



The Selfish Meme

Kate Distin, Cambridge University Press, 2005, ISBN 0521606276, Paperback, £14.99

Biological evolution is the cumulative change in the frequency of heritable material over time. By heritable material, we mean material that is passed down the generations. Following Mendel's laws of inheritance, the material that is responsible for the resemblances between parents and first or subsequent generation offspring, is split into independent units that we have come to know as genes. The reasons for changes in the frequency of different forms of genes (alleles) are varied, including random genetic drift, the biases in the behaviour of the heritable material (DNA) itself, and the diverse array of types of selection that can be grouped together under Darwinian processes. Much of evolutionary science focuses on this latter type of evolution, selective or Darwinian evolution. Kate Distin's *The Selfish Meme* addresses an alternative type of Darwinian evolution. Here, although the selective mechanisms involved are the same as those that biologists will be familiar with: reproduction, fecundity, survival – the elements that comprise fitness – the heritable material is different, as in consequence is the unit of selection, for here we move from gene to meme.

A meme is defined as 'a unit of cultural inheritance, hypothesized as analogous to the particulate gene, and as naturally selected in virtue of its phenotypic consequences on its own survival and replication in the cultural environment' (Dawkins 1982). Kate Distin takes Dawkins' meme, and extends the idea into a coherent world in which memes come into being, are acted upon by selection, and so diversify, change or are obliterated over time.

From the start, Distin's prose is lively, clear and wonderfully interesting. Throughout the book, difficult concepts are laid before the reader in a manner that requires little specialist information. Seven introductory chapters, which introduce the reader to the nature of the meme and memetic evolution, lead to two chapters reviewing discussions of the meme concept since its inception.

The tenth chapter, on *Early Cultural Evolution*, while full of interest, is perhaps the weakest in the book. The reason for this weakness is Distin's unexplained insistence that memes are a uniquely human phenomenon, despite her own, and much other suggestive evidence to the contrary. In defending this position, she moves into the sphere of what she says philosophers would call meta-representations. But here her arguments are weak. Talking of leaf-stripping and ant-dipping behaviours of some primates, she says it is 'quite possible' that such behaviours involve no more understanding than a parrot

understands the meaning of the words it hears and mimics. The 'quite possible' is critical here, for while true, it is also *quite possible* that the primate behaviours do involve some understanding. As yet, we do not know and should not make judgement in the absence of evidence. The proposition that memes are uniquely human is reminiscent of the homocentric arrogance of Victorian and Edwardian scientists who thought that females could not judge the genetic quality of males (Darwin's sexual selection by female choice), or that birds could not possibly find moths on tree trunks because they could not (critics of JW Tutt's differential bird predation hypothesis of the rise of the melanic peppered moth). Yet there seems no reason why memes should be uniquely human. Indeed, if the origins and early evolution of memes are to be understood, it seems unnecessary, if not dangerous, to make an unsupported assumption of the time of their origin at this stage.

The final four chapters of the book are in many ways the strongest and most interesting. The discussions of memetic DNA, the inter-relationships between memes and the mind, and how the meme hypothesis can influence the way we think about science, religion and society, lead to a persuasive and cogent concluding chapter, which left me with many questions in mind, but also a possibly self-indulgent feeling of 'well that's alright then'.

The Selfish Meme is a very readable and thought provoking book, and I would have no hesitation in recommending it to open-minded students and scholars in any biological, anthropological or sociological field. Many will find flaws in some of the arguments from the perspectives of their own specialisms. To give a couple of examples, as a geneticist I would take issue with the intent in the passage 'The truth is, rather, that natural selection generally *obliterates* the heritable variation of the traits that it favours: as a result of being favoured, they become fixed throughout the population, and thereafter any variation amongst the relevant phenotypic effects must be explained environmentally' (p 15). While this is true, due to the nature of the genetic system that natural selection operates on in this context, vast amounts of genetic variation are retained in gene pools for long periods due to phenomena such as genetic dominance, complementation, epistatic effects and other types of gene interaction. That they are retained, rather than being quickly eliminated, is the product of selection acting on the genetic system.

