

## **A Brief Introduction to the *Anti-Darwinian Heresy*.**

**Talk given by R.Miller, 15.08.10 at “Explorations”<sup>1</sup>.**

The first thing I want to say is how glad I am to belong to this group. I was brought up in Sheffield, England, in a family which took its religion seriously, as Methodists, on the liberal fringes of that denomination. My father was a physicist, and so I grew up immersed in debates about the relation between his science and his religion. However, at the age of seven, I ran screaming out of Sunday School - probably not for theological reasons, but a reflection of social anxiety - and I never went back. As a student, some years later, I was on the edge of many religious groups, but was generally quite disappointed by their superficiality. I came to New Zealand in 1977, to Otago Medical School, as a biologist, and was immersed in their environment for 30 years, but scarcely had anything at all to do with religious groups, except via my brother-in-law Dugald Wilson, a presbyterian minister in Christchurch, who some of you may know. The discussions I have had with him on religious topics were far more enlightening than any I had in Britain. Coming to Masterton 15 months ago, I found myself amongst a group of people who not only take their religious belief, their spirituality very seriously, but also are free-thinkers, in the literal meaning of that phrase. I refer to this group, with other friends, as “heretics anonymous”.

Of course, as I grew up, Darwin’s theory of evolution was completely accepted, as standard, acceptable science; but I became a biologist, and so could see it with a more critical eye than my parents. My doctoral supervisor in Glasgow - who later became Professor of Zoology in Nottingham - was a very argumentative man, tough as old boots, but deep down, had a heart of gold, and I owe him a lot. He has considerable courage on social issues.

I know he is a critic of Darwinism, although I don’t know his arguments. My critique is my own reasoning. In Otago, I realized that, for many biologists, Darwinism had the status of a secular religion, the creation myth for the modern world, if you like, with Charles Darwin himself as the founding saint. Well find me any religious orthodoxy, and you will find me on the outside, as a heretic. Of course, all classic heresies are anti-

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<sup>1</sup> “Explorations” is a discussion group which meets on Sunday afternoons in the Union Church in Masterton, New Zealand. Topics for discussion are wide ranging, but with a focus on aspects of religion, spirituality and their social implications. Its members are very diverse, ranging from ex-missionaries to avowed atheists. The original presentation of this talk included portrait pictures of most of the people mentioned, but for reasons of disc space, they are not included in this version.

something-or-other. So that is where my title comes from “A brief introduction to the anti-Darwinian heresy”. When my daughters were growing up they knew all about evolution. My elder daughter Anna-Marie, at age about 4 came out with the beautiful question: “Was grandpa Harold’s grandfather really a monkey”, to which the correct answer should have been, had I thought of it, “Yes he was, when he was your age”.

I want to start a long time before Darwin, before the birth of what we call science in the seventeenth century. Before then there were two concepts, which were gradually transformed into the natural sciences. One was *Natural Philosophy*, the philosophy of nature, which gradually became what we now call physics. In Glasgow, the physics department was (and I suspect still is) called “Natural philosophy”, which shows that science has older roots in Scottish universities than in Oxford or Cambridge, with the single exception of Isaac Newton. The task of natural philosophy was to *explain* nature, by whatever arguments were available, which might include theological ones. Since the time of Galileo, those explanations have tended to be quantitative, mathematical ones, although they don’t have to be. Isaac Newton’s magnum opus “*Mathematical Principles of Natural Philosophy*”, was an intimate blend of mathematical and theological explanation. Here is a small quote from that work to give you a flavour of that work.

The finely tuned solar system could only have come from the design and dominion of an intelligent and powerful being”.  
(Isaac Newton, *Principia mathematica*, 1687)

So, the concept of intelligent design was not invented by modern-day creationist; in fact, argument from design is one of the oldest and most convincing arguments for the Christian God.

However, since Newton’s time Nature and explanations of it in the traditions of science have avoided theology. Newton was probably the last person to have such a comprehensive perspective, including cutting edge science and a very distinctive theology. One may well ask how the relative claims of physical and theological explanations can be balanced; and this of course is a critical question in understanding Darwin’s theory nearly 200 years later.

