
TRUTH AND MYTH ABOUT DARWINISM AND CHRISTIANITY

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I am deeply conscious of the honour bestowed on me by the invitation to give the James Gregory Lecture and I would like to thank all the organizers for having made this event possible. When Eric Priest suggested that I might speak on truth and myth in relation to Darwinism and Christianity I readily agreed. But neither Eric nor I could have anticipated what a propitious title this would turn out to be. Within weeks of my receiving the invitation the topic of myth became suddenly more topical with the appearance of A. N. Wilson's controversial biography of Darwin. Wilson's title, *Charles Darwin: Victorian Mythmaker*, put the word "myth" in neon lights. Despite the brilliance of much of Wilson's writing he has successfully alienated scientific commentators through his seeming obsession with what Darwin

got wrong, almost to the exclusion of what he got right. Wilson cannot deny that Darwin, more than anyone, demonstrated the scientific legitimacy of belief in biological evolution, but he presents Darwin as a mythmaker and plagiarist. His book offers ample scope for examining multiple levels on which myths can operate and interconnect.

So in this lecture I shall focus on the subject of myth and I shall return to Wilson in a moment. But there are other reasons why it is a subject worth revisiting. One is that, over the last ten years, the history of science has been hit by a wave of myth-busting and it may be time to take stock. In a public lecture delivered at Washington and Lee University in May 2014, the eminent historian of science John Heilbron counted as many as seventy five historical myths about science that had recently been exploded. Another twenty five or more were due for demolition during the conference at which he was speaking. Two books in particular now account for more than fifty such acts of destruction: *Newton's Apple and Other Myths about Science*, edited by Ronald Numbers and Kostas Kampourakis (2015) and its predecessor, *Galileo Goes to Jail and Other Myths about Science and*

Religion, edited by Ronald Numbers (2009). A few of these “myths” will give the flavour; in both books they are deconstructed by experts. They make excellent bedtime reading because each chapter is readable and only 3,000 words long. You can explode a myth every night for eight weeks or more! The “myths” include the claim that there was no scientific activity between Greek antiquity and the sixteenth century; that, before Columbus, geographers and other educated people thought the Earth was flat; that the Copernican revolution demoted the status of the Earth. On the theme of science and religion, there is the myth that Galileo was imprisoned and tortured for advocating the Earth’s motion; that Isaac Newton’s mechanistic cosmology eliminated the need for God; that Einstein believed in a personal God, and so on. More than ten of the fifty myths relate to some aspect of Darwin and Darwinism. These include the mythology that Darwin worked on his theory in secret for twenty years, his fears causing him to delay publication; that Darwin destroyed natural theology; that Thomas Huxley defeated bishop Samuel Wilberforce in their debate over evolution; and that Darwin and his German follower Ernst Haeckel were complicit in Nazi biology. And to these we could add the legend that resurfaces from time to

time in fundamentalist evangelical circles: that Darwin underwent a death-bed repentance at the end of his life.

I have given these few examples because both books feature the editorial claim that the term “myth” is not being employed in any sophisticated sense, merely to designate a common error. This is important because the number of falsehoods in the history of science must be infinite and we might ask, as Heilbron did in his lecture, whether there is not a danger of flooding the field with errors in order to indulge ourselves in their correction. For a myth to be a myth, Heilbron suggests, it has to be persistent and widespread, the caricature useful or even inspiring as an illusion. Many questions then arise, whether for example the myths I have just enumerated are *merely* falsehoods or whether some survive precisely because they offer support to broader meta-narratives. As an obvious example, the alleged imprisonment and torture of Galileo has been a favourite resource for critics of the Roman Catholic Church.

