, and courage as good in and of themselves. If they are mere tactics, it is simply too tempting to observe them opportunistically. Thus, the bourgeois and Christian moralities reinforced each other.

Christianity implied a fundamental equality of status as the basis for a legal system that developed in the Enlightenment. Christianity undergirds the idea that enforcing moral conduct through laws is a contradiction in terms and thus, laws should be limited, and constitutions are thus centered on governing the government, not the people. It notes that individuals have rights, and rulers exist for individuals, rather than the converse. Individual rights extended to life, liberty, and property, because you can hardly be free if you cannot control anything. Finally, only a representative form of government is appropriate for a society founded on the assumption of moral equality. We generally take the West’s concept of liberty for granted, and Christianity is central to the development of that concept.

Why the Progressive Social Project Fails

Progressivism is inherently anti-bourgeois, because the rights of many dominate the rights of the few, such that equality is valued more than general prosperity and mundane virtues. Simple utilitarian calculus shows that if you take one million dollars from a rich man and give it to one

million people the world is better off, and this then generalizes. This is why the Nazi political theorist Carl Schmitt argued that ‘liberal democracy’ eventually drops ‘liberal’ to become mob rule, because when classical liberal rights (life, liberty, property) are disliked by most people, there is no principle that prevents retracting them. Progressivism institutionalizes envy and focuses on coercing others as a mechanism to rectify inequality, because this is the easiest way to expropriate the wealthy who have benefited from historical accidents. In the ethical accounting of progressives, merchants are perhaps useful, even necessary, but they are not virtuous. Thus, the original 1933 ‘Humanist Manifesto’ not only rejects God, but also the profit-motive. Market activity that does not directly create things, such as advertising and finance, are always suspect, why there is always the idea that stock transactions should be taxed 0.5%, because such transactions do not seem to add to a nation’s output. Business ideas should be deemed socially useful, otherwise prohibited.

Progressives consider science a synonym for “objective truth,” yet science is hardly as reality-based or veridical as they believe. Note that today theoretical physics focuses on string theory, which discards the old notion that new theories need to be falsifiable, replacing that with ‘post-diction’, which consists of ‘predicting’ the existence of gravity. The objectivity and rationality of science is not the result of unbiasedness, but rather an emergent property of the scientific community where the ultimate test for theories is acceptance of what works and the rejection of what does not: it explains more with less, integrates, or predicts. Thus, great scientists like Newton and Tesla were actually into what we would call the occult, but they found profound truths about nature anyway because when people checked, their theories worked (philosopher of science Paul Feyerabend argued science is ‘whatever works’). The emphasis on individual objectivity, as opposed to the objectivity of the science community over time, is just a way to stifle dissent, because today ‘unbiasedness’ applied to individuals enforces the current scientific consensus. Scientists who claim to be uniquely unbiased are invariably more biased than average, just as cultural relativists are invariably highly judgmental and ethics books most likely to be stolen from libraries; it is better to simply acknowledge one’s ideology and prejudices as opposed to think you have none.³⁴

Scientific articles must be rigorous, but rigor can only be applied parochially, as anything subject to rigor needs clear assumptions and simplification. Given a result it is then generalized without rigor and called science. While most assumptions seem self-evident, many are chosen for their analytical tractability, their limitations ignored as perverse anomalies. For example, in my field of economics, one can generate mathematical models based on assumptions that support raising or lowering taxes, increasing or decreasing social security. The trick is merely in the assumptions, and as all models are simplifications of reality, all such assumptions are technically untrue, but intuitive to various ideologies. In such an environment, economists as a profession did not predict the economic inferiority of socialism, rather, historical events did.

The main way to be a successful scientist today is to first extend your thesis adviser’s work in your dissertation, then collaborate with other highly esteemed researchers, which leads to an endless refinements within a paradigm. Thus our current academic fields of sociology, anthropology, education, economics, have little practical application, and there is little demand

for its abstruse principles because they are often simply absurd. Consider that in the field of education where the academic elites do guide policies, education has not improved, kids are not learning math and science faster and deeper than they used to, in spite of all the research that putatively should lead to better learning.

Progressives focus on justice, which means fairness, which they see as primarily meaning equality, but there a problem arises. As Aristotle noted, everyone is in favor of equality, but most disagree on what should be equal, as no rule is equal in every dimension (e.g., equality of opportunity or result?).³⁵ Progressives today focus on equal socioeconomic status for groups—e.g., women, African-Americans, LGBT—noting that such groups were explicitly discriminated against in the past, and thus the highest good is compensating for past injustices. However, this ignores the individual, the ultimate minority. To expect justice to arise through an impersonal process like affirmative action for groups is impossible because justice is an attribute of individual action, a consequence of proportion rather than equality. Social justice merely exacerbates tribalism and ethnic division, increasing frustration as the groups targeted invariably are not helped by policies that are focused not on the disadvantaged group's behavior, but rather, enabling them psychologically and physically to persist in habits that underlie their problems (e.g., helping single mothers pay for housing encourages more single parent households, which then disadvantages certain minority groups disproportionately).

In a market economy you have decentralized decision-making by consumers and firms pursuing parochial self-interest, while in the progressive approach you have centralized decision-making by experts. The problem is that presuming individuals lose their self-interest once they become bureaucrats is fanciful. One aspect of a good objective is that it inspires sincerity, what economic game theorists call “incentive compatibility.” All ideologies work at different levels, providing principled advice to some and disingenuous pretexts to others, and there's no avoiding the fact that for even good policies, most support them for the wrong reasons. As a practical matter, the chief difference between the Axial age focus on bettering the self, versus the progressive top-down focus on equality, is that with the former, a man pursues his own advantage openly, frankly and honestly, whereas with the latter, he does so hypocritically and under false pretenses. Justice, fairness and process are often masks for crass self-interest in any ideology, but if those are the only allowable stated objectives, policy discussions ignore the elephant in the room: self-interested behavior.

Invariably, groups created with idealistic goals become self-interested bureaucracies, because there are weak incentives for an unquantifiable goal like helping poor students, but clear direct payoffs for self-interested behavior. Top-down objectives for social justice become untethered from the actual objective of those in the institution, such that everyone operates within a significant lie. This makes small lies easier; integrity is weakened when one's mission statement is fraudulent. Thus, there is little trust and great corruption in the post-Soviet Union economies that operated for decades under the lie that all these selfish bureaucracies were putatively serving “the people,” which everyone knew was untrue. Though a process of learned helplessness, people figured out hypocrisy was not only part of life, but also central to succeeding on this earth. The bourgeois virtues of honesty, industry, and intellectual courage diminished.

