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HOW SELFISH GENES SHAPE MORAL PASSIONS

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Genes are 'selfish' in that they make organisms whose behaviours are shaped, necessarily, to benefit their genes. But altruism and selfishness as we usually think of them have little to do with 'evolutionary altruism' and 'evolutionary selfishness', and the use of these phrases has given rise to much confusion. The most pernicious is the false conclusion that individual altruism is impossible unless it has been shaped by group selection. In fact, human altruism and morality are shaped by genes because individuals with these capacities have a fitness advantage. The advantage may come from sexual selection, social selection, or the advantages of a capacity for commitment, as well as from cooperation, and kin selection. Ironically, morality may be a metaphor so powerful that it inhibits careful thinking precisely because our brains are wired by natural selection to see the world in terms of good and evil.

Sober and Wilson's mission — to explain how natural selection shaped the human capacity for morality — is important and even somewhat urgent. I share their commitment to finding a solution, but I don't see that group selection is either necessary or sufficient. In fact, it seems to me that their approach, like that of many others (including me at one time — Nesse, 1994), is obscured by the mist that descends when the language of morality is used as a metaphor for the process of natural selection. This gambit, so seductive that it is almost impossible to resist, blurs selfish genes

with selfish people, thus concealing the central truth of the matter — the best strategy for selfish genes is to make humans who, in certain situations, have the capacity and propensity to act in ways that are genuinely altruistic, and even morally principled.

The issue arose in this century when Williams (1966) demonstrated that group selection is feeble, and Hamilton (1964) recognized that kin selection provided an alternative explanation for helping relatives. The crisis for moral theory and our view of ourselves was amplified when Wilson (1975) applied evolution to humans and Dawkins (1976) used the emotionally charged language of the moral passions to describe competitions between genes. Calling genes ‘selfish’ was inspired. It accurately describes how they create organisms designed wholly to increase the copies of their genes in future generations. Inevitably, mindlessly, genes increase in prevalence if they make phenotypes that advance their own interests; genes that foster any kind of ‘evolutionary altruism’ are displaced.

From this inexorable logic, many have reached the bleak conclusion that altruism is impossible. Our actions, this argument goes, are products of a brain that is designed to advance the interests of our genes. Taking care of our children, and helping people who help us, may seem altruistic, but such actions actually help our genes. Other instances of apparent altruism can be attributed to manipulation, coercion, novel environments, mistakes, or conscious decisions to oppose the dictates of natural selection.

The emotional punch of this conclusion lands at the solar plexus of our moral identities. People who have been trying to live moral lives suddenly wonder if their apparently generous impulses might actually be selfish at the core. George Williams has written about ‘Mother Nature, the wicked old witch’ and has helped to reignite Huxley’s argument on evolution and morality (Huxley, 1989 [1893]). Finally, consider how most books on evolution and morality conclude, with their admonitions to accept the bitter pill of our fundamental selfishness, in hopes that this knowledge will allow us to ‘transcend’ our basic nature.

Into this fray come Sober and Wilson (1998). Their strategy is to reclaim altruism by resurrecting group selection. As they point out, group selection occurs when a gene that becomes progressively less common within a group is nonetheless increased in frequency because groups in which the gene is prevalent grow faster than other groups, or displace them. The exemplar is a group of selfish individualists being displaced by a group with individuals whose genetic tendencies motivate cooperation. Models show that this kind of strict group selection can work, but only under stringent conditions — especially lack of movement between groups and short individual life-spans compared to the durations that groups exist. These conditions are not unknown, but are rare in the natural world. If group selection had any strength at all, then most sex ratios would be biased towards females since a preponderance of females can double a group’s rate of increase. But most sex ratios are 50:50, as would be expected if individual selection were overwhelmingly more powerful than group selection.

Sober and Wilson are unwilling to give up their commitment to group selection, however, so they expand the term to cover phenomena that are fundamentally different; namely, the benefits from selective association with altruists and kin. Does using the term group selection for such phenomena offer new understanding that can counterbalance the confusion it causes? After many of my lectures in recent years, some earnest soul asks if I am aware that group selection is back, that it can explain human

altruism and group cooperation. Invariably the questioner has no inkling of the subtleties offered by Sober and Wilson, but thinks that they have shown that old-style group selection can explain major characteristics of many species. Worse yet, some otherwise sophisticated scholars seem to have accepted the notion that group selection is a morally superior idea that has been unfairly undermined by selfish gene theorists, who therefore deserve moral opprobrium.

Much of the confusion surrounding morality and group selection has arisen from a simple misunderstanding. It is correct beyond question that genes shape brains that induce individuals to do whatever best gets copies of those genes into future generations. This principle follows from the logic of how natural selection works, and is not an empirical issue. When this is combined with our intuitive notion that altruism consists of costly acts that benefit others, and genes are seen as the ultimate currency, then altruism is impossible.

However, ‘evolutionary altruism’ is not altruism at all. A behaviour is evolutionarily altruistic if it decreases an individual’s Darwinian fitness and benefits the fitness of others. We could save vast confusion if we called such acts, ‘evolutionarily senseless social behaviours’ (ESSB), and contrasted them with ‘evolutionarily advantageous social behaviours’ (EASB). Such designations would at least permit conversation about the matter without getting us tangled up in our moral passions.

