



## Can Science Explain Everything?

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### Scientific Naturalism and the Death of Science

'Experiments are the only means of knowledge at our disposal. The rest is poetry, imagination', Max Planck.

Scientific naturalism is the view that only scientific knowledge is reliable and that science can, in principle, explain everything. This paper surveys the inherent weaknesses in this philosophy, illustrated by the naturalistic attempt to extract ethics from biology. Different Christian responses to naturalism are considered. It is argued that the Christian world-view provides a more coherent explanation than naturalism for the properties of the universe and for the richness of human experience. Ironically, naturalism itself puts at risk the future health of science.

Peter sits on a Government Committee which advises Parliament on issues such as genetic engineering and cloning. Peter believes that science provides the only source of real knowledge for his committee and that any other inputs are mere opinion. Human cloning, for example, should be allowed provided the technology is safe.

Susan is a doctor who has imbibed the writings of the philosopher James Rachels. Rachels sees no reason to prefer the value of a human baby with severe brain damage over the life of a healthy monkey [1]. Susan is now working on a ward for severely handicapped infants and objects to the effort and expense involved in keeping alive such badly damaged human beings.

Jonathan is a first-year university student doing religious studies. He accepts the convictions of his

lecturer, who thinks that religions are worthy objects for cultural study, but not actually true. Jonathan believes that science has shown that miracles are impossible, and the idea of 'supernatural interference' by a god is ridiculous.

Peter, Susan and Jonathan are united in a metaphysical commitment which remains surprisingly common in our so-called post-modern society. This commitment is called 'scientific naturalism', or sometimes 'metaphysical naturalism'. *Scientific naturalism refers to the view that only scientific knowledge is reliable and that science can, in principle, explain everything.* Science can be defined as an intellectual endeavour to explain the workings of the physical world, informed by empirical investigation and carried out by a community trained in specialised techniques [2]. Scientific naturalism, however, is a philosophy which goes well beyond science. Naturalism is appealing because it promotes human rationalism and moral autonomy, specifically excluding the possibility of God or other supernatural agencies acting in the world. As Prof. Peter Atkins comments: "Humanity should accept that science has eliminated the justification for believing in cosmic purpose, and that any survival of purpose is inspired solely by sentiment" [3]. Nevertheless, scientific naturalists are not atheistic in a merely negative sense, but actively seek to answer all types of human questions by recourse to science. In striking contrast to much recent philosophising, naturalists discuss classical problems in philosophy, such as mind and body, justification for moral beliefs, and so forth.

Scientific naturalism runs through contemporary society like a mineral seam through rock, appearing in different guises to influence critical decisions in education, the media, and the economic and political arenas. Implicitly, if not explicitly, the presupposition that *real* knowledge is scientific knowledge, and none other, remains firmly embedded in the western psyche.

### A Critique of Scientific Naturalism

Scientific naturalism can be criticised for reasons which do not require prior religious commitments [4]. For example:

*Naturalism is self-refuting.* Scientific naturalism

claims that science is the only true source of knowledge. It is therefore fair to ask whether science itself can be used to justify naturalism. It cannot. The data which science generates can provide no support for or against such a philosophy. Since the truth of scientific naturalism cannot be scientifically demonstrated, it cannot be a valid form of knowledge, and so is hoist by its own petard.

*Naturalism is self-defeating.* Science has shown that the properties of the universe depend on the remarkable fine-tuning of the cosmological constants which define the properties of matter. Turn the dial even slightly to change one of these critical parameters and the universe would be completely different from the one we inhabit and, in most cases, incompatible with life. As the physicist Steven Weinberg has commented: 'There is reason to believe that in elementary particle physics...there is simplicity, a beauty, that we are finding in the rules that govern matter that mirrors something that is built into the logical structure of the Universe at a very deep level' [5]. It is a remarkable fact that conscious beings have appeared who can understand and describe the properties of this mathematically elegant universe. Yet there is no explanation for the existence of such a universe within the framework of scientific naturalism [6]. To say that it 'just happened' displays a startling lack of curiosity. The more science uncovers of the remarkable universe we inhabit, the more pressing becomes the need to explain the reason for its existence, and the more obvious becomes the failure of naturalism to provide any satisfactory explanation [7].