In the 1950s, one could rationally prefer the top-down approach because while on some level there has always been lots of data—no one washes a rented car—at the level of the state there was little: no one knew of the Soviet famines and executions in the 1930s, while everyone could see the effects of the Depression. Yet now the results are quite clear. The failures of socialism and welfare policies to create prosperity or liberty highlight that a system focused on equality generates only shared poverty for the masses and lack of freedom, while a system focused on liberty generates prosperity and freedom. Top-down efforts to create *eudaimonia*, human flourishing, do the opposite, and as Solzhenitsyn foresaw in *The Gulag Archipelago* following the brutal genocides of communist regimes: ‘No, no one would have to answer. No one would be looked into.’ The same could be said for welfare policies that have decimated American inner cities over the past 50 years.

The Christian Consilience

Once you accept that we were created it becomes easier to understand our dominating desire to pursue good and fight evil, which is hard to explain via mere evolutionary logic, but mentioned quite early in Genesis. For a mindless replicator, doing good is whatever is in one’s long-run self-interests, why cuckoo birds kill other bird chicks, baby sharks eat each smaller ones in the mother’s womb. Even the most self-absorbed instinctively rationalize their behavior on some conception of the good, as they know that is the only respectable motive to admit to others if not themselves.

Doing good, via reducing suffering, is a salutary goal, but as a primary objective it fails. If you simply give poor people food and shelter, it enables them to persist in the behaviors that were responsible for their current predicament. Massive food aid to Africa has greatly increased the population but as the food is not produced internally, at some point aid from the developed countries will cease, and so a future famine of historic dimension awaits. Here in the US, helping single-parent families has led to an increase in fatherless homes, and the disadvantages to this group are hard to overcome.

In contrast, love is a feasible end, one that satisfies. The love of God is the key to any Christian purpose, the ultimate motivator because, as the creator of the universe, you can be sure that He will always be there. Profound truths should help you prosper, and to the extent that a worldview is based on an incorrect view of human nature or society, daily refutation generates angst. The most profound truth is that some being created us, and that created things have a purpose. Our purpose is hard-wired into our psychology, and creates a longing to love something greater than ourselves, and following this simple purpose generates a social optimum via invisible hand. Having one grand objective is a greater virtue than having two, because it constitutes a greater rope to which one’s destiny can cling.

Aristotle taught that the purpose of the state was to encourage virtue among its citizens, which, in turn, would cause humans to flourish. Christianity is consistent with this, because its bottom-up focus encourages decentralized decision-making and individual liberty. Christianity neither legislates nor demands virtue; it merely encourages it as part of a loving relationship with God. By making people sublimate their will to that of Jesus Christ, who represents God on Earth, one

becomes more humble, a better spouse, parent, colleague, and friend. The modesty that comes from Christianity is not weakness, but rather, a combination of honesty and intelligence.

The Roman Emperor and Stoic philosopher Marcus Aurelius wrote, “A man’s greatness lies in the consciousness of an honest purpose in life, founded on a just estimate of himself and everything else, on frequent self-examination, and a steady obedience to the rule which he knows to be right.”³⁶ Epictetus (another Roman Stoic) noted that if you want to be good, assume you are bad, which is consistent with the Christian concept of original sin. Christianity in many ways represents Classical virtues with a radically different motive that actually is inspiring (it is not trivial that Nietzsche called Christianity “Platonism for the masses”).³⁷

All major faiths both sublimate the self to something external, but also concentrate on managing and disciplining the self, but only Christianity is motivated by love of a personal God, and achieving the right will is key to a good purpose. Jesus not only serves as a bridge for humans to achieve salvation, His personal nature makes it easier for humans to love Him—and by extension, God. His suffering is evidence that our creator loves us, in that by paying a price it shows he cares for us: if God paid no price for us, it would be difficult to believe that He cares. Jesus’s death and rebirth also symbolizes the struggles every person makes in confronting their own mistaken presuppositions, rejecting them and experiencing the chaos that results, but then finding better ones and being ‘reborn.’ Christ’s death also shows how if you have a good purpose, suffering can be justified. These esoteric aspects of what Jesus represents, functionally, is necessary when you are trying to appeal to a large group that includes a lot of illiterates. The righteous conduct God praises is consistent with the timeless virtues, including such perennials as to know thyself, the golden rule, and an appreciation of the moral equivalence of all men.³⁸

A Christian purpose aligns with our nature so well that it is useful to believe and behave ‘as if’ it were true, and in the history of science, many assumptions that were chosen because they worked were later found to be true. Assumptions often are used as contrivances, what Milton Friedman called “as if” assumptions that are not necessarily true, but just good working assumptions. For example, when the positron and wave-particle duality were both introduced first via “as if” arguments, they emerged from the mathematics used to describe quantum events, ‘as if’ they existed; later, they were found to exist. Scientists believe that dark matter exists because, as happens in our solar system, spiral galaxies move ‘as if’ embedded in some form of translucent matter that keeps the innermost stars from moving much faster than the outermost stars. No one has seen dark matter, only its effects, but scientists are certain it exists because the cosmos move ‘as if’ it does.

If you focus first on yourself, next on your family, and then on your neighbors and colleagues, your focus forms a concentric circle based on their proximity. If you focus first on the neediest, that causes your focus to leapfrog out of this concentric circle to groups external to your circle of friends and family. On a purely utilitarian basis, the latter approach seems to dominate because it provides more for those who need it most. Yet the leapfrogging focus demands one truly cares about abstract people more than people one knows intimately, which is counter to our human nature, as the neurotransmitters that underlie pair-bonding are activated by physical contact.³⁹ Perpetual aid for those on the edge of subsistence increases the population of targeted groups,

and does not create sustainable prosperity and flourishing. Focusing on those in your immediate circle, including yourself, has the advantage of being manageable, in that you receive feedback on how well you are doing, and achieve a deeper contextual understanding of what is needed. It is the serenity prayer in action.