The other old conception was *Natural History*, which is essentially concerned with *describing* nature, as one finds it, in all its complexity, rather than trying to explain it. This is the origin of both biological and medical science, although in both there are now examples which fit better into the natural philosophy model. In the eighteenth century Carl Linnaeus - the son

of a Swedish Lutheran pastor - was a pioneer in classification of plants, and so started to systematize all the complex descriptive work - but it was *still* descriptive, natural history, not natural philosophy. Charles Darwin grew up in that tradition, in a family inclined towards religious dissent, if not outright atheism. As a natural historian he was supreme, perhaps the best ever.

The critical difference between natural philosophy and natural history is that Natural Philosophy - that is physics - deliberately simplifies the systems it studies, so that very few variables are relevant. In the case of planetary motion, for Newton, all that was relevant was time and position in space. One then really does have a chance of explaining things. Natural history deals with the world, life, and history in all its complexity, leaving scope for vast amounts of descriptive detail, but it is all too complex to work out fundamental principles for explanation or cause.

The point holding together all I want to say is that, from the eighteenth century there has been increasing confusion of these two concepts. This confusion is, I believe, the origin of the continuing controversy on Darwinism; and in many fields, some directly linked to Darwin's theory, this has had truly disastrous consequences.

What I want to do now is two things: first, to follow through the history of that confusion, focusing on the origins, and later consequences of Darwin's theory. We'll then pause for some discussion; and then I want to look at the philosophy and theological issues which his theory raises, and to point out one or two serious misconceptions about it.

The confusion of Natural Philosophy and Natural History started not long after Newton - when the first statistics on age-related life expectancy became available - this was actually the start of the Life Insurance industry<sup>2</sup>. The statistics seemed to fit nice mathematical equations. Seeing the apparently good fit, people said "Aha - it's good quantitative science like Newton's." Some went further: Just as Newton saw both physical principles and God's hand in the movement of the planets, so they thought that these statistics revealed God's hand at work - God's plan for human populations if you like. The Plague of London in 1666 did produce significant departures from the formulae, but that was conveniently overlooked. Perhaps some of them thought it was the work of the Devil. Not only was this the start of the Life Insurance Industry; in a broader scheme of things, it was the start of what we would call "social science". From that time there has been a steady stream of public policies based on the so-called scientific analysis of society and

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<sup>2</sup> Daston, L. (1988) *Classical probability in the Enlightenment*. Princeton University Press, chapter 3.

history. The best known example is that of Karl Marx, but the fascist dictatorships of the twentieth century used similar style of argument.

More relevant to my theme was the political history in early nineteenth century Britain. At the start of that century, Thomas Malthus pointed out that human populations could grow much faster than the growth of food production capacity. Thus population size would fluctuate wildly as a result of excessive procreation on the one hand, and mass starvation on the other. Between the end of the Napoleonic wars and the 1830s these ideas grew in the public mind. There was also concern about growth of social welfare spending, which had been given to the poor under the Poor Law, which went back to Shakespeare's time. Malthus and others (such as Jeremy Bentham and David Ricardo) argued that the old Poor Law led to excessive births of children whose parents could not afford to raise them, and so were destined to live off state handouts. (I'm using modern terms, because exactly the same issues and arguments are around today.)

In the early 1830s a reformist government came to power, and its political reforms were very significant. In 1834 it also brought in the Poor Law Amendment Act. This meant that you could only receive state support if you lived in one of the workhouses - which then had to be built in every district of the country. The workhouses were set up deliberately to be hateful places, to "encourage the others" shall we say. People would have to work harder, to save for old age, and to avoid having to go to the workhouses, and so would have less energy for producing children. A very neat solution to the problem. *Within* the workhouses, men and women were segregated - to stop poor people reproducing their kind, and children also were separated from their parents once they reached a certain age. This hateful legislation led to riots across the country in the later 1830s.

In 1834, Charles Darwin was a young man, in the middle of his famous Voyage of the Beagle, seeing all sorts of new plants and animal species, as well as fossils, sea shells high in the mountains of the Andes, a massive earthquake in Chile; and so he was getting to think about gradual change over vast spans of time, larger than anyone had contemplated before. He also heard by mail about the political events in Britain.

