

This week

On the origins of human spite

It doesn't take much to make people switch from helping their fellows to actively obstructing them

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ECONOMISTS and biologists used to insist that humans are mainly driven by self-interest, with cooperation just a way of using others to get more for ourselves. That view was undermined by modern experiments showing that most of us also care about fairness and justice for others. Now research is pointing to another, more spiteful side of human nature. We care about fairness, but also about knocking others down, even at a cost to ourselves.

It is clear enough that animals can encourage the perpetuation of their own genes into future generations by helping their close relatives. Altruistic behaviour can also evolve through reciprocity among animals that meet one another in repeated encounters. "You scratch my back, I'll scratch yours another day," can be an effective strategy for building mutually beneficial cooperation.

Yet with humans, that doesn't seem to be the whole story. Experiments in which student volunteers were asked to play games for real monetary stakes showed they will act altruistically even when they can have absolutely no hope of getting anything in return. In 2001, anthropologist Joseph Henrich of the University of British Columbia in Vancouver, Canada, and colleagues published data from 12 countries around the world showing similar behaviour among individuals from hunter-gatherer and foraging societies. It remains the most diverse data set available, and runs counter to the prevailing view that people will only pay to help total

strangers if they have a chance of getting something back, such as a future payback or an enhanced reputation

"In addition to their own material pay-offs," Henrich says, "people generally care about fairness and reciprocity. They are often willing to help others even at a personal cost to themselves." Some argue that these experiments turn out the way they do only because the subjects were operating in a different environment from the one humans have evolved to deal with (see *Adapted or maladapted?*), yet new research is casting further doubt on the view that people are only self-interested, while also offering a surprising twist: we're often just as spiteful as we are altruistic.

In a paper currently under review in *European Economic Review*, economists Simon Gaechter and Benedikt Herrmann of the University of Nottingham, UK, report the results of "public goods" experiments they carried out in Russia. In these experiments, volunteers are given some money, say \$20 each, and have an opportunity to contribute to a public fund. After each has decided how much to give, the experimenter takes the total, doubles it, and shares out the result equally among the participants.

If everyone gives generously to the group, then all do well, getting more back than they originally had. Yet each individual also faces

"Many Russian participants were willing to pay to punish those who contributed more than they had to the public pool"



a temptation to cheat, because if others still contribute, they'll profit more by withholding their own contribution. In practice, cheating wins out, and few people contribute to the public fund.

However, the outcome changes dramatically if participants have an opportunity to punish those who they see as contributing too little. If participants can pay a small fee to anonymously punish such cheaters, many willingly take up the opportunity to do so. Such punishment makes cheating

more costly, and, as a result, ends up aiding group cooperation. This, at least, has been the result when the game has been played with western volunteers.

In the experiments carried out with over 500 Russian volunteers, Gaechter and Herrmann ran trials both with and without the possibility of costly punishment. They used different pools of volunteers, either urban or rural, and of two age groups: one younger, with an average age around 20, while the average age



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average 78 per cent as much to punish cooperators as they did to punish cheaters. This significantly reduced the cooperation achieved by the group, to the extent that sometimes it was lower when punishment was a possibility than when it wasn't.

One reason for this unexpected result might be that people dislike "do-gooders", Gaechter speculates. Such

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behaviour, he suggests, may be accentuated in Russia because of a hangover from the communist era. As he notes, older people in the study had mostly grown up under communism, and were socialised from childhood in collectivist ideology, which discouraged strong expressions of individuality. In contrast, the younger participants were brought up after the fall of the Soviet Union, and amidst the transition to a market economy that stresses individualism.

Whatever the specific origin of this behaviour, Herrmann says people appear to be making decisions based on social preferences – that is, preferences not only for what the individual gets, but for what other people get too. Understanding human behaviour means taking such preferences into account and, as this work shows, they may depend strongly on people's prior conditioning. As obvious as it may seem, economists have tended to ignore this effect. As Herrmann points out, no earlier experiments have found "do-gooder punishment".

Economist Ernst Fehr of the University of Zurich in Switzerland says that Gaechter and Herrmann's work "demonstrates extremely strong cross-cultural differences". Fehr and colleagues have documented similarly strong cultural differences in India. In a paper

to be published in the *American Economic Review*, they report the results of cooperative games in which individuals in Uttar Pradesh, one of the least developed regions of India, routinely showed a willingness to act to reduce another person's material pay-off merely for the purpose of getting ahead of that person.

In their experiments, two individuals played a game in which cooperation paid off, while a third acted as an observer who could pay to deal out punishments to either party. Frequently such punishments were motivated by personal reasons rather than any sense of fair play. Typical explanations, says Fehr, were "I am jealous of that player, and that is why it is important to impose a loss on him," or "Imposing a loss on him gives me enjoyment."

As well as undermining the view that people really care only about selfish individual

pay-offs, these findings, like Herrmann's, suggest that the way individuals behave is strongly influenced by how they were brought up in the recent past. Most efforts to model human behaviour, whether in economics or biology, have ignored this, and have tried to make universal assumptions about the character of human economic reasoning, Henrich says. "They tend to suppose that people everywhere deploy the same cognitive machinery for making economic decisions and, consequently, will respond similarly when faced with comparable economic circumstances."

That idea now seems to be defeated. As data on human behaviour rolls in from many cultures, it seems that we're neither intrinsically greedy nor wholly selfless. We care about others, but not always in a positive way. ●

What's it worth to do others down?

of the older group was 44. As in other experiments, they found that many people were willing to punish those who they perceived as cheats. "Russians are quite cooperative," says Gaechter, "and they punish cheaters on average as do all other subject pools we have seen so far."

However, they also found a surprise. Many participants were also willing to pay to punish those who contributed more than they had to the public pool. Older, urban Russians paid out on

ADAPTED OR MALADAPTED?

Some of the strongest evidence for altruism comes from experiments in which individuals play cooperation games anonymously, once only, via computers. In "one-shot" situations participants can't expect to build a reputation or get any kind of future payoff. Yet in such games people have been found to act altruistically, sharing out rewards to achieve some degree of equality, or paying a cost to punish those they see as violating social norms.

This evidence doesn't convince everyone. Evolutionary psychologist John Tooby of the University of California, Santa Barbara, points out that for 99 per cent of the period during which the human mind has evolved, people lived in small groups and experienced repeated interactions with others. As a result, our ancestors were strongly motivated to cooperate so as to stay on good terms with others whose help they might need someday. Anonymous, one-shot encounters with others were almost unknown, so Tooby suggests that the apparent altruism emerges because we have not evolved strategies to deal

with these encounters differently.

Many other researchers find this unconvincing, insisting that altruism is real, and could have evolved because it aided cooperation in large human groups. Joseph Henrich of Emory University in Atlanta, Georgia, points out that biologists have developed a number of models showing how competition between human groups could have been the forge in which altruism was born. While competition between individuals would clearly tend to act against altruistic behaviour, groups with more altruists would benefit from greater coordination – for example, in more efficient farming, or when waging war.

Henrich argues that such "group selection" could have acted rapidly through cultural evolution, in which behaviours are passed on by learning and teaching, rather than genetic evolution. "The scale of cooperation in many societies has increased by orders of magnitude in historical time," he says. "This suggests that some non-genetic evolutionary process has been ratcheting up the scale of cooperation."