bring this up? Just let me be'); whereas the second person is indignant at the directors themselves. Then we can reasonably suggest that the first person prized his own peace of mind or reputation for generosity more than he cared about the starving poor; whereas the second has a more genuine concern for what goes on in the world, not for whether he is comfortable or how he stands in the eyes of others.

Fortunately, however, we are not all like the first person, or not all the time. We can be indignant at the directors, just as we are indignant at many things that go on around us. We don't always shoot the messenger, and we can want to be told the truth because it is a truth that concerns us.

4. Evolutionary theory

There exists a vague belief that some combination of evolutionary theory, biology, and neuroscience will support a Grand Unifying Pessimism. Indeed, most of the popular books on ethics in the bookstores fall into one of two camps. There are those that provide chicken soup for the soul: soggy confections of consolation and uplift. Or, there are those that are written by one or another life scientist: a neuroscientist or biologist or animal behaviourist or evolutionary theorist, anxious to tell that 'science' has shown that we are all one thing or another. Once more we stand unmasked: human beings are 'programmed'. We are egoists, altruism doesn't exist, ethics is only a fig-leaf for selfish strategies, we are all conditioned, women are nurturing, men are rapists, we care above all for our genes. There is good news and bad news about the popularity of this genre. The good news is that we do have a relentless appetite for self-interpretation. There is a huge desire to find patterns of behaviour, enabling us to understand and perhaps control the human flux. The bad news is that we will accord authority to anyone in a white coat, even when the science is over (for as we are about to see, talking of the significance of science is not talking science).

We should only venture into this literature if we are armed against three confusions. The first is this. It is one thing to explain how we come to be as we are. It is a different thing to say that we are different from what we think we are. Yet these are fatally easy to confuse with each other. Suppose, for instance, evolutionary theory tells us that mother-love is an adaptation. This means that it has been 'selected for', because animals in which it exists reproduce and spread their genetic material more successfully than ones in which it does not. We could, if we like, imagine a 'gene for mother-love'. Then the claim would be that animals with this gene are and have been more successful than animals having only a variant (an allele) that does not code for mother-love (this is likely to be grossly oversimplified, but it's a model that will make the point). The confusion would be to infer that *therefore* there is not really any such thing as mother-love: thus we unmask it! The confusion is to infer that underneath the mask we are only concerned to spread genetic material more successfully.

Not only does this not follow, but it actually contradicts the starting point. The starting point is 'Mother-love exists, and this is why'; the conclusion is that mother-love doesn't exist.

In other words, an evolutionary story, plausible or not, about the genetic function of a trait such as mother-love must not be confused with a psychological story unmasking a mother's 'real concern'. We should not rear a generation of children taught to turn round and say, 'You didn't really care about me, you only cared about your genes.' Perhaps nobody would make this mistake so baldly in this instance. But consider the idea of 'reciprocal altruism'. Game theorists and biologists noticed that animals frequently help each other when it would seem to be to their advantage not to do so. They asked the perfectly good question of how such behaviour could have evolved, when it looks set to lose out to a more selfish strategy. The answer is (or may be) that it is adaptive insofar as it triggers reciprocal helping behaviour from the

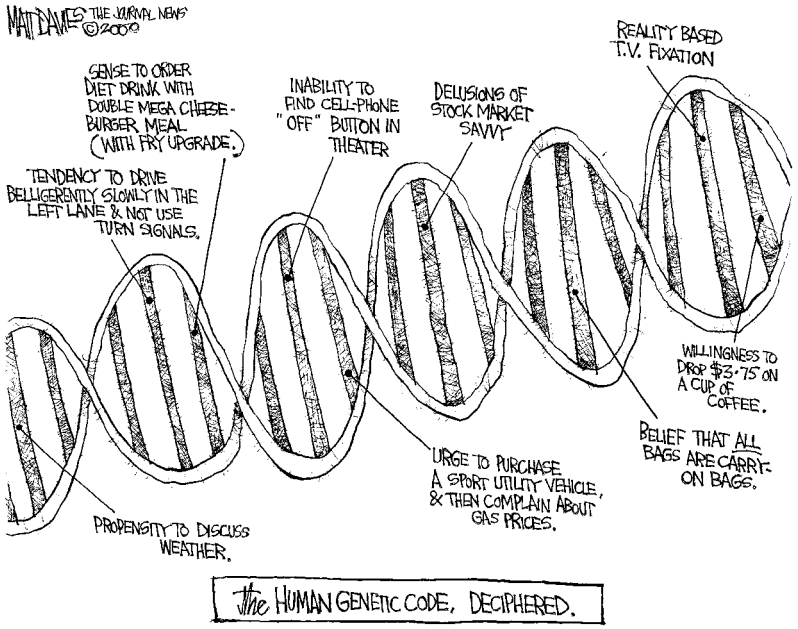
animal helped, or from others witnessing the original event. In other words, we have a version of 'You scratch my back and I'll scratch yours'.