The very best thing that people can do for the whole world is to make the most of themselves and those close to them. This is why the Axial age religions have provided so many with good guidance, for example, focusing on mundane virtues, because a society prospers according to the virtues of its citizens, in which they take responsibility for themselves. Your attitude towards yourself is paramount because we really love our neighbor as ourselves; we do unto others as we do unto ourselves. Evil is primarily the result of arrogance (lack of humility) and resentment (envy), two vices the Bible is very clear to highlight.

The progressive inspired ‘positive’ rights for healthcare, food, education, and housing, are claims on the resources of others backed by coercive bureaucracies. Top-down charity is helpful in a pinch, but as a prolonged policy it is counterproductive and resented. For example, Ben Franklin noted that if you want someone to like you, ask them for a small favor, it shows you appreciate their talents; if you merely give them things, people find it patronizing (they think you are incapable) or a sign of guilt (which means, you probably took more than you are giving). Goods and services received without struggle—and the sense of insecurity that motivates it—leads to resentment, and this leads to a vicious circle of hating the 1% even more; those most in need of help neglect the person who can help them most, themselves.

The Bible is prescient in orienting an individual’s focus in concentric circles from him/herself, to family, etc., all the while avoiding the emptiness of doing it merely for oneself. The first thing a Christian must do is fear God, which means to believe he exists, and understand his awesome nature. Next one needs to love and obey God out of that love. As God does not speak directly to most people, this means making yourself a better person, not out of narcissism or self-interest, but rather, in order to look better to someone beautiful who loves you. In contrast, Freudian psychoanalysis centers on fixing oneself for oneself by getting rid of unconscious repressions that often were attributed to religion. This kind of thinking failed because that focus did not soothe, but inflamed us, as the more we thought about ourselves, the more we thought about how others had wronged us. The motivation, the heart, is key.

Our ability to know good and evil is what makes us most like our creator, and we were created in his image. The greatest human achievements in science and art are lame relative to a god that can create living organisms, but our moral sense, our ability to see and pursue the good, generate a sublime achievement that He appreciates, why God is more interested in our faith and love than any other aspect of our character. It is proper to express gratitude towards our creator, and by our actions please him. This is not obsequious, simply a rational response, in the same way a good dog will find his life improved if he serves his master well. In Christianity, the perfect is not the enemy of the good, because it assumes that all people are imperfect, that such is the crooked timber of humanity. A Christian does not expect heaven on Earth, in that people are basically evil, yet God loves us anyway if we love Him; those who will not or cannot see their evil nature will be punished by God, so we do not have to worry too much about other people.

Dan Buettner found longevity hotspots around the globe, in small communities in places as diverse as Costa Rica, Japan, and Italy, and found a strong sense of purpose was common in all of these places.⁴⁰ Victor Frankl wrote about how those who survived in concentration camps felt a strong sense of purpose, and this finding seemed to confirm that hypothesis.⁴¹ If you find a community of people with a shared sense of purpose, whose values inspire virtuous conduct, and whose relationships provide support, guidance, and encouragement, your life will be better. Thus it should come as no surprise people who attend religious services on a weekly basis are nearly twice as likely to describe themselves as ‘very happy’ (45%) than are people who never attend (28%).⁴² It would seem obvious that it is beneficial to become religious if we judge ideas on what they make of men. Pascal’s wager would be amended from the focus on the afterlife, to one on the current life.

Poor areas tend to be more religious, not just across countries, but across counties in the US, whereas prosperous areas tend to be more educated and less religious (Mississippi, one of the poorest states in the US, has the most churches per capita). Relatively prosperous people are also happier, yet within these prosperous cohorts, religious people are happier. This creates a true paradox: at the margin, an increase in prosperity causes more happiness and more atheism, but given any level of prosperity, religion increases happiness. Educated people today choose atheism because religion seems logically absurd, as it was wrong on heliocentrism and now seems to contradict evolution. Among the academics who teach young people, the proportion of progressives increases the higher you go in those hierarchies. Progressives continue to argue, ever more angrily, that evolution is a fact, and actually ban ID from high school curricula. However, secular humanism is not rational because it does not understand how economics, psychology, and history show the dominance of the Christian life over the progressive approach here on earth. The inconsistency of means to ends for progressives guarantees failure, just as the Soviet Union and Venezuela were guaranteed to fail.

Coda

In Jerry Coyne’s *Why Evolution is True*, he writes ‘the battle [for evolution] is part of a wider war, a war between rationality and superstition. What is at stake is nothing less than science itself and all the benefits it offers to society.’⁴³ Wars, alas, are not known for their rationality, rather their propaganda to maintain popular support. In the 1930s the mathematical models of evolution thought single mutations could alter genes in such a way to create a new trait, and such changes were normally distributed in terms of ‘fitness.’ We now know such changes are almost always detrimental, and for a gene to acquire radical new function takes hundreds of specific mutations, many in concert. The mechanism to create novel protein complexes is a miracle, its mechanism unknown, whether God or evolution did it.

Science and rationality are tools of the will, and become more tendentious and tortured when those applying it assume by definition their rationality is uniquely objective. Atheists are preoccupied with convincing people that evolution is a fact because they know that evolution is key to keeping progressive thought dominant. Their hegemony is more important than any other principle because their goal is to accelerate the arc of social justice to minimize suffering, and that can only come from confidence in top-down policies over individual moralizing (which is

evil), why American atheists have a more favorable view of Islam than Protestants, even though Islam is much more repressive on all the social positions it abhors in Christianity (Evangelical Christians, not Muslims, are blocking progressive policies in the USA currently, the principle is merely power).⁴⁴

Like all untrue foundational insights, the evolutionary mechanism becomes more complicated the more we see. As the appearance of design becomes stronger, expect greater division, because doubt breeds anger. That is, no one holds with fervor that 7 times 8 is 56, because it is known that this is the case; fervor is necessary only in commending an opinion which is doubtful. They have reason to be concerned, because as Bertrand Russel noted, evolution as a theory is strictly an empirical issue, looking at detailed considerations, and as with all bad theories, the more data we have, the convoluted the theory becomes (in contrast true theories become clearer with more data). The contempt and ridicule directed at intelligent design intimidates young people to concede evolution, yet given evolution as a fact it is harder to believe anything in the Bible is true and thus useful.

