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DUMB LUCK AND JELLYFISH EYES

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It is widely believed that evolutionary theory teaches that it is simply a matter of dumb luck that the universe ended up producing intelligent human life, and that if we re-played ‘the tape of life’ a million times it is unlikely that anything like *homo sapiens* would ever emerge again.

Some people, like the eminent evolutionary biologist and popular science writer Stephen J. Gould, have claimed this¹ on the basis of paleontological findings (such as the well-preserved fossils found in the Burgess Shale of the Canadian Rockies) and have argued that this randomness is evidence that evolutionary theory is unlikely to be compatible with belief in God. Gould described himself as an agnostic, but others have taken the argument further and see this as a definite support for atheism. Others have argued, on theological grounds, in quite the opposite direction, saying that because a belief in the providence of God is incontrovertible, that it is evolutionary theory with its random processes which must be wrong.

Still others have sought a mediating position, represented by the work of British palaeontologist and Anglican Christian Simon Conway Morris, which is that evolutionary theory is not to be construed as a random or un-directed process, but rather has a definite predictability and is completely consistent with the notion of God.

This is a position which is certainly preferable to the polarisation of having to choose *either* God *or* evolutionary theory but, in a curious quirk, if we take some good theological advice from a well known agnostic (!) we may find that even this mediating position is unnecessary. It could well be (depending on your theological orientation) that the theological side of the debate is mis-construed and in need of re-framing. But more on that later.

Gould’s greatest contribution to science was probably his theory of punctuated equilibrium (the idea that there are long periods of evolutionary stability punctuated by occasional periods of dynamic change and evolution). Ironically, he gave special credit to Conway Morris for his work on the Burgess Shale, but Conway Morris actually comes to a very different conclusion with the same evidence. Conway Morris sees evolution as converging on certain life solutions. The camera eye (the kind of eye shared by humans and jellyfish) is one example. This remarkable structure which has generally been assumed to be “too irreducibly complex” to develop progressively (on the basis that the various component parts which would need to evolve first would have no evolutionary advantage which could enable them to survive until the complete eye emerged) has actually emerged separately up to

¹ Stephen Jay Gould, *Wonderful Life: The Burgess Shale and the Nature of History*, (New York: Norton, 1989) 289.

seven times. This is evidence, according to Conway Morris, that the eye will always evolve – and so will many other physical characteristics such as sex, flight, fur and photosynthesis. So necessary and predictable are these developments that if we are ever visited by aliens Conway Morris is sure that they will look at us with camera eyes.

However, it is human intelligence that Conway Morris is really aiming at, “If this book happens to serve no other purpose than act as a compilation of evolutionary convergences... then that will be sufficient. But, of course, the net is in pursuit of a much bigger prey. Its main, but not ultimate, aim is to argue that, contrary to received wisdom, the emergence of human intelligence is a near-inevitability.”²

But the argument is then pressed even further. The overall predictability of evolutionary theory becomes evidence for divine creation. Of course, it is often assumed that science proceeds entirely according to objective principles which operate quite independently of the religious beliefs of the scientists involved. But that is not exactly the way it happens! Indeed, in some respects it should *not* happen that way because subjectivity – including intuition, wild guesses and religious and philosophical presuppositions – have all been important parts of significant scientific developments.

This deep connection of science and faith (or anti-faith or philosophy or worldview) can be made without suggesting that either Gould or Conway Morris have been anything other than scrupulously scientific in their work. Yet there is a sense in which our presuppositions lead us to look in particular areas – often with great results. This form of guidance (or intuition or whatever it is that motivates) is critically important for science – it is the power which actually produces innovative results. We all tend to look for what we believe we will find (it seems to make little sense to look elsewhere) and what we do with the evidence is undoubtedly influenced by our overall view of the world.

The believer who sees faith as contradicted by evolutionary theory, the skeptic who sees evolutionary theory as evidence of atheism and the faithful evolutionist who sees a congruence between the two are all searching for (or arguing against) some form of natural theology – a theology which is based on (or, for skeptics, denied by) reason and our experience of the world. There is a long tradition of natural theology extending back thousands of years³ but there is also a long tradition of questioning its real value. Considering the matter from a purely theological point of view can God actually be proved? Should we expect human reason to really reach so far as to find God? And even if there is order, does it prove the kind of God that Christians worship or simply some form of impersonal architect or designer?

² Conway Morris says there are four main conclusions to his *Life's Solution: Inevitable Humans in a Lonely Universe* (Cambridge University Press, 2003) “ First, what we regard as complex is usually inherent in simpler systems: the real and in part unanswered question in evolution is not novelty *per se*, but how it is that things are put together. Second, the number of evolutionary end-points is limited: by no means everything is possible. Third, what is possible has usually been arrived at multiple times, meaning that the emergence of the various biological properties is effectively inevitable. Finally, all this takes time. What was impossible billions of years ago becomes increasingly inevitable: evolution has trajectories (trends, if you prefer) and progress is not some noxious by-product of the terminally optimistic, but simply part of our reality.”

³ Thomas Aquinas, just to take one example, argued that “We see that things ... act for an end ... it is plain that they achieve their end, not fortuitously, but designedly. Now whatever lacks knowledge cannot move towards an end ... therefore some intelligent being exists by whom all natural things are directed to their end; and this being we call God.”

So while there are those who see scientific findings of the kind which emerged from the Burgess Shale as having theological implications (going, as we have seen, in various directions) others are more circumspect about their value. One reviewer of Conway Morris, the agnostic (but theologically aware) philosopher of science Michael Ruse, observes "I am uncomfortable with any natural theological approach that tries to support belief by appeal to nature. Too often, scientists change their minds, and the believer is left to scramble to shore up religious claims that no longer have strong empirical support. Far better to go with a theology of nature, that starts with faith, and then delights in the creation, whatever its nature and our contemporary understanding."⁴

There is wisdom in this, especially for those whose theology is founded upon the special revelation of God in Jesus Christ rather than upon observations in the natural world. However, the one who looks with eye of faith will see the world in a way that others what others do not and so we can undoubtedly celebrate what Conway Morris has done because even those who prefer a strong theology of nature (rather than a natural theology) need not rule out some element of confirmation about God based on what is observed around us. Indeed, it is essential that there not be the kind of incongruity between one's theological convictions and the evidence of the natural world of the kind which exists in some creationist schemes. But the real point of a theology of nature is not to identify mechanisms or adjudicate on scientific theories, it is to point to the one true God who is the Creator and redeemer of all.

In all of this one must avoid having a view of God that is simply too small. If Conway Morris is wrong and there is a genuine randomness or an un-directed nature to the world (necessarily understood according to the perspective of we who live within this universe) which would lead us to conclude, for instance, that this world and our existence was an improbably, amazingly 'random' and unrepeatable event (as suggested by Gould) would this necessarily constitute evidence of a world outside the providential care and control of God? Or would it not simply speak of humanity's inability to comprehend the mysteries of God's work in the world?

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⁴ Ruse, Michael. 2004. "Life's Solution: Inevitable Humans in a Lonely Universe". *Palaeontologia Electronica*, 2:3, book review 2, 111KB; found at <http://palaeo-electronica.org/paleo/toc.htm>