

Did Darwin Get It Right? Christianity, Evolution, and the Debate over Origins
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Although the idea of evolution has been around since the ancient Greeks, Darwin’s Origin of Species put the idea at the center of modern thought. The notion that man is no more than a chemical accident has obvious consequences for both religion and morality. This lecture examined the scientific credentials of the theory and whether there is any real conflict between what we know about the history of life and Christian orthodoxy. The following is an outline of Johnston’s talk that sets forth the main points of his presentation.

Introduction

- I should explain how it is that an English major got involved in the scientific debate over evolution and presumes to have anything to say on the subject.
- Attended in-house symposium at the Museum of Natural History.
- There is an acrimonious debate among scientists today about the validity of Darwin’s theory; now by scientists. This debate doesn’t go public because of fear of aiding and abetting the creationists.
- This debate is largely an Anglo-American phenomenon.
- Since evolution touches on profound questions like who we are and where we come from, there are underlying philosophical agendas which skew a lot of scientific writing on the subject.
- Another and quite reassuring discovery was that every aspect of the evolutionary debate is accessible to the layman. All the major writing on the subject, from Darwin and Huxley through Richard Dawkins and Stephen Jay Gould, has been aimed primarily at the educated public.
- There are no arcane mathematical formulas which have not been predigested for the lay person.
- So the field invites trespassers from the humanist camp, and there has been an honorable line of enlightened amateurs—G. K. Chesterton, Hilaire Belloc, Arthur

Koestler, Norman Macbeth—whose common sense criticisms of Darwin have anticipated those of scientists.

Who was Charles Darwin?

- The Darwins and the Wedgewoods were part of the Whig meritocracy that had benefitted from the industrial revolution and had little use for religion in any but its most attenuated forms.
- Grandfather **Erasmus Darwin** was a famous agnostic: Wrote that Mankind should shake off revealed religion and feed instead on “milk of science.”
- The father, **Robert** was a successful doctor; he was also an atheist and freemason who was very careful to conceal his views about religion; but he did talk to his son Charles about it.
- Now I am not saying that we should judge a scientific theory by the motives of those who propose them; but I am suggesting that Darwin was pursuing an agenda which was not strictly scientific.
- His notebooks, some of which were not published until the 1970’s, make it clear that he wanted, in the words of Samuel Butler to pitchfork God out of the universe.

Prior Theories of Evolution and Darwin’s Work

- It is important to be clear about the fact that evolutionary theory did not begin with Darwin.
- Evolution and Darwinism are not the same thing.
- The idea of evolution has been around since the ancient Greeks.
- It was developed into a scientific theory by the French naturalist Buffon a century before Darwin wrote his book.
- Half-baked theories of evolution were part of the intellectual baggage of progressive Victorians well before Darwin wrote his book.
- Darwin’s epochal contribution was to provide a plausible explanation of *how* evolution happened, and this was his theory of natural selection.

- A simple idea: So simple that Thomas Henry Huxley, when he read Darwin's book, slapped his head and said, "How stupid not to have thought of that!"
- Darwin's theory in a nutshell is that **organisms** produce offspring which vary slightly from their parents, and natural selection will favor the survival of those individuals whose peculiarities (sharper teeth, more prehensile claws) render them best adapted to their environment;
- And this process accounts for the enormous changes we see over millennia.
- Darwinian evolution, then, is a two-stage process: random variation as to raw material, natural selection as a directing force (the latter is also referred to as "survival of the fittest").
- Contrary to popular myth, Darwin did not hit upon his idea of natural selection while observing the animal life on the Galapagos islands in 1835 during the voyage of the Beagle. .
- The "Eureka!" moment came in 1838 when Darwin read Malthus's (d.1834) famous (and discredited) essay on population.
- Darwin's way of thinking was very much influenced by the classical British economists: natural selection works very much like Adam Smith's invisible hand.
- Malthus held that population tends to increase geometrically while food and other resources increase only arithmetically, and that when this occurs there is a struggle for survival in which the weaker classes of humanity suffer and perish.
- Darwin tried to explain the evolution of all forms of life by a similar "struggle for survival." Those offspring that have some small advantage are the ones that survive and multiply.
- Darwinian selection as a theory had an immense and immediate appeal because it is simple, automatic, and utterly mechanistic.
- Biology had been a difficult hold-out from the mechanistic world-view inaugurated by Descartes and given enormous prestige by the discoveries of Newton.
- In the Cartesian/Newtonian world, things behave like billiard balls, they are acted on by blind external forces.

