

Working hypotheses in science

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Is criticism allowed in scientific debate?

A scientist is constrained by the climate of opinion of others in his area. A recent journalist's article (Booker 2010) states that scientists are under strong peer pressure to conform to majority opinions. Specifically, he asserts that scientists are often not free to doubt aspects of Darwinian evolution, or of the prevailing model (CO₂ in the atmosphere) of climate change. This author is perhaps himself a partisan of Intelligent Design (ID), (which is not being advocated here), or a climate sceptic; but something may still be learned from his viewpoint. Without listening to critics, no one can mend the holes in an accepted theory.

Many questions in the field of evolution turn on specialist issues in palaeontology; all that can be done here on such things is to cite references where these matters are surveyed.

A legal mind may dismiss an argument because it has not been properly formulated. Yet the inadequate view may point to an important issue for the argument. This may be the case with ID, which does not seem to be science and has been theologically criticised. Is God involved in all creation, rather than episodically patching things? Yet ID warns that a world picture is very inadequate if ethics and intelligence only enter as insignificant by-products. Magee (1973) has remarked on an approach from Popper who sought first to strengthen an opponent's argument, and then (convincingly) demolish the strengthened argument.

It also happens that scientists in some Christian colleges may be not free to say anything about evolution except to dismiss it. This is not a new social phenomenon. De Toqueville (1835) refers to the 'tyranny of the majority' inhibiting political discussion. This seems to happen automatically when partisan lines are drawn on some large, disputed issue.

A predictive theory may still leave an enquirer wondering why?

Questioning Darwin

Various aspects of Darwinian evolution may be seriously doubted — if one is allowed to. Gould (see Conway Morris 2000) pointed out that evolution may not proceed smoothly, but by jumps.

On a number of disputed matters, people often have real and serious concerns, but the case they present is faulty. It may then not be difficult

to refute their arguments; but their concerns remain untouched. This is so with the advocates of ID.

To point out that, for example, the eye might possibly have evolved, rather than being 'irreducibly complex', and to stop there, is only leaving the ID advocates the choice of either following the 'evolution explains everything' view of Dawkins, or of abandoning a scientific approach.

Some others however hold that if the evolutionary tape were re-run, the outcome might be quite different. McGrath (2009) also discusses the case for convergence, which implies that evolution 'converges on a relatively small set of ... opportunities that the environment offers to life'. Conway Morris (2005) sees in the fossil record, evidence for evolutionary convergence.

Christian views

ISCASTians (scientists who are Christians) in particular, should do better than that. Those (whether Christians or not) who hold that intelligence and purpose, as well as ethics, form essential parts of the universe, cannot accept a position which makes these qualities merely accidental and disposable results of a purely random process. In Conway Morris (2005), the evolutionary model has 'islands of stability'; although random processes are involved, not all outcomes are possible. A Christian may distinguish between God as a 'primary cause', and 'secondary causes' that science may study (see also MacGrath 2009).

To state that 'it is all God's world' becomes a meaningless platitude if our system excludes God from any continuing role in the world. What difference would it make if God were not there? Newton's deterministic universe required God to set the initial conditions. Hawking does not even require that. But one wonders where, for example, the initial state of low entropy came from?

This discussion does not seek to demolish evolution. But the current theory of evolution cannot account for everything that happens. Moreover, mechanistic theory has no good place for interaction with mind, intelligence and purpose. However, to point to gaps in a theory for which there is substantial evidence, is not enough to discredit all of it. Some people have made confusion by hijacking the ideas of the theory of evolution to support notions of 'social Darwinism' with disastrous results in the 20th century.

Some limits of science

To state that a proposition is 'not science' does not mean that it is 'nonsense' or 'meaningless'. Nor does it imply that the idea must not be discussed or taught. Medawar (1986) pointed out that not all questions raised in science can be answered in science and those which cannot be answered are not to be regarded as 'non-questions'.

That there is indeed a limit upon science is made very likely by the existence of questions that science cannot answer, and that no conceivable advance of science would empower it to answer. I have in mind such questions as: How did everything begin? What are we all here for? What is the point of living? Doctrinaire positivism – now something of a period piece – dismissed all such questions as non-questions or pseudo-questions such as only simpletons ask and only charlatans profess to be able to answer.

An evolutionist is allowed to refute the conjecture that the eye could not have evolved, by proposing a pathway by which it conceivably might have evolved. He is not required to show that the pathway was at all likely to have so happened, or that an environment required for it to happen could have persisted for a long enough time. However, this method of argument can be applied elsewhere. In proposing a working hypothesis of how God may have interacted with the world, or how the universe may not, after all, be completely deterministic, there is no need at the outset to prove the hypothesis, provided it is consistent with observations. (See Polkinghorne, 1985, Craven, 2006 and also the discussion in Edwards, 2010).

But the gaps need attention. For example, Clarke (2010), discussing brain function and free will, remarks that 'at the lower level of physical law, determinism seems to be complete'. One may remark that 'chaos' enters at a higher level of non-quantum mechanics and differential equations. Bennett (2010) comments that 'the link between environmental change and evolutionary change is weak – not what Darwinists might have predicted'. More conjecturally, Geffter asserts that:

The scientific study of morality is the lever that, when pulled, will completely dislodge religion... we will have a thoroughgoing understanding of human flourishing which will include even the most rarefied and traditional 'spiritual' states of human consciousness.

Geffter 2010

But he offers no suggestion as to how.

Murphy and Ellis (1996) address some of these issues by looking at increasingly complex systems. They show how contemporary sciences actually support a religiously based ethic of nonviolence, not by appealing to the Enlightenment's mechanistic Creator God or revelation's Father God but by discerning the transcendent ground in the laws of nature, the emergence of intelligent freedom, and the echoes of 'kenotic' self-giving in cosmology and biology.

Moreover, a system need not change continuously as its complexity increases; there could be jumps in the system's behaviour. This is suggested by the mathematical study of 'chaotic systems', where such jumps often happen.

How we may proceed

As noted above, Magee (1973) refers to Popper's approach where, instead of picking weak points in an opponent's case, he first tried to strengthen that case by mending details and then sought to demolish the case at its best. If ID were so approached the assertion that the eye, or (better) the beginning of life, was irreducibly complex would be replaced by a falsifiable hypothesis that it was extremely unlikely to have evolved in the available time and environment, without some external factor acting. We must offer a working hypothesis which has room for intelligence, purpose, ethics, as well as physical laws. This will require more than science.

Acknowledgement

This author is not a biologist, nor a geologist, and must refer many important questions to those who are. He thanks a reviewer for pointing out many important omissions and references.

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