This introduces a further reason for reconsidering the meaning of myth. In an educational context, it is surely important that students become familiar with the distinction between myths as erroneous statements and

myths as narratives that may be historically or scientifically false, but the purpose of which is nevertheless to convey some deep truth about the world and the place of humankind in it. The topic is surely inescapable in religious education where references to Creation “myths” invite discussion of the ulterior meanings they might convey. For many religious believers, the stories of creation in *Genesis*, however inappropriate as science or history, convey profound truths about the ultimate dependence of the world on a divine being who made it, sustains it, and interacts with it. The parables of Christ would afford obvious examples of stories that are fictitious but, as with that of the Good Samaritan, designed to inculcate a profound moral truth.

Although examples of science fiction may spring to mind, the idea that a story can be simultaneously true and false is less likely to be encountered in a conventional scientific education where the boundaries between truth and falsehood are heavily patrolled. And yet one of the myths scrutinized in *Newton's Apple* is that the “scientific method” accurately reflects what scientists do. Years ago, the distinguished scientist Peter Medawar suggested that the typical scientific paper is a fraud in the sense

that it has to oversimplify the often complex stages through which an enquiry had actually proceeded. An education in the sciences that glosses over this disparity and ignores the diversity of scientific methodologies can be seriously impoverished. A primary issue in the Darwinian debates was the clash between a conventional inductivist methodology, with its long pedigree stretching back to Francis Bacon, and the hypothetico-deductive structure of Darwin's argument. As Darwin informed his Harvard correspondent Asa Gray in July 1857, "I *assume* that species arise like our domestic varieties with *much* extinction; & then test this hypothesis by comparison with ... established propositions ... in geography, distribution, geological history etc." This testing of a *hypothesis* became a perfectly respectable scientific procedure during the nineteenth century, but for some of Darwin's critics it was not quite *comme il faut*, not quite English.

It is time to return to A. N. Wilson in the specific context of Darwin biography. At the most basic level Wilson uses the word myth to denote simple falsehoods. He refers to a "Darwinian mythology" about the Galapagos Islands. Historians of science know that, despite the blandishments of the tour operators, the standard story of a *eureka* moment

during Darwin's time on the Galapagos archipelago is false. Wilson delights in advertising this common error. Darwin did not infer, certainly not immediately, that each island had its own distinct species of finch. Not until he returned from his voyage on *HMS Beagle* did he learn, with the help of the ornithologist John Gould, that his specimens (many of which had not even been labelled according to their island of origin) included finch varieties that were truly distinct species.

Myths that are merely falsehoods may, however, graduate into meta-level myths of greater moment. The story of Darwin's epiphany on the Galapagos has undoubtedly persisted because it reinforces the image of Darwin the archetypal empiricist, constructing his theory directly from observational data. It was not that simple and Wilson is correct to point this out. Darwin was deeply dependent on a vast array of observations, but he was also indebted to his reading, especially of Thomas Malthus's *Essay on the principle of population*. Malthus's famous argument that there was a natural tendency for human populations to grow faster than their food supply, with potentially devastating consequences, shaped Darwin's thinking about a competitive struggle for limited resources endemic in nature.

Darwin's methodology was eclectic, involving detailed study of the scope of artificial selection, as practiced by breeders seeking to accentuate particular characteristics of species under domestication. In his *Origin of Species* Darwin would write that even a well-trained ornithologist would be tempted to assign artificially produced pigeon varieties, like the pouter or fantail, to separate species even though they were derived from the common rock pigeon. This was a useful rhetorical resource for Darwin because if breeders could produce such changes in a pigeon in a brief span of time, how much might natural selection not achieve over countless millennia? By his own admission, as we have seen, Darwin's scientific reasoning was far more complex than simple inductivist models would imply.