- Once he struck on his theory, he spent a great deal of time observing pigeon breeders at work. The first fifty pages of the *Origin* are mainly about pigeons, which often surprises readers.
- He noticed that through selective breeding, pigeons could be made to develop certain desired characteristics: color, wing span, and so forth.
- Darwin simply extrapolated from his observations of pen-breeding the notion that over vast stretches of time, with nature as the breeding pen, species could evolve into new and different species.
- The whole crux of his theory is extrapolation. But extrapolation, as any statistician will tell you, is a hazardous procedure.
- A crucial distinction has to be made here: What Darwin observed in the pigeon pens was *not* evolution, but variation.
- We've known since at least the time of the ancient Egyptians, who were great dog breeders, that species can subdivide into variants.
- Such variation—or micro-evolution—is common. People, for example, are generally taller today than they were a hundred years ago. The **varieties of finches** Darwin saw on the Galapagos Islands are another example.
- Darwin said that over a long period of time, these micro-evolutionary shifts could gradually add up to **macro-evolution**, which are the really big jumps—say, from reptile to mammal, or reptile to bird. Here we run into problems.

The Fossil Record

- Darwin was perfectly aware that the fossils did not show gradual evolution, that there were no transitional forms between species in the rocks.
- This was not just a matter of filling in the slots between **starfish A** and **starfish B**; there were systematic gaps between all major animal and plant groups.
- Darwin called this “the gravest objection to my theory” and entitled his chapter on fossils, “On the Imperfection of the Geological Record”, in which he stated his firm conviction that future digging would fill in the gaps with transitional forms.
- Notice the circularity here: Darwin claims to be guided by the evidence—by strict, Baconian induction.

- But if the evidence doesn't fit his theory, then the problem is with the evidence, not the theory.
- In any event, Darwin's book sent armies of paleontologists into the folds of the earth; and we now have something like a quarter billion classified fossils—and these fossils still show what they did in Darwin's day: That species appear suddenly in a fully developed state; after that they change little or not at all before disappearing (99 out of 100 species are extinct).
- Otto Schendewold, the most famous paleontologist of the 20th century, wrote that the fossils “directly contradict” Darwin; said that the gaps are not in the fossil record, but in Darwin's theory.
- Steven Stanley, a paleontologist who teaches at Johns Hopkins writes in his recent book *The New Evolutionary Timetable*: “the fossil record does not convincingly document a single transition from one species to another.”
- Stephen Jay Gould of Harvard called this failure of the fossils to show Darwinian gradualism the great “trade secret” of modern paleontology.
- The earth is about 4.5 billion years old: bacteria, which are extremely complicated packages of genetic information, appeared about 3.5 billion years ago.
- The nucleated cell arrived perhaps 1.3 billion years ago; its advent represents the single greatest leap or discontinuity in the history of life.
- For a long stretch of time there is mainly blue-green algae and a few oddities: Then, 550 million years ago comes biology's Big Bang: The Cambrian explosion.
- There was a sudden explosion of complex life forms—mollusks, jellyfish, trilobites—for which not a single ancestral form can be found in the earlier rocks.
- Every major animal phylum, which are the basic body plans (chordates; arthropods; brachiopods) appeared in that explosion.
- All the major body plans appear in a geological flash, and there have been none since.
- Not evolution, but de-volution.

- A man from Mars looking at the subsequent fossil record would say that species are replaced by other species, rather than evolve into them.
- All thirty-two of the major animal groups appear out of nowhere: This is why paleontology went into a long eclipse after Darwin's book came out.
- John Maynard Smith: The High Table of Evolutionary discourse was for several generations controlled by the geneticists, who told any paleontologist who was so rash as to try to insert himself into the discussion, he was told: Go away, dig up another bone, and don't bother the adults.
- But in the seventies, combative paleontologists like Stephen Jay Gould and Niles Eldredge have fought for a seat at the table and there's been a food fight ever since.
- But the point is important: As Eldredge writes in a recent book, *Reinventing Darwin*, the fossils have failed to confirm a key prediction of Darwin's theory, that evolution *had to have been* a matter of minute gradations and that therefore the fossil record must be teeming with transitional forms.

