

Richard Dawkins

How a scientist changed the way we think

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This is a collection of short essays on Dawkins contributed by a motley crowd of fellow biologists, sociologists, philosophers, psychologists and the intermittent reverend or spouse. On the cover is displayed a portrait of the man himself, looking very much like a saint, his clear and sincere gaze fixed on something obviously very far away. As a collection of essays it is invariable of variable quality and interest. Some of the contributions by naturalists are embarrassingly insipid, while the critical assessment of memes (a science in search of a subject) by Aunger is refreshingly candid.

So what is so great about Dawkins? The answer is almost immediate - 'The Selfish Gene', a book which at the time it appeared¹ made a splash, and has since then sold in a million copies² and deeply influenced a significant number of serious readers. So the next natural question is what is so great about the 'The Selfish Gene' apart from a catchy title? After all Darwinism had been with us for over a century when the book was published. True original Darwinism was not complete, it only became so when combined with Mendelism (supplying an explanation for the mechanism) in the first decades of the past century, resulting in a great synthethis in the forties, and with the elucidation of the DNA molecule in the fifties it became firmly anchored to hard science; but later developments have never diminished the original insights of Darwin, on the contrary made him appear even more prescient, and biologists as a consequence treat Darwin with a degree of reverence unequalled in any other scientific field³ What Dawkins did was to try and draw the ultimate conclusions of Darwins evolutionary theory, doing away with the few remaining sentimental notions as exemplified by the idea of the good for the species, and drastically centering the action of evolution on the single gene. In the end, as one of the contributors notes, Dawkins realised that biology is about information, its preservation, transmission and accumulation. The great and wonderful complexity of the natural world, of which we men are integral parts whether we acknowledge it or not, has been built up not by some top-down approach of design, as we know of it, but by a blind

¹ Thirty years ago as a matter of fact, the decimally round number giving an excuse for the retrospective which the collection constitutes

² To be compared with the ten millions of 'The Naked Ape' peddled by Desmond Morris in the 60's. It shows that even when a serious book on science addressed to a general public does rivet attention and becomes something of a cult phenomenon, it cannot rival the greedy attention caused by a more publicly attuned piece pandering to the tastes of a wider public.

³ Physicists naturally pay homage to Newton and Einstein, but they do not elevate them to Gods, only give them pride of place among almost equals. To find parallels in intellectual history one needs to be reminded of Psychoanalysis and Marxism.

bottom-up approach involving local algorithms. The genes (never mind that it is far from straightforward to isolate them as individual entities) provide the building-blocks so to speak, mindless entities with no foresight only blindly following a gradient, which Dawkins metaphorically denoted by 'selfishness'. That very notion, ridiculous as all metaphors are when taken too literally, was a stroke of genius. It caught the fancy of the reading public who for the most part was scandalized by it. If we are built up by selfish genes, does that not mean that we are selfish at the core? And not only that, if selfishness was what made things go around (and not money after all) did that not mean that everything was permeated by it, providing as it did the ultimate mover? A most depressing thought for most of us, incidentally including Dawkins himself, who claimed that we finally as human beings were free to break the chains the genes had forged for us and transcend their petty agendas. If you think about it it is a remarkable statement to which I will have occasion to return.

Dawkins book did not appear in a vacuum. The year before (i.e. 1975) the ant-specialist E.O.Wilson had made a stir with his book 'Sociobiology' in which he sought to explain much of human behaviour, including culture, as epiphenomena of evolution⁴. Wilson was bitterly attacked, not least by his fellow colleagues Lewontin and Gould at Harvard. He was accused of biological determinism with a concomitant hidden agenda of conserving social differences by spuriously legitimizing them by evolutionary science⁵. Dawkins book, conceived and written before the advent of Wilsons was seen by many as another contribution to the debate providing support for the beleaguered Wilson. Dawkins in the beginning held himself aloof from Sociobiology, but when the attacks on it became too venomous he could not but abstain from a certain reluctant support. Gould himself started the year after (1977) to educate the general public on the subtleties of evolution in a monthly column of the Magazine of the museum of Natural History. Those columns were regularly collected into books and met with a big popular success⁶. The difference between the two popularizers Gould and Dawkins was that while the former stressed accidental contingencies, and in particular claiming that ultimately there is no such thing as progress in evolution; the latter stressed the iron-claw laws of relentless adaptation⁷. Gould almost never invokes mathematics in his presentations, while with Dawkins it is close to the surface, but of course given the nature of the enterprise never allowed to break

⁴ Among other things it set out to explain how altruistic behaviour could evolve in spite of each individuals (or genes) subconscious 'desire' to propagate himself. The explanation was playfully advanced already by Haldane in the 30's, and given more substantial mathematical verification by Hamilton in the 60's. In fact Wilsons book made the latters work emerge from the obscurity of the technical journal

⁵ One may be reminded by the hierarchial claims by previous generations of racial biologists, which clearly inspired many of the more vocal detractors of Sociobiology seeing the latter as a recent reincarnation. A few years earlier Herstein and Jensen had caused an uproar by their inquiries into IQ-differences between races. Such avenues of inquiry were clearly not, in modern parlance, politically correct.