The manner in which myths may become sub-myths for meta-narratives is clearly visible in popular discourse on relations between science and religious belief. The endlessly repeated story of the public humiliation of Bishop Samuel Wilberforce by Thomas Huxley at the 1860 Oxford meeting of the British Association is certainly delicious. For those who don't know the story, when the Bishop taunted Huxley by asking whether he preferred to think of himself descended from an ape on his grandfather's or

grandmother's side, he had a swift come-uppance when Huxley responded by saying he would rather have an ape for an ancestor than a bishop, or words to that effect. But the idea that Huxley scored a victory for Darwin's science over religious obscurantism is false on several counts. As Huxley's son Leonard conceded, given the time and place the majority of the audience would almost certainly have been on the bishop's side. Archival research suggests that, far from a portentous event, their exchange largely disappeared from public awareness for almost thirty years until, in the late 1880s and early 1890s, it was resurrected to enliven the *Life and Letters* of Darwin, of Joseph Hooker, and of Huxley himself. The myth then survived precisely because it could be seized retrospectively as a foundation myth of scientific professionalism. It supported the meta-level myth that evolution and creation were fundamentally incompatible concepts, which then enriched the super-myth that science and religion must inevitably conflict. Wilson is at his best when introducing nuances concerning matters of religion. He insists, correctly, that Wilberforce was no scientific ignoramus. In his review of Darwin's *Origin of Species* the bishop identified what, by Darwin's own admission, were the weakest points in his theory. But then

Wilson goes over the top in claiming that Wilberforce's scientific objections - such as a dearth of transitional forms in the fossil record - were not only unanswerable at the time but have effectively remained so.

Wilson's contention that Darwin himself was a mythmaker takes us deeper into the landscape of myth. By an injudicious conflation of "theory" with "myth", Wilson presents Darwin's crucial insight as something other than science, reductively a branch of political economy. After reading Malthus in September 1838 Darwin did have something of a *eureka* moment. He suddenly saw that, in a competitive struggle for existence, favorable variations would tend to be preserved, the unfavorable destroyed. In his own words, he had at last got a theory to work by, a theory that might explain how new species emerged from pre-existing forms through the gradual accumulation of variation. Wilson writes, "another word for a 'theory by which to work' would be a myth". This surely muddies the water. A working theory is not a myth; it is a crucial constituent of scientific practice. True, scientists have often cast their science in a narrative form, especially in the historical sciences. But Darwin understood and described his *Origin of Species* not as one long narrative, but as "one long argument".

True, once the theory had been expanded to embrace human evolution and, as in the monistic philosophy of Haeckel, inflated into a popular surrogate religion, the word “myth” becomes partly appropriate. But to apply the word “myth” to the bare bones of Darwin’s theory at its inception is misleading. It smacks of the language used by Darwin’s religious detractors when they disparage serious science as “only a theory”.

Darwin, says Wilson, was a “self-mythologizer”, one who remorselessly concealed his debt to precursors and contemporaries who were also speculating about biological evolution. Darwin is seen as a man “incapable of remembering, at some visceral level, that anyone beside himself had ever believed in evolution before 1859”. Worse, says Wilson, Darwin had actually stolen his core idea from a poor pharmacist in Tooting, Edwin Blyth, who in the *Magazine of Natural History* for January 1835 had speculated along prescient lines:

As man, by removing species from their appropriate haunts,

superinduces changes on their physical constitution and adaptation, to what extent may not the same take place in wild nature, so that, in a few generations, distinctive characters may be acquired, such as are recognized as indicative of specific diversity... May not, then, a large proportion of what are considered species have descended from a common parentage?

The resemblance to Darwin's thinking is too much for Wilson who, irrespective of the fact that Blyth rejected his own speculation, irrespective of the fact that Darwin required twenty years compiling cogent evidence to give the idea credibility, sees a straightforward case of plagiarism. To demean Darwin in this way when we know how generous he could be, to the geologist Charles Lyell for example, seems unduly provocative.