Distin endorses the view that both the nucleotides in genes in conventional evolution and letters in words in memetic evolution are means of retaining information and passing it to subsequent generations. She expands the idea of words used in language being similar to genes, to

encompass any type of representational system (RS), thus including numbers, symbols and the like. In one of the most interesting passages of the book, she discusses differences between genes and RSs, focusing on the fact that there is only one type of language of genes (the code in DNA), while there are many RSs. She then questions the analogy between RSs and genes, asking 'How, then, can the two be examples of the same phenomenon?' Her answer is that the RS that is employed is unimportant, for the RS does not evolve; only the content of the RS evolves. But perhaps here Distin is trying too hard to justify the analogy, finding difficulty in the variation between RSs, when there is no variation in the language of DNA. Cultural evolution is recent, and the RSs on which memetic evolution is based are recently formed. If we consider the evolution of early self-replicating molecules, there is considerable circumstantial evidence to suggest that in the early history of life there were various genetic coding systems, and that selection acted upon these until only one, one that had a high rate of replication and a high degree of fidelity, became ubiquitous. It may be that in the future, the number of RSs underlying memetic evolution is reduced by selection. In the case of natural languages, this is already happening, as many languages have all but disappeared, and certainly in some spheres, such as science, one language, English, is gradually becoming globally accepted. In our increasingly digital age, a binary language has the capacity to cope with all information storage and transmission, and ever increasing amounts of information are being stored and transmitted in such a language through the information technologies.

Here I go, rabbiting on, exploring just one of the many ideas that have come to mind as a result of reading *The Selfish Meme*, and not writing directly about the book. But that is perhaps the strongest plaudit that I can give the book. It encourages and challenges the reader to explore the ideas it addresses. It shouts from page 1, 'this is interesting and exciting', and one wants to both read on and to formulate one's own ideas on the material discussed. Whether having read the book one adheres to the hypothesis put forward by Distin, that we have some control over the memes that arise and persist through selection, or one supports the view of Daniel Dennett and Susan Blackmore, that we humans are no more than meme machines, matters little. Just through reading *The Selfish Meme*, a recently formed meme, created out of the mind of Richard Dawkins and developed by others, will have advanced in a cultural evolutionary context: and the meme will have replicated, thereby enhancing its fitness.

Reference:

Dawkins, R. (1982) *The Extended Phenotype*, Oxford University Press.

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Literary Cambridge

Lisa Sargood, Sutton Publishing Ltd., 2004,
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If you're someone who has ever found themselves wandering the streets of Cambridge, thinking 'Who was it who couldn't stand his rooms in Trinity Lane, again? *Someone* or other got spooked by the ghost of Wordsworth in King's College Chapel. And where did Wordsworth live in St John's anyway?'; or, as is more likely for me anyway, 'I'm sure someone's written something famous somewhere around here but I'm blown if I can remember who, what or where', then you'll be pleased to know that this eternal Cambridge quandary can now be easily solved by a quick flick through *Literary Cambridge*, by Lisa Sarsgood.

Written for Cambridge folk as much as for visitors, *Literary Cambridge* details both the lives of those writers and thinkers who have passed through the city, and the influence Cambridge has had on and in their work.

The opening section can feel slightly disorientating at times, as some pictures bear no explicit relevance to their attendant literary curiosity. However, once the book moves on through the Colleges, stops off for tea with some notable Cambridge women, and journeys out into Grantchester Meadows, the format settles down and proceeds as a comprehensive catalogue of interesting literary facts with accompanying illustrations. It is a shame that some of these illustrations aren't in colour. Whilst much of the book comprises black and white photographs, full colour reproductions of the portraits of, say, Marvell and Pepys, or Blake's famous artwork, would have provided an impressive contrast.

Literary Cambridge is both interesting and essential for those of us with unreliable memories. With some application, we'll all be guides before we know it. To give you a head start: Nabokov, Hardy and on the F staircase above the kitchens.

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The World Trade Organization: a very short introduction

Amrita Narliker, Oxford University Press, 2005,
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The World Trade Organization is one in a series of short introductions published by Oxford University Press that seeks to provide a general statement on subjects of particular interest to students and the general public. In this book, Amrita Narliker, a lecturer in international politics at the University of Cambridge, traces the origins of the WTO and discusses its institutional structure in light of recent controversies between developed and developing countries over trade policy issues that affect the scope of liberalisation in today's global markets. As the WTO Ministerial Conference reaches a climax in Hong Kong in December 2005, this book provides a timely reminder of the potential of the WTO to facilitate increased global trade