BREEDING EXPERIMENTS

- Since we don't see species changing into others in the fossil record the only other place to look is breeding experiments.
- But here the evidence also goes against Darwin; a breeder can change a species to some extent, but if he tries to go too far, the species in question either becomes sterile or reverts back to type.
- Luther Burbank, the greatest breeder of all time, called this the Law of Reversion to Average.
- Species, as one biologist put it to me, are "hard-edged", they are genetically programmed to remain what they are, while allowing for some ecological adjustment.
- Birds on islands: developmental bottleneck: reduces the amount of genetic information or variability.
- Yet, we are told at the recent exhibit at the Museum of Natural History that this relatively modest phenomenon of different finches on different islands is "evolution in action."

- **Richard Goldschmidt**, a leading geneticist who taught at Berkeley back in the 40's and 50's, spent years zapping fruit flies—fruit flies are the canonical laboratory animal of evolutionists—with X-rays and said that scientists were getting nowhere with the idea that these micro changes lead to brand new species.
- If you have a thousand-point mutation in a fruit fly, a statistical impossibility, it is still a fruit fly.
- Goldschmidt published a famous list of 17 items, including blood circulation, the poison apparatus of a snake, and whalebone, and challenged anyone to explain how they could have evolved on a step-by-step basis.
- Goldschmidt was subjected to a savage campaign of vilification.
- Like Orwell's *1984*: Ten minute hate sessions against Goldschmidt in the fifties and sixties: Niles Eldredge as a Columbia graduate student back in the fifties.
- But starting in the seventies, Gould and other evolutionary thinkers have tried to revive Goldschmidt, saying that he was on the right track after all in saying that micro changes don't lead anywhere, they do not and cannot add up to big evolutionary jumps.
- This brings us to the subject of the origin of complex organs.

COMPLEX ORGANS

- If natural selection *were* the mechanism for major changes, then *every* intermediate form must be useful to the organism.
- But as Gould has pointed out, what good is 2 percent of a wing or 5 percent of an eye?
- “Irreducible complexity” of organs like the human eye which make an IBM supercomputer look relatively low tech.
- The biochemical process that turns incoming photons into images ... Remove one step and the entire process breaks down.
- THE NECK OF THE GIRAFFE: If a long neck is such an evolutionary advantage, why was the giraffe the only quadruped to develop it? And why are female giraffes two feet shorter on average than male giraffes?

- To pump blood eight feet up to the head, the giraffe has to have extremely high blood pressure reform of entire cardio-vascular system.
- But this creates a serious problem: when the giraffe bends its head to the ground to drink, the blood pressure would cause the vessels to burst and the giraffe to black out. To cope with this, giraffes have a complex system of pressure sensors along the neck's arteries which cause breakers to kick in and control the amount of blood which reaches the neck.
- [To get from reptile to bird: follow Macbeth in *Historia Natura*. The development of feathers, which are very complicated objects; reform of the respiratory system; reform of the skeletal systems, with the bones becoming porous, hollow, and in many ways fused; reform of the digestive system to allow increased fuel consumption while economizing on weight; reform of the nervous system, especially the brain and the eyeball; construction of bills and beaks; mastery of nest-building; and finally, acquisition of flight and honing capacities. Any one of these components would be hard to visualize, but when all have to go forward together while keeping the organism in operation at all times, the difficulties become overwhelming.]
- Gould and Eldredge: in *Paleobiology*: “Smooth intermediates ... are almost impossible to construct, even in thought experiments; there is certainly no evidence for them in the fossil record (curious mosaics like *Archaeopteryx* do not count.”)
- Creationist literature: Here, explain *this*!
- The wonders of nature: The defense mechanism of the bombardier beetle (which ejects a noxious spray, powered by a small charge of high explosive), the bat ultra-sonar, the suckling apparatus of a mother whale;
- Darwinists when confronted with these wonders simply repeat “NATURAL SELECTION, NATURAL SELECTION” like a mantra.

