

The Red Queen: Sex and the Evolution of Human Nature

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*The Red Queen: Sex and the Evolution
of Human Nature*

Matt Ridley, Penguin Books Ltd,
paperback

1993, p. 406 \$10.50

In the last few decades, behavioural ecology has been a prospering branch of science. Behaviour of what? Animals, of course! To a certain extent, of plants and microbes as well. When it comes to human behaviour, for the majority of people, it is not science at all. Almost all universities have psychology, sociology, anthropology and other 'humanities' under a separate faculty or as a part of the arts faculty. Behavioural ecologists, on the other hand, have been doing good quality science but are wary of talking about human behaviour.

In 1990, I had a chance to spend a few days with William Hamilton during his visit to India. Bill Hamilton, as Matt Ridley refers to him, not only laid the foundations of sociobiology, but has continued to contribute novel ideas to evolutionary theory.

"Do you believe that the principles of sociobiology and behavioural ecology which have developed from animal studies, can be applied to human behaviour as well?", I asked him.

"Yes", he replied. "You have the freedom to think in that way. But don't

publish. If you publish, you are heading for trouble!"

Nearly at the same time, Matt Ridley was painstakingly working for his book which is now with us in paperback, *The Red Queen: Sex and the evolution of human nature*. Ridley does not claim to have contributed any new theory in his book. He brings together all the recent and exciting developments in evolutionary biology and shows how well they apply to humans. This is a bold step indeed! Whenever an evolutionary biologist talks about human behaviour, he is bound to be misinterpreted, criticized and accused of political motivations, sexism and racism. But Matt Ridley's arguments are so attractive, clear and convincing that there is little room for misinterpretation, whether or not you agree with them.

The book begins with the argument that there is a 'human nature' that has evolved, the rules of evolution being the same as in animals. But biologists stick to animals and sociologists proclaim that animals are irrelevant to them. As a result, "science which is so coldly successful at dissecting the big bang and DNA, has proved spectacularly inept at tackling the greatest question of all: Why is human nature what it is?"

Ridley then starts tracing the evolution of sex, beginning with the question: why sex? We take sex for granted, so much so that the question 'why sex?', looks absurd. But for evolutionary biologists, it is a great challenge. Suppose, in a sexual species, one individual decides (i.e. mutates to behave that way) to forego sex, he would put all his

genes into each of his offsprings. A sexual individual puts only half of it. Therefore, the asexual is at a huge advantage. The second and third chapters are devoted to this riddle and the possible solutions. One of the most con-vincing answers is that sex is an adaptation to resist parasites. Hosts evolve genetic mechanisms to resist parasites and parasites evolve mechanisms to overcome them. But parasites have a shorter generation time, resulting in faster evolution. This advantage to parasites is countered by the hosts using sexual reproduction. Parasites of sexual species have to face a new gene combination in every generation. The result is an arms race in which nobody wins. Like the Red Queen in Lewis Carroll's *through the looking glass* who has to keep running to stay in the same place, the evolutionary race continues.

Good science does not stop at the question 'why?'. It asks further 'why not?'. The fourth chapter discusses why two and only two sexes exist – male and female. Why not three or more or why not only one, for that matter? This is followed by a discussion of sexual selection. The obvious, but not as simple as we believe, answer to the question, why peacocks have beautiful tails – is sex. Ridley, so far, is talking nothing but frontline, hard-core animal behaviour.

With this background, from chapter six onwards, he ventures into the question of how human behaviour is shaped by the evolutionary drive called sex. What are the origins of love and lust, faithfulness and adultery, family bonds, social status, political

ambitions, arts, culture and almost every aspect of human behaviour? Evolution of the human brain and development of languages also have a strong component of sexual selection without which we wouldn't have been what we are. These chapters are a complex series of surprises, provocations, consolations and "so simple! why didn't I think of it before?" or "I won't like to believe this but it's too logical to resist". These chapters are for the reader to be experienced.

The book ends with a very mature commentary on human nature. The discussion on the old debate on nature versus nurture, is remarkably balanced. Ridley defies the popular belief that animals have more of instinct and humans have more learning, asserting that humans have both, more instincts and more learning. "If we can free ourselves from the sterile dogmatic dispute about nature and nurture, we can gradually uncover the rest (of the human behaviour map)."

Although Ridley makes occasional factual errors, typical of science journalists who are not researchers themselves, the book as a whole is an important contribution which every curious human, biologist or non-biologist, should read. I feel that after Richard Dawkins's *The Selfish Gene* and *The Blind Watchmaker*, *The Red Queen* might prove the most influential book on evolutionary biology, accessible to the layman.

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