⁶ which may have gone to his head. His first essays were very informative, while his later became so selfconsciously verbose as to become close to unreadable

⁷ As to the theological question of progress of evolution one contributor asserts that Dawkins adheres to this view, if not (so far) ever explicitly announced.

out into the open⁸. Dawkins was, like his older colleague Maynard-Smith, a pioneer of applying computers to biology, and in his sequel 'The Blind Watchmaker' his fascination with computers and programming shines through very clearly⁹. Incidentally the association of mathematics with biology, unlike the case of intimacy of physics with mathematics, is one characterized by mutual suspicion. Biologists in general, by temperament and training, remain mathematically illiterate; while mathematicians tend to scoff at the pedestrian nature of the mathematics involved in the biologists' mathematical model. The subject is too complicated to be treated exhaustively in a digression of a mere review, so suffices it to remark, that unlike the case of physics, there seems to be little if any mathematical feedback from biology. The intuition of a physicist can do wonders to a mathematical problem, but as far as I know, no biologist's intuition has ever led to any significant mathematical insight. Most mathematical applications to biology seem to be of the almost intractable computational kind¹⁰ rather than involving beautiful mathematical concepts.

Darwin caused a furor with his 'the Origin of the Species', making him go easy and postpone on his 'Descent of Man' in which those very principles would be explicitly applied to Man himself; and even a century later, further popular elaborations on Darwin's ideas, cause discomfort, this in striking contrast to the case of physics, where weird and outlandish theories produce nothing but disinterested fascination and momentous misunderstandings. Clearly the subject touches a nerve that is absent in the case of physics and modern cosmology. That nerve is clearly Religion or more generally the notion of a transcendent 'Meaning' to our existence. The reduction of life with all its wondrous complexities to mindless algorithms causes a general discomfort often deepening into rage. Where is there space for Religion and the Spiritual in such a relentless materialistic universe? One may naively have thought that the mechanical Newtonian Universe would have been even starker and more inhuman, but by virtue of being so clockworkish and simple it appeared to make a clear dualistic distinction between the material world governed by physical laws and the world of the soul one of whose manifestations incidentally was the Newtonian Worldview. Evolutionary biology on the other hand professed to explain more, and in so doing invaded on very sensitive turf indeed. And indeed Dawkins is a passionate enemy of intellectual obscurantism of which religion is the epidemic (this is why he looks so saintlike on the cover portrait). It is tempting to dismiss Dawkins' anti-religious crusade as being based on a simplified and distorted view of Religion, one in which its superstitious characters as well as its history of appalling intolerance are emphasized at the expense of its psychological subtleties. Gould, whose religious sensitivities had been allowed to escape such severe curtailment, predictably took a more tolerant view, ultimately proposing a dual world-view in which science and religion were allowed non-intervening spheres of interest and inquiry. Dawkins would have no truck with such a duality, compromise is not in the books, intellectual honesty demands that you make a choice. The Universe should

⁸ Many mathematical biologists did not consider Dawkins' book a serious work as it did not entail any explicit mathematics.

⁹ Making him a darling of the computer-scientist, who may more than any others (the biologists included) taken his books to their hearts

¹⁰ In biochemistry one is reminded of the problem of predicting the geometry of the complex molecules that constitute enzymes, the actual shape of those being a clue to their bio-chemical behaviour

be explained by simple unifying principles everything beyond should be shaved away by Occam. Still it would be simple-minded to assume that Dawkins, because of his adherence to simple inhuman principles would be morally indifferent. The very passion of his anti-religious bent betrays something of a religious temperament. And in his exhortation, referred to above, that we humans have the opportunity to transcend the slavery of genetic determinism there is something of a religious vision. Humans are filled with contradictions, and disciplines of inquiry can never be complete as they would if so invariably involve specious self-references.

Dawkins has been accused of genetic determinism, whatever that means. Clearly in his book he does not make an attempt to clearly delineate the extent of influence of the genes. That the influence is greater than we would like to think constitutes one of the books main missions, but his very reference to the supposed tyranny of the genes shows that he does not believe, contrary to vulgar misconception, that the influence is all-comprehensive. But the general principle of evolution is so general so abstract indeed, that it should apply to other things than genes (and implicitly open up vistas of development beyond the reach of the gene). In fact the very emergence of the DNA molecule¹¹ poses the intriguing question of chemical evolution, of which so far there can only be wild speculation. By presenting a few more or less ad hoc criteria he playfully proposes the self-replicating notion of a meme¹² at the end of his 'Selfish Gene'. The suggestion was never meant to be taken too seriously, but the author as a fallible human being must be somewhat excused that the wide attention accorded his fancy played up to his vanity and that he later takes to count its numbers of hits on the internet. Hardnoosed biologists¹³ always were sceptical about the notion pointing out for one thing that although genes may not be canonically defined sequences of DNA codes; memes, whatever they are, show a far more nebulous character. More seriously the distinction between genotype and phenotype, on which so much of Dawkins thinking and insights have been focused¹⁴, is blurred. Thus it is salutary to find in the collection the above-mentioned debunker by Aunger, the heart of which centers on its indirect route of replication¹⁵.

A collection of this kind inevitably comes close to hagiography. More than one contributor finds himself exalting Dawkins as one head higher than other intellectual luminaries he has had occasion to encounter. Also the prose of 'The Selfish Gene' comes into fulsome praise, as part of the explanation of its success. But all of this comes with the territory,

¹¹ What is Life? Why is all earthly life ultimately based on DNA? Given the great variety of life, from simple bacteria to the minds of men, why could there not be many competing systems based on different macro-chemistries?

¹² Mental concepts from simple jingles to metaphysical systems amendable to communication from mind to mind

¹³ Maynard-Smith among others

¹⁴ Many contributors phrase his 'the Extended Phenotype' very highly, indicating that it is in fact a more serious and interesting book than 'The Selfish gene' the ostensible object of celebration.

¹⁵ A meme that is reproduced by speech or writing (it comes ultimately to the same thing) goes through a completely different stage from its mental residence involving the very complicated process, needless to say but poorly understood, of which humans interfere meaning from symbols. A process which should be contrasted to the very simple and mechanical replication of genes.

and in as far it does not embarrass the one who is being celebrated it may give him some innocent pleasure.

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