When he returned to Britain in 1835 he started to digest in his mind all his experiences, but was undoubtedly influenced by all the socio-political ideas which were current at the time - the ideas of Malthus and the rhetoric which led to the Poor Law Amendment Act. Social competition - including competition between nations - has always been part of history - and in time of war, that may amount to struggle for survival. The phrase "survival of the fittest", is often linked with Darwin, but it did not originate with him, but

from Herbert Spencer who was writing about socio-political systems. So, you could say that Darwin's theory of evolution by natural selection started off in the socio-political area, and was adapted by him for biological evolution.

Darwin's first conceptions of this came in about 1839. In the early 1840s he wrote a long essay on the subject, shown only to a few friends; and then he sat on it. He knew it was likely to be very controversial, especially with regard to the origin of the human species, in the social, political and religious climate of the time. In the next fifteen years he did a lot more work, filling in details in correspondence with people all round the world, including details of plant and animal breeding, which Darwin envisaged to be a parallel with the slower process of natural selection. Eventually his book was published in January 1859, when Alfred Russell Wallace had independently come up with exactly the same idea, based on very similar reasoning, but a far less comprehensive body of evidence. The issue of who had priority was resolved in a very gentlemanly way. The first edition of *Origin of Species* sold out overnight, and many further editions followed. Here is the title page. Please note the subtitle "*by means of Natural Selection or the Preservation of Favoured Races in the Struggle for Life*".

Darwin himself was a very gentle non-combative individual, appalled by the cruelty of slavery, and of capitalism in England, and even, as a naturalist, by the fact that the Ichneuman fly survives by eating the insides of the caterpillar in which it grew. Thomas Henry Huxley was one of Darwin's first supporters, and realised that Darwin himself could never cope with the controversy which was bound to come on publication; so he took on himself the role of public advocate for the "*Origin of Species*". He was sometimes called "Darwin's Bulldog". That was actually a term which Huxley gave to himself. It was Huxley who transformed the debate into one of "Science versus religion", not least in the famous debate in Oxford, versus Bishop Wilberforce. Darwin himself did not want his theory to be presented in this way.

The impact of Darwin's *Origin* was immense in many fields, especially in sharpening the battle lines between science and religion. But we tend to turn a blind eye to its catastrophic political impact. Darwin's half-cousin, Francis Galton was immensely impressed and influenced by the *Origin of Species*, and from the early 1870s was openly advocating what became known as eugenics - in other words, using principles of selective breeding known in animals to the human species, to improve its genetic strength - or rather to prevent its degeneration due to all the protections offered to weaker members in so-called civilized societies. It might be said, in defence, that

Darwinism is not the same as the social Darwinism of Herbert Spencer. However, in the *Origin* Darwin freely refers to Spencer and Malthus to support his views. There is nothing I can find in the *Origin* referring to eugenics, but note the subtitle<sup>3</sup>, and the fact that the first mention of the natural selection principle in this book is about humans (namely the fact that native inhabitants of Africa are less prone to tropical disease than Europeans). Galton published a book entitled “*Hereditary genius*” in 1869, and Darwin warmly commended it. In 1871, Darwin published another book, “*The Descent of Man*”, some passages in which are clearly sympathetic to eugenic ideas. Let me quote some of the key passages:

With savages, the weak in body or mind are soon eliminated; and those that survive commonly exhibit a vigorous state of health. We civilized men, on the other hand, do our utmost to check the process of elimination; we build asylums for the imbecile, the maimed, and the sick; we institute poor-laws; and our medical men exert their utmost skill to save the life of every one to the last moment. There is reason to believe that vaccination has preserved thousands, who from a weak constitution would formerly have succumbed to small-pox. Thus the weak members of civilized societies propagate their kind. No one who has attended to the breeding of domestic animals will doubt that this must be highly injurious to the race of man. It is surprising how soon a want of care, or care wrongly directed, leads to the degeneration of a domestic race; but excepting in the case of man himself, hardly anyone is so ignorant as to allow his worst animals to breed.