*Naturalism excludes too much.* The task of science is to develop generalised statements of increasing sophistication which explain physical phenomena. But the construction of scientific knowledge has a cost: the tendency to exclude the particular in favour of the general, and of the subjective in favour of the objective. The scientist as observer of other human beings, for example in psychology, aims to construct increasingly accurate theories of human behaviour by recourse to data based on large sample numbers. In the process of quantification and generalisation the human individual as a conscious agent is reduced to an 'it', the object of scientific investigation. Merely as a research

stratagem for investigating human behaviour, this is perfectly acceptable. But if science is the *only* form of real knowledge, then knowledge derived from the individual's personal biography tends to be down-graded. Scientific descriptions exclude the joy of the first kiss, the exhilaration of reaching the top of the mountain and the depths of despair at some personal tragedy. They also exclude aesthetic appreciation, love, beauty, poetry, art, friendship and moral judgments. Brain-waves and hormonal levels can be measured in individuals experiencing all these normal aspects of everyday life. But they are not the same as the experiences themselves. Such reflections have generated the influential perception in contemporary western society that science dehumanises. However, it is not science which dehumanises, but the naturalistic philosophy which is parasitic upon it.

So concerned was one scientific naturalist, Prof. Richard Dawkins, about the reactions of his readers to the 'cold, bleak message' of his earlier writings, that he wrote a book extolling the "deep aesthetic passion" of science which ranks "with the finest that music and poetry can deliver" [8]. The aesthetic experiences of scientists are not in question, but Dawkins should admit that the existence of "aesthetic passions" cannot be adequately accounted for by the creed of scientific naturalism. Francis Crick was more faithful to the creed when he wrote that science has shown that "'you', your joys and your sorrows, your memories and your ambitions, your sense of identity and free will, are in fact no more than the behaviour of a vast assembly of nerve cells and their associated molecules"[9]. Scientific naturalism *is* a bleak creed which excludes precisely those experiences in life which, for most people, make it worth living. In practice no-one lives as if science were enough.

*Naturalism depends too much on future hopes.* Scientific naturalism suffers from a strong *manyana* factor. The present inability of science to provide any significant insights into love, beauty, poetry, art, friendship, belief and moral judgments, provides a poor basis for the naturalistic claim that all these and more will be encompassed by future scientific knowledge. Yet despite these present failures, committed naturalists continue to have faith that science will one day explain everything.

## Evolutionary naturalism - a case study

No society, and no scientist, can live without ethics. Yet naturalism seems to deprive us of ethics. Naturalists have fought hard to plug this breach in their philosophical dyke. But the plug is rationally flimsy and insufficient to cope with the ethical challenges arising from the current rapid pace of biomedical research. If naturalistic assumptions are dominant, then care and protection for the handicapped, the newborn and the elderly are all likely to come under threat. The case study that follows is no mere academic exercise, but an insight into the forces that may reshape our law and morality during the course of the 21st century.

Evolutionary naturalism is a particular brand of scientific naturalism which attempts to explain all aspects of current human behaviour by recourse to evolutionary explanations, utilising the resources of sociobiology and, more recently, evolutionary psychology. Its approach is exemplified by the philosopher Michael Ruse who, in *Taking Darwin Seriously* 10, attempts to argue his way from evolution to ethics in 5 steps:

In 'Step 1' Ruse maintains that complex human behaviours, such as moral decision-making processes, can be inherited. In 'Step 2', it is claimed that these innate dispositions have, or once had, adaptive value: they increased the chance of parents passing on their genes to their descendants. In 'Step 3' Ruse proposes that the force of the 'ought' which is implicit in all genuine ethical discourse is based on such innate biological drives derived from our genetic inheritance: "Morality is a collective illusion foisted upon us by our genes.... the illusion lies not in the morality itself, but in its sense of objectivity" (p. 253). In 'Step 4' we are informed that such biological drives result in ethical impulses which, as a matter of fact, are broadly in line with traditional morality, promoting the 'values cherished by decent people of all nations' (p. 272). Finally 'Step 5' of the argument tells us that we have a moral duty to aid the process of evolution since it has generated moral beliefs rooted in 'the very essence of living beings' which are truly international in scope.

