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Editorial

The following editorial was invited from Sam Berry, Professor of Genetics at University College London, to mark his retirement as President of *Christians in Science*.[1]

More than a quarter of a century ago I wrote a paper on the cause of multiple (or disseminated) sclerosis,[2] a horrible and progressive disease in which the conducting parts of the nerves break down leading to increasing physical and eventually mental disability. The reason for my interest was disbelief in the common assumption that the disease had a single cause: trauma, infection, diet, accelerated ageing, electromagnetic radiation, genes, immunological factors were all implicated and advocated by different researchers. But the fact is that multiple sclerosis has a multifactorial basis; several causative agents interact together to produce the illness. A multifactorial aetiology is now generally accepted, confirmed by the discovery of an association between the disease and particular haplotypes of the major histocompatibility complex, clinical responses to immunomodulation and the probable involvement of retroviruses,[3] but 30 years ago most neuroscientists were unwilling to believe that any cause other than their favourite was critical.

A large number of people treat their faith with the same Stone Age simplicism as the previous generation of multiple sclerosis workers, sometimes defending their interpretation with ingenuity and erudition. Events (be they malign, benign or neutral) are assumed to have 'A' cause. The proximate or effective cause may be precipitated by a previous one, but their belief is that events can be explained by a simple mechanism. Don Cupitt expounded this naivety with lucidity in his television series *The Sea of Faith*.[4] One of its effects he pointed out, is that the wrath of Bible believers tends to be directed at Charles Darwin. The earth as a machine was accepted without much difficulty; but 'religion was more badly shaken when the universe went historical in the nineteenth century than it had been when the universe went mechanical in the seventeenth century'.[5]

1 I am grateful for this invitation, and for the privilege of serving as President of CiS. I became President in 1992 when the Committee realized that CiS had a number of Vice-Presidents, so logically there should be a President as well. The President serves a wholly decorative function, but it has been good to remain in touch with the Committee as it expands its activities and the influence of sensible scriptural thought on professional scientists, and towards both Christians and non-Christians outside science.

2 *Acta neurologica Scandinavica*, 45: 459–483, 1969.

3 Dick, G. (1975). The aetiology of multiple sclerosis. *Update for September* 547–567; Compston, A. (1993). In *Brain's Diseases of the Nervous System*, 10th edn: 366–8. Walton, J. (ed). Oxford University Press.

4 Published in London by the BBC, 1984.

5 *Sea of Faith*, p.58.

The reasons for the difference in attitude towards a mechanical world as opposed to an historical one is for historians and philosophers to debate—and they do, at length.[6] But there is one clear distinction between a machine and an event in time: a mechanism is repeatable and may be substitutable, whereas historical happenings have lasting, often unique consequences. For example, seismic events have well characterised effects in terms of crustal deformation, release of gases and particulate matter into the atmosphere, etc; *particular* seismic events such as the putative cometary collisions that resulted in mass extinctions in the Cretaceous, the volcanic eruption that is believed to have destroyed the Minoan civilization, that of Vesuvius which buried Pompeii, the Lisbon earthquake of 1755, and more recently Mount St Helens and Pinatubo have had permanent effects on biological and human history.[7] We live in a world which has changed with time, not a universe in equilibrium with itself, which inevitably reverts to an ideal condition when disturbing constraints are removed; the balance of nature is a myth, owing more to Greek philosophy than to a God who 'sustains the universe by his word of power' (Heb 1:3).

Put crudely, living in an automatic world requires adjustment but little conscious awareness; living in a dynamic system means that we have to be constantly prepared to make new responses, and leads to many more searching questions about meaning and purpose than those posed by a static, predictable environment. Darwin destroyed the credibility of creation as a perfectly designed watch presided over by Paley's benign Cosmic Mechanic. He left a choice between Jacques Monod's nihilism and Richard Dawkins's blind watchmaker on the one hand, or an active, upholding deity on the other. The former raises more problems than it solves; the latter is much closer to the God of the Bible and historical Christianity than the rationalist Being of the Enlightenment.[8] The advances of science have forced religious questions on us which we might otherwise evade; that is why (conventional) 'religion was shaken when the world went historical in the nineteenth century'.