I was a secular humanist most of my life, contemptuous of Christianity because most people I esteemed were contemptuous of Christianity, in that smart, educated people were more sophisticated than bible-spouting rubes. This was pride, the most common human vice. Human science and art reflect our genius, and their successes were built upon bold individuals. Yet, after learning about the incredibly precise nano-machinery in the cell, and how microevolution does not extrapolate macroevolution, and all the failed examples and predictions of evolution, I became convinced that something created us. It was only then that I decided to take seriously the arguments of Christians like Kierkegaard, C.S. Lewis, Tim Keller, and even the Bible itself, and was amazed at the wisdom in these writings. The idea that Christianity was merely a useful myth for giving ignorant individuals meaning, and preventing them from stealing and murdering, was not true, although that is what my secular humanist worldview told me.

The focus on the will over reason, classical liberalism, classical virtues, love as the primal motive, that humans are by nature base, shows that the New Testament is right on *all* the issues that really matter. At the personal level, and for creating a thriving society, Christianity works. The emphasis on the will, that love of God is more important than what you do, is uniquely Christian, and uniquely profound.

The key to Christianity is the heart, to love God, and therefore, to want to serve Him, and you can only love something you are sure loves you as well. The 1 Corinthians 13 verse—‘love is patient, love is kind...’—often read at weddings is not mawkish, rather foundational.⁴⁵ True love, like my love for my daughter, is something about which I am certain—that I love, and am loved by, my daughter—and it gives me intense joy and purpose.

The New Testament argues that God is love, why our loving relationships dominate our noblest achievements in satisfaction. When we feel love and express it through compassion, caring, empathy, serving, supporting, encouraging, and much more, the power of God’s love within us creates a sense of joy and fulfillment that goes beyond the definition of happiness. Loving relationships make us feel complete—in our Creator, spouses, children, friends, and even

enemies. All the other ends people seek like status, power, wealth, and sex are preoccupations until acquired, then we think about everything else. Love is the only end not like that.

No non-human animal understands reality, not just animals that have no sense for light or magnetism, but no awareness of the strong nuclear forces in atomic nuclei. It seems likely that humans also do not perceive or understand the totality of forces at work in the universe. Nonetheless, we can infer transcendent forces indirectly, and most of our knowledge is inferential, not deductive. That is, we see a universal human desire for purpose and doing good, the benefits in this world of living for the next by focusing on our own virtues and vices and the evidence of a creator; it is most likely that a creator gave us our various instincts. It is our duty to recognize that there are things that we cannot understand, as Schopenhauer stated ‘every person takes the limits of their own field of vision for the limits of the world,’ not recognizing they do not see everything. It would be irrational to presume the universe is constrained to what we can demonstrably prove.

At some level, this requires faith, as something able to create life clearly is outside of anything for which I have direct evidence. Paradoxically, faith can be rational.⁴⁶ There is evidence of a creator, and the Christian creator’s message works best in this life, as it gives one a profound motivation for adopting standard stoic virtues and bourgeois morality. If you estimate rationally, there is a sufficient probability (e.g., 73%) that Christianity is true, it makes sense to act as if Christianity is 100% true. This is because, in any strategy that takes persistence, once you make the choice to do it you should be ‘all in.’ In the words of a famous short green deist, ‘Do, or do not, there is no try.’

Faith motivates us to use our will to navigate life’s challenges. It entails choosing to trust, cling to, and depend upon someone greater and more powerful than ourselves, in believing there is profound existential wisdom in a book written before we had modern science. In that sense, faith is primarily an act of will in which we choose not to allow events or circumstances to drag us down because we have a relationship with God and He is in our lives to help us. Faith strengthens us to face life’s obstacles, and this produces deep peace and inner happiness. Faith is essential for a happy life.

My previous attempts to create meaning within the secular humanist worldview were not failures because I did not try hard enough, but rather because you need a lot of luck to do this without God. That is, I have no doubt that there are many, millions in fact, who are happy and contented without God. If you are excellent at something and content in simple virtues, if your friends and family are stable and of good character, life can be very satisfying. In a world of 7 billion people, it should come as no surprise that some are able to find this without God, let alone Christ. The success various local demographics across the world highlight some groups can generate *eudaimonia* in this world just as well as any Christian community.

Their success comes from the fact they somehow got into a positive feedback loop where their community that supported them also championed classical virtues that made them better people, highlighting the importance of loving something beautiful, and a community of thriving, virtuous people who look after each other is that; it will make you a better person. Indeed, all the Axial

age religions do a better job of focusing our priorities than does progressivism, and this tempts many who find them attractive to think they all are equally true. Any good practical objective should be robust, in that it should work fairly well if you approximate it.

While the Axial age religions, and many subsequent ones, offer a better purpose in life than trying to create one yourself, not all the major faiths can be true, as they are contradictory. They could all be untrue, just correct on, say, the importance of the golden rule. However, if there is a creator, Christianity may work best precisely because it actually is true. Christianity places unique emphasis on the heart, a motivation based on the fear and love of God, and the gratitude generated by appreciating such a God leads to greater happiness in this world. I will not find my purpose by adopting the worldview of some village in Costa Rica. That would not work primarily because I have no social connections in such a village, and without those relationships, the whole thing does not work at all, even if it works for them. Most importantly, if Christianity is true, those salubrious non-Christian worldviews will not work in the afterlife, which is more important than anything we experience here on Earth.

We were given a unique ability to choose our purpose, and that choice alone is important to God, which should make sense, because anything powerful enough to create us is unimpressed by our worldly achievements, which are technically trivial to such a being. Having the ability to understand life a little bit the way God does, yet subordinate our will to glorifying him, pleases him. Life is a test, and as Lincoln said, the best way to test a man's character is to give him power. We all have the power to choose what to serve and to love, and most choose a secular focus out of pride, our greatest sin.

The purpose of life is to practice *virtue* inspired by the *love* of someone *beautiful*. The object from which one is seeking esteem should be beautiful, in that it inspires healthful behavior in us—virtue—and we find satisfaction in its appreciation. It must be a conscious entity, because we need it to appreciate our love as only a person can. It must be long-lived, because a beautiful thing that may end soon cannot sustain hope. Love, meanwhile, is the only end in itself that endures and is never sated, though it requires reciprocation, meaning, the transcendently beautiful love object needs to appreciate and reflect love. A good life is a synchronicity of behavior and thought motivated by love that advances something noble, in that achieving one's higher destiny helps humans flourish. There's no better example than loving the creator God described in the New Testament.