I promise not to reduce this lecture to a review of Wilson's book, but he does have a particular reason for presenting Darwin as a mythmaker. Darwin's naturalistic account of human evolution, eventually published in *The Descent of Man* (1871) provided what Wilson calls a "consolation

myth” for increasingly affluent and ascendant strata within Victorian society. Their consolation came in the form of liberation from the moral demands of Christian tradition. These had placed a psychological burden on the privileged to help those less fortunate than themselves. If it was somehow *natural* for the fittest to survive, one could be released from the guilt of failure to respond to those demands. As Wilson puts it, members of the social class to which Darwin belonged “had to persuade themselves that there was something inexorable, natural, about their superiority to the working class on whom their wealth in point of fact depended”. Class superiority was not the only kind of superiority. The racial superiority of white Europeans, the British in particular, was endemic in Victorian culture and Darwin certainly subscribed to that belief. But Wilson himself becomes the mythmaker when he implies that Darwin’s provision of the consolation myth was the real reason for his theory’s success. On the subject of superiority and inferiority, it would be possible to read Wilson’s biography without recognizing that for Darwin, as for his fellow evolutionists Alfred Russel Wallace and Asa Gray, one of the attractions of the idea of common descent was that it could provide ammunition against the practice of slavery.

For them, it underwrote an ultimate unity of humankind.

Social Darwinism could take many forms and, in that respect, Darwin's theory was multi-valent. It was serviceable for many political agendas. But his reputation has suffered from the insinuation that he supplied the science for Hitler's manifesto. Unfortunately Wilson does nothing to rescue Darwin from this favorite jibe of religious fundamentalists. He concedes that Darwin was no proto-Nazi but he is held responsible for preparing the ground. Myth enters the story here for two reasons: Darwin's Malthusian image of intense warfare in nature is said to be a legitimating myth for racial discrimination, but in linking Hitler directly to Darwin Wilson is guilty of a myth in the elementary sense of error. As Nicolaas Rupke has argued, it was an alternative, indigenous Germanic tradition of evolutionary thought on which Nazism drew. In fact, according to Rupke, "through the period of the Third Reich, Darwinism became thought of as 'un-German'". Robert Richards has similarly protested that to implicate Darwin and Haeckel in Nazi ideology overlooks the evidence that the racial notions of Nazism were rarely connected with conceptions of species transformation and the animal origin of all human beings. Among material

explicitly *condemned* by the Third Reich was what it dismissed as “the superficial scientific enlightenment of a primitive Darwinism and monism”, such as that advocated by Haeckel.

Wilson’s biography is instructive in its display of different kinds of myth. It is also flawed in reducing later modifications of Darwin’s theory to refutations of it. In retrospect we can see that Darwin was author of an unfinished project not a fraudulent one. He did not have modern genetics at his disposal. He did recognise that several different mechanisms were probably working together to effect species transformation, not natural selection alone. I am therefore attracted by the title of Kevin Laland’s recent prize-winning book, *Darwin’s Unfinished Symphony*. So I leave Wilson’s mythology here. It is time to look for some truth in discourse about Darwin, Darwinism and Christianity:

It is a truth that Darwin’s religious beliefs are difficult to pin down. This is because they changed over time, from Christian orthodoxy in his Cambridge years when he was preparing for the Anglican ministry, to a deistic position when writing the *Origin*, to the agnosticism of his later years. He is also difficult to pin down because, by his own admission, his

views often fluctuated and because he was anxious not to cause unnecessary offence. It is true that he renounced Christianity, also true that he denied ever having been an atheist. As one of the founders of the anthropology of religion, his science was a major challenge for Christian thinkers, compounding uncertainties already set in train by historical criticism of the Bible. But it is also true that his idea of common descent was welcomed by adventurous Christian thinkers seeking liberation from naïve models of divine intervention in nature. Was not more wisdom required to make a world that could make itself? Victorian clerics such as Charles Kingsley and Frederick Temple believed so. The consequence would be that biological evolution proved divisive within Christendom but not destructive. The challenge was multi-faceted, impinging on an unprecedented range of issues, from the interpretation of *Genesis*, the historicity of Adam and the meaning of the Fall, to the status of arguments for design and to the role of Providence in a universe permeated by random events. There were issues concerning human uniqueness on which Samuel Wilberforce expatiated and associated problems with what was meant by the human “soul”. The bloodstained trail of evolution jarred, as it would for George Romanes, with

belief in divine beneficence. The reinforcement Darwin gave to a naturalistic methodology for the sciences was perfectly expressed by Romanes when he insisted that “whether we be theists, atheists, or agnostics in our religion, in our science we *must* all be naturalists.”