It follows from this that an understanding of the world as revealed by modern science is a proper and necessary pre-evangelistic activity. The man on the Clapham Omnibus (together with his wife, family and acquaintances) tends to simplify his life by a naive belief in simple

6 See, for example: Russell, C.A. (1985). *Cross-currents*. Leicester: IVP Durant, J. (ed) (1985). *Darwinism and Divinity*. Oxford: Blackwell. Livingstone, D.N. (1987). *Darwin's Forgotten Defenders*. Edinburgh: Scottish Academic Press. Brooke, J.H (1991). *Science and Religion*. Cambridge: Cambridge University Press.

7 A spirited celebration of the importance of rare events in geological history is by Derek Ager (1993). *The New Catastrophism*. Cambridge: Cambridge University Press.

8 Ernst Mayr (*The Growth of Biological Thought* (1982). Cambridge, Mass: Harvard University Press) has pointed out that 'By introducing the time factor, Lamarck had discovered the Achilles heel of natural theology. It would be possible for a creator to design a perfect organism in a static world of short duration. However, how could species have remained perfectly adapted to their environment if this environment was constantly changing and sometimes quite drastically?' (p.349).

causation, and is abetted in this by the doctrinaire reductionism of some scientists,[9] ranging from rabid molecular biologists to over-optimistic physicists seeking a 'Theory of Everything'. Real science describes the 'real world,[10] and the real world is not simple. As with multiple sclerosis, complex events have a complex of causes, often acting on different levels.[11] We do ourselves and the world in which we live a disservice by misinterpreting scientific understanding as nothing more than an indefinite extension of a few simple interacting quanta, in principle derivable from the Big Bang (wherever that came from).

The conclusion from all this is that Christians who are scientists have a three-fold task:

1. To describe and explain the world in which we live;
2. To expound the relationship between natural and revealed truth (God's complementary Books of Nature and the Bible), in particular the relevance and plausibility of God's sustaining and redeeming work[12]; and
3. To witness to a responsibility and stewardship for God's world, which he has entrusted to us and in which he both blesses and empowers us in his service.[13]

9 Operational or methodological reductionism is a necessary part of the scientific enterprise; it should be distinguished from doctrinaire (or epistemological) reductionism which assumes that any whole is no more than the sum of its parts, so that complex parts or behaviours can always be broken down to simple or fundamental elements.

10 Richard Dawkins (*River out of Eden* (1995). London: Weidenfeld and Nicolson) is correct: 'There is a fashionable salon philosophy called cultural relativism which holds, in its extreme form, that science has no more claim to truth than tribal myth: science is just the mythology favoured by our modern Western tribe. . . . Show me a cultural relativist at thirty thousand feet and I'll show you a hypocrite. Airplanes built according to scientific principles work. They stay aloft, and they get you to a chosen destination. Airplanes built to tribal or mythological specifications, such as the dummy planes of the cargo cults in jungle clearings or the beeswaxed wings of Icarus, don't' (pp.31–2).

11 Michael Polanyi and especially Donald MacKay have explored this in depth. See, for example, MacKay's Gifford Lectures, *Behind the Eye*. Oxford: Blackwell, 1991.

12 Berry, R J (1986). What to believe about miracles. *Nature, Lond.* 322: 321–2; (1995). Creation and the environment. *Science & Christian Belief*, 7: 21–43.

13 The sort of thing I have in mind are the essays by scientists in Berry, R.J. (ed) (1991). *Real Science, Real Faith*. Eastbourne: Monarch. Each one of them received the same invitation: to write about his or her faith, and how this affects and is affected by the practice of science. I concluded the chapter I wrote, 'Of course, we are called to speak of Christ and his saving grace whenever possible, but it must be in the context of a life and attitude which demonstrates the saving ('making whole') and transforming work which he has and is doing in individuals and communities alike. Science and faith have different methodologies, but they are complementary, not contradictory; a faith without reason is as stultifying as a reason without faith.'