¹ Hereafter I denote the 'argument from design' aka 'intelligent design,' as ID, the theory that life, or the universe, cannot have arisen by chance and was designed and created by some intelligent entity. 'Evolution' and 'evolutionist' the theory and those who believe in the theory, that all life on Earth descended from some primal organism(s) that arose at least 600 million years ago, via strictly natural processes of descent with modification, mutation, and natural selection.

² P.Z. Myers, a professor of biology, blogs at Pharyngula and regularly calls those he disagrees with f*ckheads or a**holes, while on Larry Moran's Sandwalk, he refers to ID advocates as IDiots, and rarely ends a critique of an ID statement without a gratuitous *ad hominin*.

³ Density fluctuations create galaxy clusters, galaxies, stars, and planets, meaning the universe had density fluctuations in a fractal pattern at different special dimensions when it went through inflation to create the modern

universe we see. Yet, at larger dimensions that cover several galaxy clusters, the average density of galaxies is the same throughout the universe, and does not change with distance or direction, what is called the Cosmological Principle. Temperatures across the universe vary from an average of 2.725K by only 0.004 K. Roger Penrose calculated the fine tuning in the initial state of the universe to be $1:10^{10^{123}}$. The fine tuning of the physical constants of the universe necessary for our lives to exist include the following staggering numbers:

Ratio of electrons to protons:	1: 10^{37}
Ratio of Electromagnetic Force to Gravity:	1: 10^{40}
Expansion Rate of Universe:	1: 10^{55}
Mass Density of Universe:	1: 10^{59}
Cosmological Constant:	1: 10^{120}

There are many other such ratios, but these are the most extreme. From Ross, H. *Big Bang Refined by Fire*, 1998.

⁴ White, Nicholas J. "Antimalarial drug resistance." *Journal of Clinical Investigation* 113.8 (2004): 1084.

⁵ <http://www.millerandlevine.com/evolution/behe-2014/Behe-3.html>

⁶ Whether or not Huxley actually said this, the argument has often been made in support of Darwinism, as when Richard Dawkins employs the typing monkey concept in his book *The Blind Watchmaker* to demonstrate the ability of natural selection to produce biological complexity out of random mutations.

⁷ He actually stated in a 2006 interview: "If you have incremental adjustment, you can go from any degree of simplicity to any degree of complexity given enough time" (14:55 <https://www.youtube.com/watch?v=dEyJ9g-Op4A>).

⁸ The TalkOrigins website that defends evolution noted that Dawkins only meant this to demonstrate cumulative selection vs. single step selection, but this does not make sense. A mechanism off by that order of magnitude is not a good analogy, it does not extrapolate, and more than extrapolating the idea that because I can jump off the ground, the same process can get me onto my roof. http://www.talkorigins.org/indexcc/CF/CF011_1.html

⁹ Dawkins writes about eye evolution as follows: "Mucus forms in a recess that contains light sensitive cells, which creates a lens, which morphs into a tissue lens. A skin is formed over the lens. I think, if we carry on, I can generate the human eye. Thus, we've proved in principle simple evolution can create new organs, etc."

¹⁰ Below are the problems with these standard evidences of evolution:

Fossil record (whales, birds/reptiles, human). Data on this have merely gotten worse, as the horse example Darwin gave now shows a rather small change in the horse over the past. An Eocene bat looks like a modern bat, and ancient elephants and giraffes look like modern elephants and giraffes.

"All paleontologists know that the fossil record contains precious little in the way of intermediate forms; transitions between major groups are characteristically abrupt. Gradualists usually extract themselves from this dilemma by invoking the extreme imperfection of the fossil record" (Gould, S.J., *The Panda's Thumb*, 1980, p. 189).

"We have already argued that that the fossil record flatly fails to substantiate this expectation of finely graded change" (Eldredge, N. and Tattersall, I., *The Myths of Human Evolution*. Columbia University Press, 1982, p. 163).

Evolution in real time (finch beaks): In the Galápagos finches, average beak depth reverted to normal after the drought ended. There was no net evolution, much less speciation. Finch beak variation does not accumulate to create the great variety of clades, it just produces different allele distributions, slightly different species that perhaps develop some point mutations:

"In claiming that species typically undergo no further evolutionary change once speciation is complete, they are not claiming that there is no change at all between one generation and the next. Lineages do change. But the change between generations does not accumulate. Instead, over time, the species wobbles about its phenotypic mean. Jonathan Weiner's *The Beak of the Finch* describes this very process" (Sterelny, K. *Dawkins vs. Gould: Survival of the Fittest*. Cambridge, U.K.: Icon Books, 2007, p. 96).

Vestigial organs (e.g., appendix): In chapter 13 of his *Origin of Species*, Darwin discussed what he called "rudimentary, atrophied and aborted organs." He described these organs as "bearing the plain stamp of inutility (uselessness)" and said that they are "extremely common or even general throughout nature." Darwin speculated that these rudimentary organs once served a function necessary for survival, but over time that function became either diminished or nonexistent. In 1893, Robert Wiedersheim wrote a book on human anatomy and its relevance to man's evolutionary history, which contained a list of 86 human organs that he considered vestigial. Currently

we are at about 6: the tailbone, male nipples, erector pili and body hair, wisdom teeth: this list might go down. There simply might be constraints in the nature of our body plan that necessitate them.

Embryo development shows evidence of common ancestry (limbuds): Early data suggested Haeckel's claim that ontogeny recapitulates phylogeny, that is, the development of an organism from egg to maturity (ontogeny) looks like the development from the earliest ancestor to modern forms (phylogeny). Haeckel's drawings were shown to be frauds in 1921 (Garstang, W. 1922. The theory of recapitulation: A critical re-statement of the biogenetic law. *Journal of the Linnean Society of London, Zoology* 35, 232: 81-101.

"The core scientific issue remains unchanged: Haeckel's drawings in 1874 are substantially fabricated. In support of his view, I note that his oldest 'fish' images are made up of bits and pieces from different animals—some of them mythical. It is not unreasonable to characterize this as 'faking'...Sadly, it is the discredited 1874 drawings that are used in so many British and American Biology textbooks today." (Evolutionist M. Richardson's letter to *Science* 281 (5381); 1289 Aug 28, 1998, entitled "Haeckel's Embryos, continued").