These are truths about Darwinism and Christianity. On descending into detail on Darwin’s beliefs and the reception of his ideas, the myths begin to appear. I referred earlier to the super-myth that science and religion must necessarily conflict and how this has been served by the sub-myth that the ideas of creation and evolution are essentially incompatible. It was not clear to Darwin that this was the case. In his large unpublished text on natural selection, he gave his own definition of what he meant by “nature”:

“By nature, I mean the laws ordained by God to govern the Universe.” There was still a Creator on whom the laws of nature depended for their existence. Late in life, in a letter to John Fordyce, he wrote that it seemed “absurd to doubt that a man may be an ardent Theist and an evolutionist.” Darwin had friends and colleagues, including Asa Gray, who readily embraced both. Evolution was a creative process, in its broad outlines progressive. The production of what Darwin called the higher animals was the greatest good

he could conceive. In correcting the myth that clerical reactions were uniformly hostile, the geneticist Steve Jones once replaced it with another - that the Anglican Church “soon accommodated Darwin’s ideas, which as most clerics realized, have no relevance to religion.” That surely goes too far, given the impetus Darwin gave to secularist movements. Much depended on which of Darwin’s ideas was in the frame. Scientists and churchmen could be amenable to a theory of common descent, while far less so to the prominence Darwin gave to natural selection as the agent of species transformation.

What of the story that Darwin delayed publication of his theory for twenty years in fear of social and religious recrimination? Is this another sub-myth regulated by the master-narrative of inexorable conflict? Darwin scholarship is actually divided on why he published only when in danger of losing his priority to Wallace. He knew, of course, that his theory would be offensive to many. It would be unwise for us to discount consideration for the feelings of his wife Emma with her genuine piety. Prior to their marriage she had touchingly expressed her anxiety lest Charles’s religious sensibilities be compromised by the sceptical mentality characteristic of scientific

enquiry. She wanted to know his favourite biblical verses. Many were the tears he shed over that letter. As Adrian Desmond and James Moore underlined in their biography, theories of biological evolution had been associated with radical political activists and not with respectable country gentlemen. However, the balance in recent scholarship has rather shifted from fear of religious opprobrium to fear for his scientific reputation lest his argument be perceived as insufficiently plausible. It was not until the mid-1850s that Darwin saw why natural selection would favour divergence from common ancestors, the more extreme variants developing further as they gradually occupied different niches. There had been problems concerning the social insects, particularly how the characteristics of neuter ants and bees were perpetuated when they themselves were infertile. Nor could Darwin forget the censorious reaction to the anonymous *Vestiges of the Natural History of Creation* (1844), in which Robert Chambers' vision of organic development over time, despite its popularity, had been derided by the Anglican scientific élite. Darwin needed the security of knowing he had the authority to publicise his theory. In the most recent study of the "delay", it is argued that it was the appreciation of his exhaustive study of barnacles (from

1846 to 1854) that gave him the necessary confidence to do so. In so far as Darwin experienced “fear” it was for his scientific reputation, a fear that he had inadequate evidence, that he would be unconvincing.