A most important obstacle in civilized countries to an increase in the number of men of a superior class has been strongly insisted on by Mr Greg and Mr Galton, namely, the fact that the very poor and reckless, who are often degraded by vice, almost invariably marry early, whilst the careful and frugal, who are generally otherwise virtuous, marry late in life, so that they may be able to support themselves and their children in comfort. Those who marry early produce within a given period not only a greater number of generations, but, as shown by Dr Duncan, they produce many more children. The children, moreover,

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<sup>3</sup> I am told however that this subtitle was not Darwin’s choice, but something suggested by the original publisher.

that are born by mothers during the prime of life are heavier and larger, and therefore probably more vigorous, than those born at other periods. Thus the reckless, degraded, and often vicious members of society, tend to increase at a quicker rate than the provident and generally virtuous members. Or as Mr Greg puts the case: 'The careless, squalid, unambitious Irishman multiplies like rabbits: the frugal, foreseeing, self-respecting, ambitious Scot, stern in his morality, spiritual in his faith, sagacious and disciplined in his intelligence, passes his best years in struggle and in celibacy, marries late, and leaves few behind him. Given a land originally peopled by a thousand Saxons and a thousand Celts---and in a dozen generations five-sixths of the population would be Celts, but five-sixths of the property, of the power, of the intellect, would belong to the one-sixth of Saxons that remained. In the eternal "struggle for existence", it would be the inferior and less favoured race that had prevailed---and prevailed by virtue not of its good qualities but of its faults.

Interesting reading. Perhaps just a little sanctimonious, given that Darwin was born in the lap of luxury, and never really had any need to actually *earn* a living; but, in fairness to Darwin and Galton, neither of them believed in the very strong state control needed to enforce eugenic policies.

When the *Origin* was published, nothing was known about principles of genetics. That was started at a monastery in Moravia by Gregor Mendel, in the 1860s, based on experiments with garden peas. His work was published in a very obscure place, and became more widely known only by the turn of the century. At that time the focus came on the relation between inherited disorders and what was imagined was the degeneration of the human stock, genetically speaking. There is a serious fallacy in thinking in this issue, which was known implicitly to be a fallacy by the 1920s, but was widely ignored, because it did not fit the political agendas in many countries<sup>4</sup> at that time. The fallacy is to assume that all traits which have any tendency to run in families are inherited in the simple, categorical, near deterministic way that Mendel showed for some traits in his peas. *This isn't so*. Most of the *common* disorders which tend to run in families (diabetes, schizophrenia, many forms of heart disease), have much weaker inheritance, seen only in a statistical sense in big populations, much more complex and far from deterministic. These disorders represent a far greater burden of disease world-wide than those with strong simple inheritance, any one of which is

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<sup>4</sup> see: Douglas Baynton (in preparation September 2010) *Defectives in the Land: Disability and American Immigration Law, 1882-1924* (book in progress)

usually quite rare. Now if you believe that all familial traits are inherited in a strong Mendelian manner, eugenic programs start to make sense - get rid of the people bearing those genes and you get rid of the problem. But if you are more realistic, they just don't make sense. Eliminating everyone with a diagnosis of schizophrenia will *not* eliminate schizophrenia. Unfortunately, even today, many people still believe that fallacy, including a lot of scientists, who should know better. In secondary schools, only Mendelian genetics is taught, I suspect.

Darwin's son, Leonard - at various times both an army major and an M.P. for Lichfield - was heavily involved in the eugenics movement - as president of the British eugenics society from 1911 to 1928, and honorary ex-president until his death in 1943. To give you an idea of how he thought - try this letter, written in 1938. It is addressed to Ronald Fisher, best known for his pioneering work on statistics. Before it was all put on the internet, the standard book of statistical tables was Fisher and Yates. That's the man. He was also a prominent eugenicist.

“Now my view is that the kind of research which he describes, and on which you are engaged, will be of inestimable value in ridding the world of definite abnormalities. But for the purpose of making the mass of the population better fitted to their environments, I am inclined still to rely greatly on the animal breeders methods, that is on continually breeding as far as possible from the better stocks. Here genetic factors are, I believe, so complicated that I doubt if they will help greatly. His argument points to the conclusion that the necessarily genetically ignorant breeders of the last 1000 years can only have accomplished but little; which is, I think, manifestly false. It would interest me to know how far broadly speaking, you agree in what I say in the one paragraph<sup>5</sup>.