The explanation may be perfectly correct. It may provide the reason why we ourselves have inherited altruistic tendencies. The confusion strikes again, however, when it is inferred that altruism doesn't *really* exist, or that we don't *really* care disinterestedly for one another – we only care to maximize our chance of getting a return on our investments of helping behaviour. The mistake is just the same – inferring that the psychology is not what it seems because of its functional explanation – but it seems more seductive here, probably because we fear that the conclusion is true more often in this case than in the case of mother-love. There are indeed cases of seeming altruism disguising hope for future benefits. But there are of course cases in which it is not like this, and shown to be such by the methods of the last section. The driver gives the penniless hitch-hiker a lift; the diner tips the waiter he knows he will never see again; they each do it when there are no bystanders to watch the action.

To guard against this confusion, contemplate sexual desire. It has an adaptive function, presumably, which is the propagation of the species. But it is completely off the wall to suppose that those in the grip of sexual desire 'really' want to propagate the species. Most of the time most of us emphatically do not – otherwise there would be no birth control, elderly sex, homosexuality, solitary sex, and other variations – and many people never do. Some moralists might wish it were otherwise, but it isn't (see Fig. 4).

So, this first confusion is to infer that our apparent concerns are not our real concerns, simply from the fact of an evolutionary explanation of them.

The second confusion is to infer the impossibility that



4. Matt Davies, 'The Human Genetic Code, Deciphered'.

such-and-such a concern should exist, from the fact that we have no evolutionary explanation for it. This is unwarranted, for it may well be that there is no evolutionary explanation for all kinds of quirks: no explanation for why we enjoy birdsong, or like the taste of cinnamon, or have ticklish feet. The cartoon says it all.

These traits may be side-effects of others that are adaptive, or they may be descendants of traits that were once adaptive but are so no longer, or they may be nothing to do with adaptations, but just due to chance. Or they may be adaptations but only because they affect the 'eye of the beholder': perhaps it is more pleasurable to be with a partner who has ticklish feet, and then a mechanism of 'sexual selection' kicks in to boost the prevalence of the trait. That throws us back onto the question of why the pleasure and the preference exists, but perhaps it just does. Female peacocks go for the huge, beautiful, but apparently dysfunctional tails of the male, and female Irish elks went for the male practically immobilized by the biggest antlers. It is not easy to see why, and this problem can unfit explanations in terms of sexual selection for some purposes. For instance, if we find the human propensity for art or music puzzling because we cannot find a survival function for it, it doesn't immediately help to suggest that females prefer artistic and musical men, since we won't be able to find a survival function for that female preference, either. What this means is that the explanation has to continue. It might continue by showing that females recognize that artistry and musicianship indicate *other* survival-enhancing traits, such as industry or cunning (the peacock's gaudy tail may indicate freedom from disease, or the elk's antlers indicate its strength). Or, it might postulate a 'trembling hand' – a random jerk in the evolutionary process, such as the inaccurate copying of a gene, that just happened to entrench itself.

The third confusion to guard against is to read psychology into nature, and in particular into the gene, and then read it back into the person whose gene it is. The most notorious example of this mistake is in *The Selfish Gene*, by Richard Dawkins. Here the fact

that genes replicate and have a different chance of replicating in different environments is presented metaphorically in terms of their being 'selfish' and indulging a kind of ruthless competition to beat out other genes. It is then inferred that the human animal must itself be selfish, since somehow this is the only appropriate psychology for the vehicle in which these little monsters are carried. Or at least, if we are not selfish, it is because by some strange miracle we can transcend and fight off the genetic pressure to be so. Dawkins has since repudiated this idea, but it maintains a life of its own.

To state this train of thought is to expose its silliness. Genes are not selfish – they just have different chances of replicating themselves in different environments. Not only may they do better if the person carrying them is unselfish, altruistic, and principled, but it is easy to see why this should be so. A society of unselfish, altruistic, and principled persons is obviously set to do better than a group in which there are none of these traits, but only a 'war of all against all'. Furthermore, the environment in which we human beings flourish is largely a social environment. We succeed in the eyes of each other. Hence, a principle like that of sexual selection kicks in: if these are traits we admire in each other, they are likely to be successful not only for the society as a whole, but also for any individual who has them. And we do admire them. We see more of the association between being good and living well in section 17.

5. Determinism and futility

The other implication of the life sciences that threatens ethics, in many peoples' minds, is the threat of determinism. The idea here is that since it is 'all in the genes', the enterprise of ethics becomes hopeless. The basket of motivations that in fact move people may not be as simple as the Grand Unifying Theories have it, but they may be fixed. And then we just do as we are programmed to do. It is no use railing about it or regretting it: we cannot kick against nature.