Two types of critique may be levelled at Ruse's

position, empirical and philosophical. The empirical critique relates to Steps 1, 2 and 4 and the philosophical to Steps 3 and 5. Steps 1 and 2 are not impossible in principle, but suffer from poor experimental support. There are currently no firm data supporting the genetic inheritance in humans of any complex forms of behaviour, though this is a controversial research field which awaits clear resolution. If there is no genetic basis for human moral convictions then neither, of course, can they have any inheritable adaptive value [11]. An alternative position to that of Ruse agrees that moral convictions could have adaptive value, but via the fast process of cultural transmission, rather than by the 'slow-track' of genetic change. A commonly held view amongst biologists is that genetically encoded behavioural programmes are dominant amongst animals, but that in humans the acquisition of language and of conscious intellectual processes has enabled such a rapid transmission of behavioural norms as to make arguments based on slow genetic changes redundant.

In 'Step 3' Ruse starts to run into philosophical problems. The 'is-ought' distinction (which Ruse refers to as the 'naturalistic fallacy'), pointed out forcefully by Hume and later expounded by the Cambridge philosopher G.E. Moore [12], is not so readily circumvented within a naturalistic framework. Moore pointed out that all attempts to justify moral claims by reference to descriptions of the physical world are doomed to failure. In short, you cannot derive an 'ought' from an 'is'. Ruse tries to side-step the fallacy by re-defining 'ought' so that the word no longer has its traditional sense of an implicit appeal to an objective yardstick of morality, but instead refers merely to innate dispositions. But in the process of re-defining 'ought' as a biological disposition, the force of the concept vaporises. Moral obligations founded on a disposition to do something are not really obligations at all. Furthermore, if our sense of objectivity about morality is, as Ruse claims, a genetically programmed illusion, now that this deception has been revealed by science, we can choose to ignore it.

The weakness of the naturalistic argument at this point is highlighted by Step 4 of Ruse's argument, since it is not clear how 'traditional morality' can be maintained by appeals to innate dispositions. In fact Step 4 is empirically false. In practice

people are not robots - they make genuine moral choices which vary from ethnic cleansing to caring for lepers. The biological perspective is simply that people have different urges to do different things, but biology provides no criteria for deciding why one set of urges should be labelled more 'moral' than another. Armed only with Ruse's presuppositions, we could be left describing the atrocities of the Nazi regime as yet another 'interesting' manifestation of humankind's innate dispositions. The value of the human individual **is** at severe risk within a naturalistic framework. Rachels draws the correct conclusion from his naturalism when he comments that 'The abandonment of grandiose ideas about the place of humans in the scheme of things, inevitably diminishes our moral status. God and nature are powerful allies; losing them does mean losing something'[13].

With regard to Step 5, it is odd that we should need urging to support the process of evolution when Ruse then spends the rest of his thesis arguing that moral values are as innately natural to us as having two legs. If values were really that innate, then people would promote the processes of evolution naturally by their genetically influenced moral behaviour and would require no exhortations to do so. Promoting belief in evolution as a 'moral duty', with the aim of demonstrating that evolution itself generates innate moral beliefs, sounds incoherent.

This admittedly brief sketch of evolutionary naturalism highlights, at least, how problematic is the move from biology to morality. But Christians should be careful to distinguish between arguments which are false in principle (e.g. Steps 3 and 5) and arguments which are false in practice due to poor empirical support (e.g. Steps 1 and 2). We should be wary of scientists with a naturalistic axe to grind who over-interpret their data, but equally we should not oppose a valid scientific research programme for fear it might generate data which could be misused to prop up a naturalistic argument. Ruse's thesis is inherently wobbly on philosophical grounds alone - as far as the inheritance of complex behaviour patterns are concerned, it is best to keep an open mind for the moment.