Well, of course, Hitler came to power in 1933, and he *did* believe in total state control; and he started to implement such policies in a big way. Before he started murdering Jewish people, his trial run was on people with what he thought were genetically determined mental disorder - and he killed several hundred thousand, and sterilised many more, some of whom are still alive in Germany.

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<sup>5</sup> section transcribed from handwritten letter to R.A Fisher, dated September 8th, 1938, available at: <http://digital.library.adelaide.edu.au/coll/special//fisher/corres/darwin/darwin380908a.html>



So, what can we conclude from this survey of 350 years of history? The paradigms of Newton's science were distorted, and applied in the social realm. There was a common thread running from Malthus, to the Poor Law Amendment Act, this providing inspiration for Darwin's theory, then to the birth of the eugenics movement, and in the twentieth century to its implementation on massive scale. I don't want to implicate Darwin himself too much in this - much of it may have happened anyway, given the global political forces then at work. Hitler did not know of Darwin's theory, and his book "*Mein Kampf*" never mentions him.

But let me finish this part of my talk with a quote from a philosopher you may have heard of - Karl Popper. He was an intellectual from central Europe, close friend of Friedrich Hayek, who you may have heard of, and was actually a refugee in Otago for a few years after World War II. In 1958, he wrote a book called "The Poverty of Historicism". Here is the dedication:'

"In Memory of the countless men and women of all creeds or nations or races who fell victim to the fascist and communist belief in Inexorable Laws of Historical Destiny . . ."

. . . or, in my terms, the confusion of natural philosophy with natural history, and therefore the attempt to try to explain history, as though you were a physicist. Most of Popper's book is about socio-political history, but of course Darwin's theory is also a theory of history. Here is some of what Popper says about Darwin's theory.

"What we call the evolutionary hypothesis is an explanation of a host of biological and paleontological observations - for instance, of certain similarities between various species and genera - by the assumption of the common ancestry of related forms. This hypothesis is not a universal law, even though certain universal laws of nature, such as laws of heredity, segregation, and mutation, enter with it into the explanation. It has, rather, the character of a particular (singular or specific) historical statement. (It is of the same status as the historical statement: Charles Darwin and Francis Galton had a common grandfather.)

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But can there be a *law* of evolution? Can there be a scientific law, in the sense intended by T.H.Huxley, when he wrote: "he must be a half-

hearted philosopher who . . . doubts that science will sooner or later . . . become possessed of the law of evolution of organic forms - of the unvarying order of that great chain of causes and effects of which all organic forms, ancient and modern, are the links'? I believe that the answer to this question must be 'No', and that the search for the law of the 'unvarying order' in evolution cannot possibly fall within the scope of scientific method, whether in biology or in sociology. My reasons are very simple. The evolution of life on earth, or of human society, is a unique historical process. Such a process, we may assume, proceeds in accordance with all kinds of causal laws, for example the laws of mechanics, or chemistry or heredity and segregation, or natural selection etc. Its description however, is not a law, but only a singular historical statement. . . . Any law formulated in this . . . way must be *tested* by new instances before it can be taken seriously by science. But we cannot hope to test a universal hypothesis, nor to find a natural law acceptable to science if we are forever confined to the observation of one unique process."

## DISCUSSION

At this point, I want to stop telling a historical story, and make a few comments on the science, and their implications for theology. In my view, discussion of Darwin's theory in relation to religious belief almost always presents it as a package deal, a single idea to be accepted or rejected; and I think that is a big mistake. There are really *two* ideas, which I think we should evaluate separately, and give separate responses to.

The *first* is the idea of evolution as a *historical fact*, a fact of descriptive natural history, that animals and plants had very different forms millions of years ago from those we see today. If you accept that the world is very much older than the few thousand years proposed by Bishop Ussher, then considering the fossil record there is little reason to doubt this fact. If you *don't* think the world is very old, then it's different, but I don't think we need to go down that track here. Most of the detailed evidence we hear about today, including modern evidence in support of Darwin's theory is descriptive details, filling in the details of this story of natural history.