A larger problem than the tendentious drawings of embryos and cherry-picked species for Haeckel's comparisons is that the earliest stage of vertebrate embryos are more different, which makes the later stage similarity more a constraint in morphological development than evidence of a shared embryonic past.

Bad design (eye wiring, recurrent laryngeal nerve):

The eye:

"It betrays its origin with a tell-tale flaw: the retina is inside out. The nerve fibers that carry the signals from the eye's rods and cones (which sense light and color) lie on top of them, and have to plunge through a large hole in the retina to get to the brain, creating the blind spot. No intelligent designer would put such a clumsy arrangement in a camcorder, and this is just one of hundreds of accidents frozen in evolutionary history that confirm the mindlessness of the historical process" (Dennett, D. 2005. "Show me the science." *The New York Times*, August 28).

Because of continuous damage caused by light, the discs (along with the photopigments) of the photoreceptor cells are replaced continuously by the retinal pigment epithelium (RPE). If this were not the case, the photoreceptors would quickly accumulate fatal defects that would prohibit their function. In addition, the RPE cells contain the pigment melanin, which absorbs stray and scattered light to improve visual acuity. The RPE is in contact with the choroid layer, which contains a very large capillary bed, which has the largest blood flow per gram of any tissue in the body. Why is the blood flow so high in the choroid? Since the RPE and photoreceptor cells are in constant regeneration, they require a high rate of exchange of oxygen and nutrients. See Wirth, A., Cavallacci G., Genovesi-Ebert F. 1984. The advantages of an inverted retina. A physiological approach to a teleological question. *Dev. Ophthalmol.* 9: 20-28. Kennon Guerry, R., Ham, W.T., Mueller, H.A. 1998. Light toxicity in the posterior segment. In Tasman W., Jaeger EA. (eds.), *Clinical Ophthalmology*. New York: Lippincott-Raven, vol. 3, chap. 37. The blind spot, meanwhile, is trivial. It's fun to show to people because we hardly notice it.

Recurrent Laryngeal Nerve:

As per the recurrent laryngeal nerve, called "one of nature's worst designs," by Jerry Coyne (p. 82, Coyne, J.A. *Why evolution is true*. New York: Penguin, 2009). See Richard Dawkins here noting it in the giraffe, where it travels several feet longer than seems necessary: <https://www.youtube.com/watch?v=cO1a1Ek-HD0>

The *Nervus laryngeus recurrens* innervates not only the larynx, but also the esophagus and the trachea, and moreover, "gives several cardiac filaments to the deep part of the cardiac plexus," etc. (the latter not shown below, but see quotations above). The fact is that even in humans, in 0.3 to 1% of the population, the right recurrent laryngeal nerve is indeed shortened and the route abbreviated in connection with a retromorphosis of the fourth aortic arch. If mutations for such a shortcut are possible and appear regularly, even in humans (not to mention some other non-shorter-route variations)—according to the law of recurrent variation (see Lönning 2005: <http://www.weloennig.de/Loennig-Long-Version-of-Law-of-RecurrentVariation.pdf>, 2006: http://www.weloennig.de/ShortVersionofMutationsLawof_2006.pdf), they must have occurred already millions of times in all mammal species and other vertebrates taken together from the Silurian (or Jurassic respectively) onwards. And this also must be true for any other (at least residually) functionally possible shorter variations of the right, as well as the left, recurrent laryngeal nerve. Inference: All of these "shortcut mutations" were counter-selected regularly due to at least some disadvantageous and unfavorable effects on the phenotype of the individuals affected.

“As the recurrent laryngeal nerve curves around the subclavian artery or the arch of the aorta, it gives several cardiac filaments to the deep part of the cardiac plexus. As it ascends in the neck it gives off branches, more numerous on the left than on the right side, to the mucous membrane and muscular coat of the oesophagus; branches to the mucous membrane and muscular fibers of the trachea and some filaments to the inferior constrictor [Constrictor pharyngis inferior].” <http://www.weloennig.de/LaryngealNerve.pdf>

Biogeography (life on new islands):

The field of biogeography is concerned with the distribution of species in relation both to geography and to other species. The similarity of animals and plants on the Galapagos Islands presumably shows animals migrated over temporary isthmuses or were blown out to sea. Many who believe life was created by an intelligent designer, including myself, do not believe the earth was created 5000 years ago with all the present geographies laid down with arbitrary species. It seems reasonable that similar species would exist near each other and follow migration patterns available to them. In any case, the hypothesis is rather weak. It argues that if organisms in one area are descended from organisms in another, then there must have been some migration route by which organisms could move from one to another. If there is no such route, then it is consistent with the tectonic history of islands and continents. Therefore, whatever we see is consistent with it: recent migration or plate tectonics.

Homologies between species (bones of bat, ape hands):

Darwin reasoned that the members of the same class of animals resemble each other in the general plan of their design and, in his words, this resemblance is critical because of the fact that “the hand of a man, formed for grasping, that of a mole for digging, the leg of the horse, the paddle of the porpoise and the wing of the bat” are all “constructed on the same pattern” and “include similar bones in the same relative positions;” this is specifically what the theory of common descent would expect. Further, there are often different developmental pathways for homologous structures. Similar bone patterns in different species (i.e., homologies) arise from different sequences of cartilage condensation. In the words of biologist Richard Hinchliffe:

“Embryology does not contribute to comparative morphology by providing evidence of limb homology in the form of an unchanging pattern of condensation common to all tetrapod limbs.” (Hinchliffe, R. 1990. Towards a homology of process: Evolutionary implications of experimental studies on the generation of skeletal pattern in avian limb development. *Organizational Constraints on the Dynamics of Evolution*: 119-131.)

That homologous structures can be produced by different developmental pathways contradicts the prediction of universal common descent. As one paper put it, it is “the rule rather than the exception” that “homologous structures form from distinctly dissimilar sites.” (Pere Alberch. 1985. Problems with the interpretation of developmental sequences, *Systematic Zoology*, 34, No. 1, pp. 46-58.

A commonly used structure, such as having pentadactyl limbs, would also be the signature of a designer. All cars have nuts and bolts, use rubber and steel. Bicycle and wheelbarrow tires are round because this design is superior for the function of most tires, and the tire homology does not prove common descent, but rather common design because of the superiority of the round structure for rolling.