NATURAL SELECTION

- Hilaire Belloc: Science did not need Darwin to tell it that if there is a flood, the cows will drown and the fish survive. The question is whether this is the mechanism for major evolutionary changes.
- Natural selection simply eliminates things which don't work.

- Darwinists like Richard Dawkins say that natural selection is creative because it preserves the favorable.
- But there is an intellectual sleight-of-hand going on here.
- **The destruction of the unfit, which is all that Natural Selection does, does not explain the origin of the fit.**
- To say that Natural Selection explains anything is a little like answering, “Because the gardener did not cut them away,” to the question, “Why are there leaves on the tree?”
- Lovtrup: “Nobody ever demonstrated that natural selection can bring about anything but events which are trivial from an evolutionary perspective.”
- Put another way, nobody has observed natural selection producing new genetic information.
- Natural selection can explain why polar bears with their white fur have an easier time surviving in the arctic snows: But it is another matter to claim that it can build a bear from scratch.
- This is important because as Darwin himself said his *Origin* is “one long argument” that evolution has occurred by means of natural selection.
- Some of the sharpest minds of the 19th century: Nietzsche, John Stuart Mill, Charles Sanders Peirce, and John Henry Newman—a bipartisan panel of intellectuals if there ever was one: did not buy the **logic** of Darwin’s argument.
- In the 20th Century, Alfred North Whitehead: If survival is the main criteria for evolutionary success, then inanimate matter ought never to organized itself into living forms.
- “The art of persistence is to be dead. Only inorganic things persist for great lengths of time. A rock survives for 800 million years, a tree for a thousand, *homo sapiens* for fifty or a hundred years.”

OTHER PROBLEMS WITH DARWIN

- It is increasingly evident that most species cooperate or occupy ecological niches which do not compete.

- Predators will actually back off if the numbers of the herd they are feeding on gets too low.
- Increasingly evident that mass extinctions, the so-called Big Five, the most famous of which, the K-T of 62 million years ago, wiped out all the dinosaurs, were a matter of bad luck, not bad genes; the more fit don't gradually crowd out the less fit: everyone gets eliminated in one blow.

HISTORY OF DARWINISM

- *Origin* was published in November 1859; first edition sold out in one day; bombshell; first scientific bestseller.
- Samuel Wilberforce, Bishop of Oxford; biologist T. H. Huxley, Darwin's bulldog.
- The Anglican Church was already a hotbed of skepticism.
- Your average country parson was an amateur botanist and geologist.
- Scientific criticisms: St. George Mivart, Richard Owen, Adam Sedgwick, John Herschel.

THE ECLIPSE OF DARWINISM

- Darwin himself kept backing away from natural selection as an explanation for all natural phenomena; *Origin* went through six editions in his life time.
- Loren Eiseley writes in *Darwin's Century* that a "close examination of the last edition of the *Origin* reveals that in attempting on scattered pages to meet the objections being launched against his theory, the much-labored-upon volume had become contradictory ... the last repairs to the *Origin* reveal ... how very shaky Darwin's theoretical structure had become."
- From the time of Darwin's death in 1882, the theory went into an eclipse for about fifty years ... There is considerable amnesia about this today.
- In the first third of the 20th century, scientists did not believe in Darwin.
- Lucien Cuenot, Hans Driesch, Vernon Kellogg, T. H. Morgan (a geneticist who won the Nobel in 1933), Thomas Dwight of Harvard, Douglas Dewar all rejected Darwin's theory during the first three decades of 20th century.

- “Darwinism is a fiction, a poetical accumulation of probabilities without proof, and of attractive explanations without demonstrations.” *Dictionnaire Encyclopedique des Sciences*.
- The Scopes Trial, which the American popular imagination still regards as putting to rest the whole case against Darwin, took place against this background of general dissent. In 1925, the Tennessee legislature passed a statute outlawing the teaching of Darwin’s theory in the public schools. The ACLU, then as now taking it upon itself to be the legal arm of secular humanism, persuaded a substitute biology teacher in Dayton, Tennessee named Scopes to press the issue.
- The scientific issues were never properly discussed at the trial; a fossil tooth was proffered as the remains of something called “Nebraska Man”, which later turned out to belong to a pig; and William Jennings Bryan made the mistake of allowing his fundamentalist beliefs to be ridiculed on the witness stand by Clarence Darrow, who was a kind of Village Atheist raised to the national level.
- The trial proved nothing about the scientific validity of Darwin’s theory, but it did establish in the American mind the notion that in the debate over evolution the only choice available to the layman is between bible-thumping fundamentalists and Darwin.

