

Human evolution**Moral thinking**

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Biology invades a field philosophers thought was safely theirs

WHENCE morality? That is a question which has troubled philosophers since their subject was invented. Two and a half millennia of debate have, however, failed to produce a satisfactory answer. So now it is time for someone else to have a go. And at a panel discussion at the American Association for the Advancement of Science meeting, a group of biologists did just that.

Mark Hauser, of Harvard University, opened the batting by asking whether morality is more than just the refined application of the emotions. He thinks that it is. Human brains, he believes, have a separate morality module. Brain-scanning experiments show that when a volunteer is faced with a moral dilemma (such as a runaway railway trolley approaching a set of points, with dire consequences whichever way he throws those points) his emotional centres are not involved in the decision. Such "trolleyology", as it has waggishly been dubbed, also suggests that reason is not part of the process. Different ways of killing the same number of people with a runaway trolley produce systematically different answers.

That does not mean all moral decisions have to be the same in everyone (though in trolleyology they often are). Instead, Dr Hauser uses the analogy of language. All healthy humans have, in the words of his Harvard colleague Steven Pinker, a "language instinct" which incorporates the idea of nouns, verbs, adjectives and how these all fit together. Exactly which language you learn, though, depends on your upbringing.

David Sloan Wilson, of Binghamton University, in New York state, agrees with that point, but reckons the actual moral sense an individual acquires is not arbitrary, as a language is, but is functionally adapted to circumstances. He and his colleague Ingrid Storm looked at liberals and conservatives (in the American senses of the words). Each group has a package of values it sees as moral, while viewing many of the beliefs of the other side as immoral. Dr Wilson and Dr Storm restricted their study to white, Protestant teenagers, in order to eliminate confounding variables. However, their volunteers came from two different traditions—Pentecostal, which tends to the conservative, and Episcopalian, which tends to the liberal.

The researchers conducted the study by giving each volunteer a beeper that went off every two hours or so. When it beeped, the volunteer answered a questionnaire about what he was doing at that moment, and how he felt about it.

Dr Wilson and Dr Storm found several unexpected differences between the groups. Liberal teenagers always felt more stress than conservatives, but were particularly stressed if they could not decide for themselves whom they spent time with. Such choice, or the lack of it, did not change conservative stress levels. Liberals were also loners, spending a quarter of their time on their own. Conservatives were alone for a sixth of the time. That may have been related to the fact that liberals were equally bored by their own company and that of others. Conservatives were far less bored when with other people. They also preferred the company of relatives to non-relatives. Liberals were indifferent. Perhaps most intriguingly, the more religious a liberal teenager claimed to be, the more he was willing to confront his parents with dissenting beliefs. The opposite was true for conservatives.

Dr Wilson suspects that the liberal package of individualism and confrontation is the appropriate response to survival in a stable environment in which there is leisure for learning and reflection, and the consequences for a group's stability of such dissent are low. The conservative package of collectivism and conformity, by contrast, works in an unstable environment where joint action, and thus obedience to their group, are at a premium. It is an interesting suggestion, and it is one that plays into the question of how morality actually evolved.

That was addressed by Samuel Bowles, of the Santa Fe Institute in New Mexico. An important feature of moral behaviour is altruism. Normally, biologists explain this as being either nepotism or you-scratch-my-back-and-I'll-scratch-yours. But Dr Bowles believes people do perform acts which cost them more than they gain. To explain this, he invokes an idea that went out of fashion in the 1960s: group selection. This says that the winnowing of the gene pool, which drives evolution, can favour or destroy entire social groups as single entities, as well as working at the level of individual organisms.

No one ever claimed group selection is impossible, but it looks mathematically unlikely. Dr Bowles, however, thinks that the virtues of human collaboration are so great that groups composed of genuine, self-sacrificing altruists would outcompete others.

His best example of such self-sacrifice is warfare, an activity in which morality and immorality intersect in ways that have always been puzzling—and where liberals and conservatives often draw opposite conclusions about what is right and wrong. Paradoxically, that clash of views suggests that Dr Bowles and Dr Wilson really are on to something with the idea of functional morality. Perhaps they and their colleagues can eventually do what philosophers have never managed, and explain moral behaviour in an intellectually satisfying way.

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