Molecular phylogeny:

It should come as no surprise that species that look the same have similar DNA given no one disputes DNA is intricately related to morphology. The initial phylogenetic tree was developed via morphology, and it was thought the ability to sequence DNA would make this less ambiguous. Alas, ambiguities remain.

The evolutionary tree from DNA is not clearer than that for simple morphology. (Harold, F.M. 1995. From morphogenes to meorphogenesis. *Microbiology 141*: 2765-2778.). The phylogenic tree based on morphology is different than one created via molecular phylogeny. (Aguinaldo, A.M.A., Lakes, J.A. 1998. Evolution of the multicellular animals. *American Zoologist* 38,6: 878-887. Different genes generate different trees. Different labs generate different trees for the same gene. (Winnepenninckx, B., et al. 1995. 18S rRNA data indicate that *Aschelminthes* are polyphyletic in origin and consist of at least three distinct clades. *Molecular Biology and Evolution* 12,6: 1132-1137. A typical researcher finding is as follows:

“I’ve looked at thousands of microRNA genes, and I can’t find a single example that would support the traditional tree,” they said. [My new] technique “just changes everything about our understanding of mammal evolution.” <http://www.nature.com/news/phylogeny-rewriting-evolution-1.10885>

There are incongruences between phylogenies derived from morphological versus molecular analyses, and between trees based on different subsets of molecular sequences have become pervasive as datasets have expanded rapidly in both characters and species. (Liliana M. Dávalos, L.M. Cirranello, A.L., Geisler, J.H., Simmons, N.B. 2012. Understanding phylogenetic incongruence: Lessons from phyllostomid bats. *Biological Reviews of the Cambridge Philosophical Society*, 87:991-1024).

¹¹ The flagellar protein is FliK and a protein from the T3SS is called YscP.

¹² Gauger, Ann K., and Douglas D. Axe. "The Evolutionary Accessibility of New Enzymes Functions: A Case Study from the Biotin Pathway." *Bio-Complexity* 2011 (2011).

¹³ <http://www.nytimes.com/2007/07/01/books/review/Dawkins-t.html>

¹⁴ It is interesting to remember that Darwin sat on his theory for 20 years, primarily because he could envisage new species occupying a new niche, but there it would stay. It would not create the entire tree of life, just jump onto some new vista, and forever be the same, as most populations are. It was only after Alfred Wallace, the lesser known co-discover of the theory evolution, wrote Darwin and told him about how Thomas Malthus’s argument that populations grow geometrically implies a constant survival of the fittest, that Darwin had his eureka moment. Specifically, the mechanism is that because geometric growth cannot persist, there must be a large amount of selection of the fittest in any species, and in that way species evolve continually within a niche. Over time, this leads to better and so different races within the species, a constant force for innovation, as opposed to Darwin’s intuition that novel niches can create novelty, but there it stops. Wallace wrote to Darwin in 1857 about Malthus’s idea:

“Then it suddenly flashed upon me that this self-acting process would necessarily improve the race, because in every generation the inferior would inevitably be killed off and the superior would remain—that is, the fittest would survive.” From *Alfred Russel Wallace: My Life*, pp. 360-363.

Thus, the subtitle of *Origin of Species* is *The Preservation of Favoured Races in the Struggle for Life*, a clear bow to Wallace’s insight. While Darwin had read Malthus in 1838, he did not appreciate it fully, and Wallace showed Darwin how powerful this mechanism would be. Prior to this, Darwin had focused on allopatric speciation, which is where species diverge as they isolate into different geographical areas, unable to interbreed. Motivated by his interest in geological evolution, he spent most of his time up to 1858 explaining how various geographical barriers and linkages created related, but similar, species across the globe. Thus, his early evolutionary theory, while interesting, did not generalize to produce the entire tree of life. Only Wallace’s interpretation of Malthus made that clear. Darwin was allowed to present his theory with Wallace at a July 1858 meeting, and his November 1859 publication of *Origin of Species* was the first book-length treatise articulating the standard evolutionary theory of descent with variation and selection.

¹⁵ Kimura, M. *The Neutral Theory of Molecular Evolution*. Cambridge, 1983. The key to this model was that it generates nicely approximately the same number of novel human mutations since we split off from chimps: 50 million. This is because there are approximately 100 new mutations per generation in our 3 billion long DNA strand. Over an entire population, 100 mutations on average fixate within the population each generation. Thus, given the 500K generations between man and chimp, that is 100 x 500K, or 50 million. This is one evolutionary argument that at least tries to match empirical data.

¹⁶ For example, the gene cystic fibrosis transmembrane conductance regulator (CFTR) protein spans over 100k nucleotides along chromosome 7 in humans, with 28 exons and 26 introns, generating a protein 1480 amino acids long. People with cystic fibrosis usually have a double-mutation in the amino acid in the 508th position, which affects the protein fold, and prior to 1959 the median age of survival was only 6 months. This is because it affects any organ that uses cilia: lungs, sperm, colon, and several others. The CFTR gene is an example of how genes are subroutines used in making many different but related components throughout an organism. Protein coding genes do not create life, they are used to create life.

¹⁷ In 1977, they discovered the spliceosome, which splices some RNAs, a huge conglomerate containing five small RNAs and over 300 proteins, which must be assembled *de novo* and then disassembled at each of the many introns interrupting the typical nascent mRNA. In 1986, biologists discovered RNA editing, by which a cell modifies the subunits in a messenger RNA before translating it into protein—so that the final product is not what would have been predicted from the original DNA sequence. In 2003, biologists discovered the editosome, which

performs RNA editing like the spliceosome and rivals the ribosome in its complexity. RNA editing is a molecular process through which some cells can make discrete changes to specific nucleotide sequences within a RNA molecule after it has been generated by RNA polymerase.

