The seductions of criticism

Ullica Segerstrale

**Why Men Won't Ask for Directions:
The Seductions of Sociobiology**
by Richard C. Francis
Princeton University Press, Princeton,
NJ, USA
325 pages, \$30/£20
ISBN 0691057575

Finally, a book that explains men's unwillingness to ask for directions. But what is the explanation? In *Why Men Won't Ask for Directions: The Seductions of Sociobiology*, Richard Francis, an

evolutionary neurobiologist, keeps us in suspense until Chapter 9, in which we finally get the answer—or rather, his answer.

Francis uses this particular example of male behaviour to illustrate how evolutionary psychologists and sociobiologists explain differences between the sexes. To prepare the reader, early chapters discuss evolutionary theory, the role of adaptation, the nature of design, asexual versus sexual reproduction, the nature of sex differences, and more. The narrative proceeds through case studies of animals—sex change in fishes, unusual copulation in lizards, food storing among tits—and descriptions of the hippocampus and hormone system.

The author's central point is that the view of evolution taken by sociobiologists (behavioural ecologists) and evolutionary psychologists is incorrect. The latter take an 'adaptationist' position, in which the only thing that matters in the evolution of organisms is their adjustment to a changing ecology. If we take Francis' advice, we should not ask 'why' or 'what is the evolutionary rationale for' the adaptation, before we have asked 'how' it is possible, given an organism's physiology and genealogy. Not

everything that would be adaptively useful can in fact evolve.

Francis criticizes 'brain ecologists', former behavioural ecologists who apply their adaptationist framework to the spatial memory of animals that hide and retrieve food. These scientists see the size of the hippocampus as correlated directly with the amount of hiding and retrieving. Not so fast, says Francis: there is no consensus on the function of the hippocampus. Moreover, brain ecologists have the causal arrow backwards: an enlarged hippocampus is rather a by-product of the propensity for storing food. Here, Francis points to developmental data on the differences between storers and non-storers, and argues that the brain undergoes physical alterations because of experience. This is also true for spatial memory—taxi drivers have been shown to have an enlarged hippocampus.

When it comes to differences between the sexes, Francis complains that brain ecologists ignore evolutionary difficulties. Bringing about adaptive sex differences requires an alteration in the sexual differentiation process as a whole, says Francis, from the default condition of parallel evolution of male and female traits. Also, brain ecologists see testosterone as the mediator of sex differences, but testosterone does not work directly on the brain, and its influence is limited to critical periods in development. Francis is pulling the evolutionary rug in his own direction—he is requiring adaptationists to become neurobiologists, or to do twice the work! He invokes as support none other than George Williams, who in his famous 1966 book, *Adaptation and Natural Selection*, declared that the demonstration that something is adaptive is an 'onerous' undertaking.

It becomes clear that Francis sees evolutionary psychology as absolute anathema to his own field. With brain ecology, there were at least possibilities for complementarity, and it was possible to conceive of ways to test the brain ecologists' adaptationist claims. But that cannot be done with evolutionary psychology, because it treats mental phenomena as independent of material phenomena, including the brain. By

contrast, his own field, evolutionary neurobiology, is 'robustly materialistic', Francis reports. It doesn't start by asking why, but how, which provides the appropriate evolutionary context.

One focus of evolutionary psychology is on cognitive differences between the sexes, which are explained as adaptive. But Francis recommends using an evolutionary neurobiological framework instead: unlike evolutionary psychology, it allows ample room for sociocultural causes for these differences. Francis in fact argues that a social, not a biological, explanation is the proper default.

Francis' observation that sex differences are small and culturally variable in humans may lead the reader to conclude that serious differences do not exist. But what about cross-cultural comparisons? Francis should have mentioned these purported universals and explained why they are invalid. He also includes little about the scientific rationale of evolutionary psychology.

In *Why Men Won't Ask for Directions*, Francis operates largely with plausibility arguments rather than with compelling counter-evidence. His stories are entertaining, and his animal depictions are engaging, but the overall negativistic tone sounds odd today when new interesting research is being conceived within evolutionary developmental biology, which arguably represents a rapprochement between the proponents and critics of sociobiology. Although spiced up with sexy examples and provocative subtitles, the book often reads like a textbook, or a collection of technical papers, when it isn't lashing out on functionally orientated evolutionists. The aim of this book is unclear—except perhaps to boost the author's own field of evolutionary neurobiology and a politically correct 'anti-adaptationist' agenda.

Ullica Segerstrale is the author of Defenders of the Truth (Oxford University Press, 2000) and Chair of the Department of Social Sciences at the Illinois Institute of Technology, Chicago, IL, USA.

E-mail: segerstrale@iit.edu

doi:10.1038/sj.embo.7400321