Comment on "Can Selfishness Save the Environment?"

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Improve incentive structures, by all means, but "selfish" genes don't necessarily imply selfish people.

There is a great deal of good sense in this broad-ranging argument for the proposition that environmentalists would do better to harness than to defy people's relatively short-sighted and self-centered orientations. The authors are appropriately critical of such hoary romantic fictions as the eco-friendly noble savage, but they don't fall for neoconservative myths, either. Their brief review of commons problems, for example, manages to avoid superficiality and makes clear why privatization of common resources is no panacea.

More generally, Ridley & Low draw useful attention to convergences in the worldviews of economists and evolutionary ecologists. The analytic tools of these disciplines -- game theory and cost-benefit conceptions -- indeed overlap, and are being borrowed in both directions. This is hardly surprising when one considers that relatively hard-nosed theorists in both fields tend to view individual organisms as essential nodes of self-interest, who can be counted on to strive to maximize some sort of personalized utility. Social entities and phenomena are then seen as emerging from -- and as analytically reducible to -- confluences and conflicts of those individual self-interests. Little wonder that economists and ecologists are apparently converging on the conviction that the way to create effectively public-spirited behaviour is to manipulate incentives and penalties so that individually self-interested optima are shifted toward the public good.

But is the opposition between self-interest and collective interest really so clear? One thing that Ridley & Low spell out less fully than we would have liked is what links they mean to imply between biological and economic analyses of social dilemmas, on the one hand, and localized solutions, on the other. In game-theoretic analyses of "commons" and "free-rider" problems, self-interest seems to dictate mutually disastrous resource exploitation policies unless specific conditions are met. How these specific conditions are met in the case of the Alanya fishery studied by Ostrom or the Valencian irrigation system is not spelled out. Whence the potential for collectivist solutions in these communities? There is surely more to this than "tit-for-tat", which is little more than
a dyadic balance of power (or terror) by the threat of personal vengeance. Tit-for-tat provides no model for the emergence of collective, as opposed to individual, sanctions. Ridley & Low hint at the much more complicated and interesting matters of personal reputations and collective sanctions, but they do not say anything explicit about how one is to bridge the gap between selfish individuality and the sort of collective sanctioning that quite clearly does occur. For one way to broach this problem within the same gene-selectionist evolutionary perspective advocated by Ridley & Low, see Alexander (1987).

At this point in their argument, Ridley & Low introduce Leigh’s "parliament of the genes", perhaps to provide an intuitive flavour of how biologists might come to grips with the complexities of societies with more than two members. But the "parliament of the genes" seems a bit of a red herring here. Leigh’s analysis was intended to cope with the question of how it is that individual organisms can have evolved to exhibit such dramatic integrity of purpose when separable components of their genomes are the only entities with sufficient stability over generations to be deemed the units of natural selection. However, the integrity of the individual is not at issue in the present discussion, and Leigh’s answer (largely a matter of a "fair" meiotic lottery) provides little insight into the problem of generating integrated purpose in groups of individual organisms. Some further discussion of contemporary biology’s conception of Hamiltonian "nepotism" — an important complexification or hedge on the whole notion of individualism, by suggesting that "self"-interest is socially distributed after all — might have been in order here, instead.

These considerations lead to our principal reservation about Ridley & Low’s mostly admirable exposition: It can too easily be read as implying that theory and knowledge in evolutionary ecology and economics somehow warrant a denial of the very possibility that human nature might include collectivist motivations or concerns other than the most directly and individualistically utilitarian. Yes, evolutionists share economists’ emphases on costs and benefits and individuals. But the message from inclusive fitness theory and other recent developments in evolutionary theory can just as readily be given a very different twist: The extreme individualism advocated by economists and some other social scientists is overblown, in that the fundamental interests of individuals are inextricably intertwined with the interests of other related and reciprocating individuals. In other words, people are not "selfish" by nature, and socially responsible only when that nature has been "tamed"; rather, concern for the welfare of others — some others — is as natural as selfishness.