RISE OF SYNTHETIC THEORY

- Because of the obvious flaws in Darwin’s theory, the so-called Synthetic Theory, or neo-Darwinism, emerged around 1930. This incorporated genetics, molecular biology and complicated mathematical models, but was still Darwinian at the core and seemed to save the theory.
- Julian Huxley claimed at the time that Darwinism had risen phoenix-like from the ashes.
- But as C. H. Waddington, one of the major biologists of the 20th century, complained: “The whole real guts of evolution— which is how you come to have horses and tigers and things—is outside mathematical theory; you are still left with the vacuous explanation of natural selection.”
- In 1974, Richard Lewontin, the Harvard geneticist, wrote, “WE KNOW VIRTUALLY NOTHING ABOUT THE GENETIC CHANGES THAT OCCUR IN SPECIES FORMATION.”
- Molecular biology: blood-clotting;

- **Gould says in 1979 in Paleobiology that “Synthetic theory is dead, despite its persistence as textbook orthodoxy.”**

DARWINISM TODAY

- Since the Synthetic Theory originally arose in response to the collapse of classical Darwinism, where does that leave us today? “Punctuated Equilibrium” would be the reply of the average biology teacher or science columnist.
- This is the famous hypothesis which Gould and Eldredge came up with in the early seventies, when they and other paleontologists finally threw in the towel and began to insist that we take the gaps in the fossil record seriously.
- According to this theory, small groups of animals break off from the herd, migrate to peripheral locations at the edge of ecological tolerance and mutate very rapidly into “hopeful monsters” who then replace the old herd. Because the changes occur so quickly, there is no fossil evidence.
- Scientists once told us that evolution happens so slowly that we can’t see it, now we’re told that it happens so quickly we can’t see it.
- Gould and Eldredge admit that there’s no direct evidence and the evolution by jerks scenario has plenty of scientific detractors, who point out, for example, that it lacks a mechanism. How, for example, did the bat suddenly find itself with a workable sonar?
- Other camps:
 - a. Those who cling to the theory because they say there is no better explanation.
 - b. Those who dismiss Darwin’s explanation entirely: Darwinism is rejected by most French biologists. Pierre P. Grasse, former president of the French Academy of Sciences and the editor of the 28 volumes of *Traite de Zoologie*, called Darwinism a “pseudo-science” that is either in conflict with reality or cannot solve the basic problems.”
 - c. Those who are agnostic on the subject of origins.
- “We know that species reproduce, and that there are different species now than there were 100 million years ago; everything else is propaganda;”

- Evolution is a reasonable idea, but we are nowhere near a coherent scientific explanation of how a batch of inorganic material morphed itself over billions of years into kangaroos and trilobites.
- Man is a separate mystery altogether.
- The explanatory glibness of neo-Darwinism is unfortunate, since it retards, rather than fosters, intelligent discussion about a fascinating subject.
- Darwinism is a public orthodoxy that must be defended at all costs.

WHY DO DARWINISTS CLING TO THEIR THEORY WITH SUCH RELIGIOUS FERVOR?

- It is a very convenient stick with which to beat on religion.
- Scratch a fervent Darwinist, and you will always find a crusading materialist.
- August Weissmann, Darwin's great German disciple, said that Natural Selection had to be defended in no matter what fantastic fashion because it is the only alternative to design.
- Richard Dawkins: "Darwin made it possible to be an intellectually fulfilled atheist."
- I could go on all evening multiplying such quotations.
- Lewontin, Gould, E. O. Wilson, and Simpson make no secret of their hostility to religion.
- This is why Sir Karl Popper described Darwinism as a "metaphysical research program"—a remark that cuts deep.
- If you cut through all the verbiage: The debate is really not over evolution *per se*, but over **teleology** (*telos*, end): whether nature is purposeful, whether it is directed toward preordained ends.
- Either we are the product of blind chance or we are not.
- Among biologists today there is a teleological taboo that makes Darwin a winner by default.