## Science, Christianity and Nature

How does the Christian understanding of nature differ from that of scientific naturalists? Christians who are scientists believe that God is the Creator and Sustainer of *everything* that exists. Through the Word, Jesus Christ, "...all things were made; without him *nothing* was made that has been made' (John 1.3). God is the prime first cause of all things. Scientists can study only the secondary causes which God has used to bring the universe, with all its diversity, into being. The scientific enterprise is possible only because of God's faithfulness in creation and there is nothing that scientists can investigate which has not been made by God. Therefore there cannot be anything intrinsically 'naturalistic' about their enterprise. The Bible has no developed concept of 'nature', with all its enlightenment-derived overtones of autonomy, for the simple reason that the word is redundant in Biblical thought - the word 'creation' renders it unnecessary. Augustine expressed the Biblical view succinctly: "Nature is what God does" [14]. By uncovering more of the wisdom and majesty of God in His creation (which naturalists call 'nature'), scientists who are Christians bring their newfound knowledge to Him as part of their worship, just as artists bring their art or historians bring the fruit of their research. Naturalism is excluded by definition.

Does this mean that there is or should be something called 'Christian science' or 'Christian algebra' or 'Christian gardening'? Not necessarily. Christians can share with non-Christians a perfectly acceptable common discourse as they experience God's common grace to humankind. The Christian gardener may analyse the state of his vegetable patch with his non-Christian gardening neighbour without recourse to explicitly theological concepts. The scientist who is a Christian does the same with her secular colleagues, since all scientists, whether they admit it or not, are studying God's creation with a shared set of methods and approaches. Therefore finding a common discourse in the scientific language of secondary causes has no naturalistic implications. It is their prior metaphysical commitment which makes someone a naturalist. Furthermore, Christians who are scientists will wish to avoid the danger of invoking God to explain something in science as if he were simply another secondary cause. In Biblical thought, God is the *author* of creation - the prime cause of all that exists.

## Christian Responses to Naturalism

Christian responses to naturalism have been quite varied:

*'Science is intrinsically naturalistic'*. The least helpful response of Christians to naturalism has been the attempt to equate it with the scientific enterprise itself. This includes the misuse of the adjective 'naturalistic' as a synonym for 'scientific', and a critique of the scientific community as being inherently naturalistic. But this view is inaccurate. Scientific naturalism is a philosophy only held by some scientists, and is not intrinsic to science itself. Naturalism refers to a prior metaphysical commitment which may or may not be held by scientists, just as it may or may not be held by lawyers, historians, butchers and car mechanics. Many scientists, probably the majority, do not believe that science can explain everything. For example, a group of 13 leading American scientists, including the President of the National Academy of Sciences, explicitly denies the naturalistic view in saying that "Religions and science answer different questions about the world. Whether there is a purpose to the universe or a purpose for human existence are not questions for science.....No one way of knowing can provide all of the answers to the questions that humans ask" [15]. The expression of such views by scientists is not uncommon.

Some scientists are vocal in the media in using science ideologically to promote their naturalism, but the proportion of believers is in fact high in many segments of the scientific community. There are strong resonances, both historical and contemporary, between Christianity and science [16]. In 1916 42% of American scientists believed in a personal God who answered prayer, and in 1996 a repeat survey using identical questions found a figure of 39.3%, hardly suggestive of a massive swing to naturalism in the scientific community during the course of the 20th century [15].

*'There are different kinds of naturalism'*. A response of some Christians to naturalism is to maintain that there are two kinds of naturalism, the acceptable and the unacceptable. The unacceptable form is labelled 'ontological naturalism' [*ontology*: the study of existence, of

being], another name for the naturalism as defined in this paper. The supposedly acceptable form is labelled 'methodological naturalism'. If the term merely refers to the shared methods and procedures used by scientists, whether Christian or non-Christian, in their research, then the concept is benign, but the terminology inaccurate. For Christians who believe that all their science without exception is but 'thinking God's thoughts after him', as the astronomer Johannes Kepler expressed it, the study of God's creation can in no way be naturalistic. The 'heavens tell the glory of God' (Psalm 19.1) and 'the earth is the Lord's, and everything in it' (Ps. 24.1). There is nothing naturalistic about investigating God's heavens and God's earth using the methods of science, so the term 'methodological naturalism' is inappropriate. The Christian scientist should no more exclude the Lordship of Christ from their research than the Christian politician, economist or factory worker.