Sober and Wilson start their book by clearly distinguishing ‘evolutionary altruism’ from ‘psychological altruism’, and they highlight some major differences; but later the concepts seem to blur. Also, psychological altruism is not the same thing as individual altruism. Sober and Wilson note that many evolutionary altruistic acts are selfish and that many individually altruistic acts are evolutionarily beneficial to our genes, but what a struggle it is to keep all this straight! Worse yet, if group selection were powerful, consider its probable products. Yes, it would shape cooperation within the group, but at the expense of other groups. Do we really want to call ethnocentrism, patriotism, racism, and sexism ‘altruistic’ in even the evolutionary sense? What terrible confusion this causes! Staying up all night with a sick baby increases one’s inclusive fitness, but it is also an act of individual altruism. Paying back a favour may give fitness advantages by maintaining a relationship, but that does not make it selfish. It is *failing* to pay back a favour that is selfish. The moral status of such acts depends on the goals of both parties, their motives, and their commitments. Sober and Wilson say this all of this, but the overall impression still is one of selfish genes causing selfish behaviours, with group selection as the only possible explanation for genuine altruism.

The potential explanations for altruism need to be expanded. Beyond traditional group selection, kin selection and reciprocity can shape capacities for genuine altruism — the benefits they provide to genes are not relevant to their moral status. Beyond this trinity, I can see at least four additional ways that natural selection might shape capacities for altruism. Some of them take us much closer to our core notion of morally principled behaviour.

The first is social selection (Alexander, 1987; West-Eberhard, 1987; Steven Frank, 1998). Social groups give rise to emergent forces of natural selection that may well be able to shape capacities for genuine altruism. The dynamics of this need not even be very complicated. If groups create norms, by whatever means, and individuals who

violate those norms are excluded from the group, then even the least deviation may be fatal. An individual who is even thought to be calculating his relative advantage, instead of following the rule, might be fatally excluded. Furthermore, many of the exquisitely subtle norms that groups enforce so ruthlessly are about helping others. Sober and Wilson discuss something very similar to this kind of social selection, but because it involves groups, they would prefer to call it a kind of group selection. Their direction seems right to me, but their language causes considerable confusion.

A closely related but more specific source of altruism comes from commitment strategies (Schelling, 1960; Hirshleifer, 1978; Robert Frank, 1988; Nesse, 2000). Individuals who are capable of making credible commitments to threats and promises can have vast influence compared to those whose commitments are worthless. This may well be why people are so concerned with honesty. A dishonest person cannot use commitment strategies, and thus is at the mercy of others who have friends they can count on when they most need them, and whose threats must be reckoned with. It may also explain why people are so concerned to demonstrate that their relationships are *not* based on reciprocity. Yes, friends help each other, but woe to the naive reciprocator who too eagerly repays a favour in exacting kind. People don't just want reciprocity partners, they want friends whose commitment to them is based on love. To get this, they must be capable of love. When the exchange in a relationship becomes too unbalanced, commitments are severely strained, of course.

A third possible route to altruism is sexual selection (Miller, 1994). Altruism is an extraordinary trait because it seems to harm fitness. So do bright feathers and huge horns. Altruism is not sexually dimorphic, but could sexual selection, even runaway sexual selection, operate in both sexes at the same time? In the case of humans, recent ecological changes have created a need for two partners to cooperate to provide extended care for altricial offspring. In a cross-cultural study, much cited for finding sex differences in preferences for mates according to their wealth or attractiveness, Buss (1989) also found that the number one and two factors that individuals of both sexes were looking for in prospective mates were (1) 'intelligence', and (2) 'kindness'. Thus, the displays that prospective mates make of their mental and moral capacities. The pressure to demonstrate goodness may well shape a tendency for genuine goodness, if this is what it takes to increase mating success. This is speculative, but possible.

Finally, as Boehm (2000) points out so nicely, people can decide what kinds of groups they want to live in. They can, and do, talk to create political and legal systems to encourage the good behaviour of members of the group. In particular, they can agree to limit the privileges of the powerful, by laws, taxes, and by social opprobrium. The enforcement of monogamy in many cultures is a remarkable example of the power of such systems.

Overall, the metaphor of morality as applied to evolutionary phenomena has caused much confusion, consumed much energy and caused much unnecessary dismay. Genes do create organisms that increase their chances of being well-represented in the next generation. But this says nothing whatsoever about the selfishness of the individuals they create. Our tendency to interpret the world in moral terms is so powerful that using morality as metaphor for genetic competition almost automatically leads to a confusion of levels that makes life seem even worse than it is. To clean up the confusion we must keep the consideration of moral issues at the levels of the

individual and society, even as we try to understand how genes create brains that induce behaviour that increases their representation in future generations.

There is one final irony in this story. Why is the metaphor of selfishness such a seductive and successful meme? I suspect it is because our minds have deep intuitions about what selfishness is, and emotional reactions to the idea of selfishness that we cannot overcome, even when authors such as Sober and Wilson patiently explain, several times, that they are talking about 'evolutionary selfishness', not psychological or individual selfishness (Cosmides & Tooby, 1992; Trivers 1981). As a result, we readily, but wrongly, conclude that people are fundamentally selfish, and that only group selection could give rise to genuine altruism. This conceals several other possible routes genes use to get themselves into future generations, some of which involve creating individuals with a capacity for genuine moral behaviour.

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