The difficulty here is partly semantic: "selfishness" is an ambiguous concept. To say that genes are "selfish" is to say that selection favours those alleles whose average phenotypic effects promote their relative replicative success. But it does not follow that the organisms produced by such a process will be "selfish" in the sense of being self-absorbed and oblivious to others’ needs. Moreover, there is a further problem with the claim that the "selfish gene" perspective — to which we, like most evolutionists, subscribe — "essentially asserts that animals, including man, act altruistically only when it brings some
benefit to copies of their genes” (p. 3). Not only does this claim depend on a technical definition of "altruism" that is subtly different from its meaning in ordinary English; it also entails an unwarranted leap from the historical, stochastic processes of selection to particular actions. All that the "selfish gene" perspective entitles us to expect about behaviour is that the evolved information-processing and decision-making apparatus of people and other animals (in a word, their "psychologies") have been selected such that their average consequences in past environments contributed to the replicative success of the genes of those possessing them, relative to the replicative success of the genes of those possessing alternative psychologies.

This may sound like a wordier way of saying the same thing, but it is not. The wordier formulation that we prefer makes explicit the crucial level of evolved adaptations, and it draws attention to the fact that aspects of modern environments differ from those in which selection shaped our lineage. People and other animals do all sorts of things that do not "bring some benefit to copies of their genes", for although fitness maximization is the criterion of adaptive design over evolutionary time, it is not isomorphic with any creature’s purposes in ecological time (see Tooby & Cosmides, 1990). "Selfish gene" theory is an account of the process that created human nature, and it can help guide investigations of what that nature is like (see Daly & Wilson 1994), but it is not itself a description of human nature.

Consider, for example, the possibility of an evolved "biophilia" (Wilson, 1984). Is natural selection capable, in principal, of producing psychological attributes such as aesthetic appreciation and valuation of plants and animals and biotic complexity? Could it conceivably have imparted such attributes to evolving humans, with the result that these evolved attributes affect contemporary conservation behaviour? Ridley & Low don’t pose this sort of question, but they can easily be read as arguing that orthodox gene-selectionist theory rules out any such possibilities. And yet clearly such things are at least conceivable. Suppose, for example, that taking an interest in the biotic world, and deriving pleasure from knowledge and understanding of its complexity, evolved as motivators of information-gathering. The utility of such information could reside in hunting and gathering efficiency, avoidance of predators and disease vectors, perhaps even in the recognition of medicinal remedies, and it is easy to imagine how inclinations to acquire and organize such information before it was needed might have tended to promote the fitness of those of our ancestors who were curious and enthusiastic naturalists.

And could natural selection, in principal, ever produce psychological attributes which manifested themselves as an inclination to protect resources of unknown or dubious utility, say, or as a wariness of other people’s destructive agendas? Again, such things are at least conceivable, if these were the byproducts of adaptations whose functions were better described as risk-aversion and bet-hedging, suspicion of the resource exploitation strategies of rivals, and so forth.

Our point is not to argue that adaptations such as these are indeed elements of an evolved human nature. We could also, just as readily, hypothesize psychological adaptations more in keeping
with Ridley & Low's general thrust. Perhaps, for example, people possess an evolved skeptical resistance to moral exhortations that lack attached incentives, for the very good reason that such exhortations are too often attached to hidden agendas serving the interests of those doing the exhorting. But the more general point is that the tough-minded, individualistic theorizing of evolutionary biology does not necessarily justify the expectation that evolved motives will be "selfish" rather than "collectivist" in any straightforward way.

Who, after all, are the "we" who can find "ways to make the individual interest concordant with the collective -- so long as we recognize the need to" (p. 4)? If Ridley & Low's "selfish" characterization of human beings could be taken literally, would anybody care about extinctions and overexploited resources and the longterm fate of the environment? Large numbers of people do care passionately about these things, and they commit large amounts of time and money to their remediation. Moreover, it seems evident that such care and commitment are culturally labile and can be nurtured by appropriate childhood experiences and by the support of like-minded others, possibilities that Ridley & Low seem to dismiss. Why insist, for example, that their own views about the need for incentives and penalties are "utterly at odds" with others' views about the need for "restructuring the global economy, major shifts in human reproductive behavior, and dramatic changes in values and lifestyles" (p. 3)? These two sets of views seem to us entirely compatible.

So we are not persuaded that evolutionary biology provides a rationale for embracing the economic theory that people will respond only to the most directly and individualistically utilitarian incentives. However, nothing we have said gainsays Ridley & Low's general thesis that policy-makers would do well to rely more on incentive structures and less on exhortative appeals to the greater good. We would add that evolutionarily informed study of human psychology will be essential to elucidating exactly when and why people are not always so "selfish" after all.

REFERENCES