- “There is no God, therefore it had to be that way.”
- But that’s not science, it is theology.
- *Origin* an oddly theological book.
- Darwin seemed to imagine God to be like an Anglican bishop, and since the spectacle of waste and destruction he saw in places like the Galapagos Islands could not be the creation of such a being, he said that his theory of natural selection was correct.
- I am not here dismissing the idea of evolution: it may have occurred by means of genetic snaps;
- Ho and Saunders *Beyond Neo-Darwinism*.
- There has been a flight to Darwin among intellectuals.
- If you asked the most fashionable academic philosopher today—Richard Rorty: What is man? he would say, and has said, *Who cares?* If you pushed him on the subject he would point you to 19th century science—Darwin, Marx and Freud: Man is a chemical accident, a walking bundle of appetites, a clever ape.
- Peter Singer at Princeton would give you the same answer.
- But these Darwinian acolytes keep running into one very serious obstacle: The **human mind**.
- Darwin and other evolutionists have had problems explaining the human mind.
- Darwin called it the “citadel” which evolutionary theory had to conquer in order to be victorious.
- Can Darwinism really explain the two most important attributes of the human mind (soul): the free will and the intellect?
- Walker Percy put it in his usual sly fashion: Darwin’s *Origin of Species* explains everything except Darwin writing the *Origin of Species*.
- Here we get at the Achilles’ heel of modernism, of Darwin, Marx and Freud.

- All three claimed in one way or another that the human mind is a mere epiphenomenon of matter, a plaything of blind, material forces.
- But if this is true, we cannot trust the any products of the human mind, including books by Darwinists.
- The truth claims of these modern ideologies are self-canceling.
- E. O. Wilson, father of sociobiology, the latest variant of Darwinism: “The human mind was not constructed to understand anything or even itself, but to promote the survival of human genes.”
- If this is true, then what is Wilson doing writing this book? And why should we trust any of its conclusions?

THE CATHOLIC CHURCH AND DARWINISM

- When the *Origin* was published, the Church, probably thinking that one Galileo Affair every 2,000 years is enough, was silent.
- The *Origin* was never put on the Index of prohibited books, nor was any scientific book about evolution.
- Finally, in 1950, Pius XII, in the encyclical *Humanae Generis*, in very cautious language, pointed out that the theory of evolution had not been fully proved, but he did permit discussion of the subject.
- He forbade polygenism, the idea that we are descended from more than one original couple.
- This seemed like an extreme position at the time, and even some Catholic theologians wagged their finger: The Magisterium is being very obscurantist, very reactionary.
- But now science seems to be backing the idea: Mitochondrial DNA.
- John Paul II: General audiences on the subject of creation in 1986 and the famous letter to the Pontifical Academy of Sciences in 1994.
- He says that the idea of evolution, properly understood, is compatible with Catholic doctrine so long as divine causality is not excluded from the picture.

- He also reiterates what his predecessors Leo XIII and Pius XII had said: The book of Genesis was not meant to teach science.
- The Book of Genesis was never meant to teach science; it was written in an archaic, pre-scientific Hebrew idiom.
- The author of Genesis could not have said that the universe is 12 billion years old because the ancient Hebrews did not have a word for one billion.
- Genesis is not a textbook in astrophysics, nor a textbook in geology.
- Can you read the Book of Genesis from the standpoint of semantic literalism?
- Yes, if you want to; but you are going to run into problems.
- A literal reading of the bible suggests to many creationists that the universe is six thousand years old; if that were true, we could not see the Milky Way, the light would not have reached us yet.
- “The Church is not afraid of scientific criticism. She distrusts only preconceived opinions that claim to be based on science, but which in reality surreptitiously cause science to depart from its domain.”
- Darwin, Marx and Freud all snuck philosophy in the back door in the middle of the night and passed it off as science in the daylight.
- One of the great services of Catholic thinkers—I am thinking especially of Jacques Maritain and Etienne Gilson—was to blow the whistle, to show us that some of what passes for modern science is really a disguised metaphysics.
- We may be on a journey from Aristotle to Darwin and back to Aristotle.