*Naturalism is incompatible with Christian theism.* A more appropriate response is that scientific naturalism is simply incompatible with Christian faith. Naturalism is a rival metaphysical world-view to Christianity but, in distinction to post-modernism, both the rivals believe that there is a real world which requires explanation. Naturalism attempts an explanation which assigns priority to scientific knowledge to the exclusion of other valid forms of human knowledge. In contrast Christian explanation is based on Biblical revelation. This undergirds science as one valid source of knowledge, but also goes well beyond science. The existence of a finely tuned universe, and within it conscious observers, is explained by a personal creator God who has plans and intentions for his creation, encompassing both human life and human death. The possibility of science is explained by the faithfulness of God in maintaining consistency in the properties of matter, although on occasion God can and does choose to act unusually in his creation in miraculous events. The worth of each person is guaranteed because based on the personhood of God who loves each individual. In God's creation order, greater value is assigned to a handicapped baby than to a healthy monkey, and the human individual and human relationships have priority in the ethical decision-making process.

So Peter, Susan and Jonathan will generate a very different society if their metaphysical

allegiance changes from naturalistic to Christian faith. Their world-view will also become rationally more defensible, for Christianity provides a framework in which the scientific elegance and fruitfulness of the world, as well as human hopes and fears, good and evil, life and death, can all be integrated within a coherent model. It generates a holistic view - science with a human face.

## Naturalism - the Death of Science?

Scientists, as well as the general public, often assume that the scientific enterprise will continue indefinitely. But intellectual movements have endings as well as beginnings. On purely pragmatic grounds, the present integration of science and technology into the world economy makes it unlikely that science will be neglected in the near future. In the longer term, however, scientific naturalism provides a very insecure foundation for the future health of science.

There are compelling grounds for thinking that the development of modern science in medieval Europe was facilitated by a justification of human knowledge based on Christian theism. God the creator and law-giver acted as guarantor of the consistency of the properties of his creation. Since scientific knowledge was rooted in God's faithfulness in creation, and human observers were gifted by God with reason and curiosity, it was viewed as reliable knowledge. But scientific naturalism contains no such foundation for the validity of science. Ironically it is the philosophy which enthrones science which simultaneously subverts it, for science provides no resources for justifying itself<sup>16</sup>. Lacking solid foundation, it is a small step from naturalism to the post-modern trivialisation of scientific knowledge.

At an ethical level the scientific community, like the rest of society, can only function as it practices values which resonate with its Christian roots, such as truth-telling and cooperation. Currently these are maintained within the community largely on utilitarian grounds, but those grounds may eventually prove insufficiently robust. Naturalism has no resources to generate or justify such values. As a philosophy it provides a poor option for the healthy functioning of the scientific enterprise.

At the level of public perception, if scientific

naturalism becomes equated in peoples' minds with the scientific enterprise *per se*, then it is likely to create its own backlash: naturalistic philosophy is ultimately dehumanising and cannot generate an adequate foundation for moral values. Evidence suggests that such a backlash is already in progress in western societies. Scientists who try to prop up their naturalistic ideology by appeals to scientific advances do science a disservice.

## Conclusions

Scientific naturalism has inherent philosophical weaknesses which many secular writers find crippling to its cause. Most importantly, its bleak creed excludes great swathes of human knowledge and experience which play a large role in the daily lives of all people, not least in the lives of scientific naturalists. The weakness of the naturalistic position is well illustrated by the failed attempt to extract ethics out of biology. Despite the incoherence of the naturalistic position, it is still propagated vigorously in public and educational discourse. Christian responses have sometimes failed to hit the target, by mistakenly identifying naturalism with science *per se*, or by implying that scientific methodologies are intrinsically naturalistic. A Biblically based response will emphasise a robust theism in which God is seen as the creator and sustainer of all the secondary causes which scientists investigate. The Christian world-view succeeds where naturalism fails: it provides a coherent explanation for the origin and consistent properties of the universe, which make science possible, and for the richness and ultimate purpose of human existence, which make life worth living.

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