- ¹⁸ Caitlin Uren et al. 2016. Fine-scale human population structure in southern Africa reflects ecological boundaries <http://dx.doi.org/10.1101/038729> The fruit flies can interbreed, however they develop different mating dances and so the females do not recognize the males of a different ‘species’. Some look different, but just as some dog breeds look different.
- ¹⁹ Glazko, Galina, et al. "Eighty percent of proteins are different between humans and chimpanzees." *Gene* 346 (2005): 215-219. <http://sandwalk.blogspot.com/2012/01/whats-difference-between-human-and.html>
- ²⁰ Bill Moyers interview, December 2004.
- ²¹ <http://bigthink.com/think-tank/theres-a-20-chance-were-all-sims>
- ²² In 1632, Galileo published *Dialogue Concerning the Two Chief World Systems*, where he presented his heliocentric astronomical theory vs. the standard theory of Aristotle, in which the Earth is the center of the Universe. In the book, he writes a dialogue between Salviati, who is referred to as “the Academician” and represents Galileo’s own views; and Simplicio (or “The Fool”), who bumbles about and contradicts himself as he ineptly offers a straw-man version of the Aristotelian/Ptolemaic perspective—and, more importantly, represents the Pope’s views. The Pope did not take this well. We now know Galileo was more correct about the nature of the solar system, yet it should be remembered that it was not so obvious then. Galileo’s model was simpler, and explained such things as the fact that Jupiter’s moon’s shadow contradicts the notion that all bodies rotate around the Earth; it also had circular orbits and so needed epicycles, and could not explain why when you drop an object it does not fly away as the Earth’s rotation moves away: they had no understanding of inertia. In short, it was as if a brilliant employee wrote a letter to the editor caricaturing his CEO as a moron, without definite proof. Of course he was censured.
- ²³ *The Education of Henry Adams*. 1906.
- ²⁴ In 1930, William Temple, the Archbishop of York, wrote: “When my Father [Frederick Temple, Archbishop of Canterbury] announced and defended his acceptance of evolution in his Brough Lectures in 1884 it provoked no serious amount of criticism... The particular battle over evolution was already won by 1884.” (Iremonger, F.A. *William Temple, Archbishop of Canterbury: His Life and Letters*. London: Oxford Univ. Press, 1948, p. 491.
- ²⁵ Dennett, *Darwin’s Dangerous Idea*, p. 21.
- ²⁶ This idea is sometimes called “meliorism,” the belief that the world can be made better by human effort, and is often noted as a principle of modern liberalism.
- ²⁷ The moralistic fallacy is to claim humans are like we should be; the naturalistic fallacy is to claim we should be as we are. If you look at the number of men vs. women in intermural sports in college or high school, you can see the strong preference disparity.
- ²⁸ Panksepp, Jaak. *Affective neuroscience: The foundations of human and animal emotions*. Oxford university press, 1998.
- ²⁹ Dr. Michael Gazzaniga, the pioneering split-brain researcher was conducting an experiment with a subject whose corpus callosum (the part that connects the right and left brain) had been severed surgically due to violent and uncontrollable seizures. Dr. Gazzaniga showed an image of a chicken to the man’s left brain and a shovel to his right brain and then asked the man to draw what he saw with his left hand (which is operated by the right brain). He drew a shovel. When Gazzaniga asked the man why he had drawn a shovel, the man came up with a fanciful narrative of chickens and chicken coops and the need to use a shovel to clean up the bird droppings. This led Gazzaniga to have an “ah ha” moment. He knew that the left brain is the linguistic brain. It contains both Broca’s and Wernicke’s areas (which are responsible for generating language). Thus, he reasoned that the voice inside our heads, our internal dialogue, comes from our left brains (especially if we are right handed—although this is also true for some left handed people). Because this man’s left brain only saw the chicken and not the shovel, it had to somehow come up with a way to explain the shovel.
- ³⁰ Sartre, Jean Paul, and Hazel Estella Barnes. "Search for a Method." (1963).
- ³¹ A funny example of this is the freethought movement, which started out as a standard progressive movement, but the freethoughtsblog.com is focused on social justice, especially feminism, and is angry, intolerant and vulgar.
- ³² Try being homosexual or criticizing the government in Cuba circa 1968 when progressives were fawning over Castro. They were put into labor camps. Political dissenters in those countries were often executed.
- ³³ Rauschenbusch, Walter. *A Theology for the Social Gospel*. New York: Abingdon Press, 1917

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- ³⁴ On ethics books, see <http://www.theguardian.com/lifeandstyle/2013/nov/16/change-your-life-unethical-ethicists>. Lewis, Jason E.; Degusta, David; Meyer, Marc R.; Monge, Janet M.; Mann, Alan E.; Holloway, Ralph L. (2011), "The Mismeasure of Science: Stephen Jay Gould versus Samuel George Morton on Skulls and Bias", *PLoS Biol* 9:
- ³⁵ Book 3, *Aristotle's Politics*.
- ³⁶ Long, G. M. *Aurelius Antoninus*. (1862). Harvard Classics, Vol. 2, 1909.
- ³⁷ In contrast, the Epicurean tetrapharmakos is that we should not fear death because when it comes we will not know it, we will be dead.
- ³⁸ Matthew 7:12. "So whatever you wish that others would do to you, do also to them, for this is the Law and the Prophets." 1 Tim. 2:1. "I exhort, therefore, that, first of all, supplications, prayers, intercessions, and giving of thanks be made for all men." 2 Corinthians 13:5. "Test yourselves to see if you are in the faith; examine yourselves! Or do you not recognize this about yourselves, that Jesus Christ is in you—unless indeed you fail the test?"
- ³⁹ Prairie voles without receptors for vasopressin and oxytocin have sperm donor dads, those with the receptors hang around to raise the kids.
- ⁴⁰ Buettner, D. *The Blue Zones: 9 Lessons for Living Longer from the People Who've Lived the Longest*. National Geographic Books, 2012.
- ⁴¹ Frankl, V.E. *Man's Search for Meaning*. New York: Simon and Schuster, 1985.
- ⁴² <http://www.breitbart.com/national-security/2014/12/24/religious-people-much-happier-than-others-new-study-shows/>
- ⁴³ Coyne, Jerry A. *Why evolution is true*. Penguin, 2009.
- ⁴⁴ <http://www.pewforum.org/2014/07/16/how-americans-feel-about-religious-groups/>
- ⁴⁵ 1 Corinthians 13:4-7 Love is patient, love is kind. It does not envy, it does not boast, it is not. It does not dishonor others, it is not self-seeking, it is not easily angered, it keeps no record of wrongs. Love does not delight in evil but rejoices with the truth. It always protects, always trusts, always hopes, always perseveres.
- ⁴⁶ James, W. *Will to Believe*, 1896.