The *second* idea is to *explain* that history. Darwin's idea was the principle of natural selection of existing variants of each species. In the last sentence of his introduction to the Origin he writes: "I am convinced that Natural Selection has been the most important, but not the exclusive means of evolution". In later editions of the Origin, I believe he was less certain

about the part played by natural selection. The *variants* were supposed to arise in an essentially random way. Now there certainly is plenty of evidence that natural selection works on a small scale, including in human persons, as well as from animal breeding. Those are examples of the causal laws to which Popper refers; but the theory claims that these very small-scale changes apply to the whole sequence of evolutionary history from inanimate matter all the way up to our own selves. That is a much bigger claim. Reasoning from small-scale cases is unlikely to be accurate, when extended to the whole course of billions of years of history. Causal principles established on the everyday scale often break down when pushed to extreme situations; so the claim needs to be substantiated by actual evidence. What is the evidence? There can be no evidence, because, as Popper says, it is a complex, unique sequence of events of history, not a causal process to be reduced to utmost simplicity, as in physics, when those processes can be studied by themselves.

Let me go a bit further: If you say that the awesome world of living things has arisen as the result of an essentially purposeless process of selection, acting on essentially random variations - this might be thought to be a scientific hypothesis; but God and religion is supposed to give meaning and purpose to our fleeting existence, so those assumptions of Darwin are more than just science: They have very strong theological implications. That statement is true whether you call yourself a Christian or are a fervent atheist. Once you are in the business of fundamental explanations, there are possibilities at both the theological and the physical level, as you saw in the case of Newton's science. The choice is really a choice between the fundamental assumptions one starts from; but there is a real danger that one surreptitiously uses as basic assumptions answers to the very question which is at issue. It would be more honest to declare the assumptions on which one's faith rests right at the outset.

Since 1859 almost all the debate has pushed together the two issues into one idea - the descriptive natural history, and the attempt to explain that history, and I think that has totally muddied the waters. Thus, the descriptive part of evolution becomes confused with the explanatory part, which, as I say, might be partly theological.

Various celebrated people have had their objections to Darwin's theory, including Friedrich Nietzsche, and George Bernard Shaw. I want to mention another person, who I think was very clear-thinking on Darwinism. His name was Charles Hodges (1797-1878), said to be one of the most distinguished U.S. theologians of the nineteenth century, a presbyterian, who ended his career as professor at Princeton University. In 1874 he wrote a

book entitled “What is Darwinism?” I haven’t been able to see a copy, but I have seen sections of it quoted, in another book I read. Here is a key quote:

“In using the term Natural Selection, Mr. Darwin intends to exclude design or final causes”. [That] “this natural selection is without design is by far the most important and only distinctive element of this theory”, [bringing it] “into conflict not only with Christianity, but with the fundamental principles of natural religion. . . . [So Darwinism was] ‘atheism’.”.

Note several key things here: He is *not* basing his objection on biblical grounds, that Darwin is contrary to a literal reading of the Genesis story; and he is *not* objecting to the descriptive part of Darwinism - the *fact* of evolutionary change. (In this he is different from Bishop Wilberforce in the debate at Oxford with T.H.Huxley, who clearly *did* object to the factual notion that humans were descended from apes.) Nor is Hodges’s critique based on a specifically Christian viewpoint, but one based on religious philosophy more generally. But Hodges does appear to keep separate my two points, the descriptive and the explanatory part. You may or may not agree with his conclusions, but it was a very intelligent analysis of Darwin’s theory. I can’t fault his logic. Hodges is said to have been one of the people from whom North American fundamentalism started; but in my view, his comments were straight to the point. Since then the debate on evolution in relation to religion has become progressively more *stupid* on both sides of the divide. So, since the two issues are fused into one, scientists have to argue that there is no theological issue at stake in Darwin’s theory, which I think is wrong; and many Christians have to argue that the facts of evolutionary change are incorrect, which is also wrong.

Darwin attempted to answer the question of how species arise. But, for higher species (i.e above bacteria or other micro-organisms), has anyone every seen a new species arising, and can say, *in detail*, how it arose? Does anyone, or can anyone, really know how new species arise? I think not. For myself, I am quite content to say “I do not know in detail how new species arise.”