Because myths usually do contain an element of truth, they are especially resilient when valued for the support they give to meta-myths that attract emotional as well as intellectual attachment. The myth that Darwin destroyed the argument from design provides a telling example. It certainly does contain elements of truth. In his *Autobiography* Darwin declared that “the old argument of design in nature, as given by Paley ... fails now that the law of natural selection has been discovered.” It failed because there was now an immanent “natural” explanation for what looked like beautifully-crafted structures in living organisms, structures like the human eye with its ability to change focus and respond to different intensities of light. Because natural selection was a perfecting mechanism it could simulate what, for Paley, had been evidence of purpose and design in the natural world. As the American historian Neal Gillespie put it, Darwin showed how Nature could “counterfeit” design. But, although there is truth in the myth, there is also falsehood because Paley’s argument from contrivance to a Contriver was not

the only design argument in town. The Cambridge philosopher William Whewell, who first coined the word “scientist” in the early 1830s, argued for design in the propitious combination of nature’s laws that had made intelligent life possible. Paley himself had looked to the laws of nature, arguing that a law presupposed an agent, a law-maker. Yet the antithesis between Darwin and Paley, sharply delineated by Richard Dawkins, has regulated much of the discussion of “science and religion” in the Victorian age, as if the credibility of the Christian faith was critically dependent on Paley’s apologia.

If one wished to celebrate design in nature, even Darwin’s bulldog, Thomas Huxley, saw no difficulty in continuing to do so. Ultimately, in Huxley’s view, Darwin’s theory had no more to do with theism than had the first book of Euclid – meaning that its relevance to theism was minimal. There was no reason to discount the possibility that design had been incorporated into the initial configuration and laws of the universe. That Darwin destroyed the argument from design is therefore a myth both in the sense of being at least partly false and also in the sense of regulating a broader discourse of science and religion. Design arguments did not

disappear with Darwin. Appeals to what Huxley called a wider teleology can even now be found in contemporary philosophy of religion.

A myth, particularly congenial to advocates of the “conflict thesis”, is that it must have been Darwin’s science that destroyed his faith. Laying that myth to rest, the well-known Harvard biologist E. O. Wilson insisted that “the great naturalist did not abandon Abrahamic and other religious dogmas because of his discovery of evolution by natural selection.” Rather, “the reverse occurred.” The shedding of what E. O. Wilson describes as “blind faith” gave Darwin “the intellectual fearlessness to explore human evolution wherever logic and evidence took him.” As with the myth-busting of Steve Jones, the correction of one caricature leads to another. Myths clearly flourish when our thinking is structured by either/or dichotomies. A balanced account of Darwin’s agnosticism has to recognise that his doubts had multiple sources. Most prominent *were* considerations that had little to do with his science. He revolted on moral grounds against prevalent Christian teaching on eternal damnation for the unregenerate, which would include his father and free-thinking brother Erasmus. The presence of so much suffering in the world Darwin considered one of the strongest

arguments against belief in a beneficent deity. His indelible anguish on the death of his daughter Annie in 1851 would intimately reinforce that sensibility. Yet it would be wrong to ignore considerations that did arise from his science. He did see a connection between the progressive understanding of laws of nature and the incredibility of miracles. His science even provided epistemological grounds for agnosticism: If the human mind was itself the product of evolutionary processes, could it be trusted to reach definitive conclusions on the big metaphysical and theological questions? “Can the mind of man”, he asked, “which has, as I fully believe, been developed from a mind as low as that possessed by the lowest animal, be trusted when it draws such grand conclusions?”

That is itself a big question and so provides a prompt for me to end this lecture. There are many more truths and many more myths about Darwinism and Christianity. In the last analysis, it is impossible to drive a sharp wedge between “scientific” and “religious” grounds for Darwin’s religious scepticism. This is because the extent of both human and animal suffering that he saw as inimical to religious belief was, he believed,

perfectly explicable on his theory of natural selection. In his *Autobiography* Darwin put his finger on a related issue that clearly weighed heavily with him. He acknowledged that human suffering was sometimes rationalized by imagining that it served for man's moral improvement. But, he pointed out, "the number of men in the world is as nothing compared with that of all other sentient beings, and these often suffer greatly without any moral improvement." That is an issue with which Christian theologians are still having to engage in depth.
