

The enemy of my friend: Altruistic punishment in humans called into question

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(Phys.org) —That *Homo sapiens* exhibits both cooperative and competitive behavior is a topic that continues to be the subject of ongoing discussion. In terms of cooperation, *altruism* (a selfless type of *prosocial behavior* in which an organism acts to benefit another at a cost to itself), has received significant attention from evolutionary biologists, neuroscientists, economists, psychologists, philosophers, social scientists, game theorists, and computer scientists. In particular, *altruistic punishment* – in which individuals who, at no apparent benefit (or even at a cost) to themselves, punish someone who has treated another unfairly – has been demonstrated in a range of studies. Recently, however, scientists at the University of Miami posited that the evidence for these results is possibly affected by experimental artifacts, and is therefore questionable. To address their hypothesis, the researchers designed and performed an experiment without such artifacts, finding that while victims punished offenders, witnesses did not – and moreover reacted with envy for ill-gotten gains rather than moralistic anger. In addition, a second experiment showed that previous evidence was due to what is known as *affective forecasting error* (inaccurate estimations of reactions to hypothetical situations). The scientists concluded that evidence supporting human altruistic punishment has been overstated.

Prof. Michael E. McCullough discussed the research he and his colleagues, Eric J. Pedersen and Dr. Robert Kurzban, conducted. "As a psychologist who does a fair amount of laboratory experimentation," McCullough tells *Phys.org*, "I was rather surprised by some of the inferential holes in the studies that others were holding up as 'proof' for

the existence of altruistic punishment. For starters, much of the most widely-touted work had been conducted in such a fashion that subjects were simply asked, in advance of interacting with a stranger, whether they would punish that the stranger if the stranger were to harm, help, or treat indifferently the participant. Generally," he notes, "I think we can all agree that we expect the behavioral effects of life's slings and arrows to come *after* those slings and arrows, but the economic third-party punishment games that are so important for the claim that altruistic punishment exists shine a spotlight on behaviors that occurred *before* their supposed causes had even happened. It was easy to design an experiment that solved this problem – and actually, I was also surprised to discover that no one had conducted this experiment before us."

Going into greater detail, McCullough explicates five methodological limitations of the standard economic third-party "stingy dictator" punishment game that might yield inflated estimates of humans' propensity to punish strangers who treated other strangers unfairly.

- Subjects are assigned a third-party role that implies their task is to determine *how much* to punish the dictator, where in fact the only choices are whether to punish the dictator or not – and only then, if they do, how much –which likely increases the estimated quantity of punishment.
- Punishment is typically administered with the presence (actual or inferred) of an audience, which introduces reputational considerations by signaling, for example, one's quality as a cooperative partner, or formidability to prevent future exploitation of oneself, or one's friends and kin.
- The game is typically conducted with the strategy method, which requires third parties to repeatedly respond to a series of hypothetical dictator choices before knowing the dictator's actual choice, which might make subjects feel compelled to punish at

least some of the time.

- The strategy method also involves affective forecasting by requiring subjects to respond to dictator actions that have not yet occurred, leading to behavior that can differ from behaviors enacted after experiencing social situations directly.
- Previous claims that anger is the predominant emotional response of third-party punishers have relied on self-reports of anger in response to hypothetical scenarios. However, self-reports of anger are typically highly correlated with self-reports of other, similar emotions, including envy – which can also motivate costly punishment in pursuit of goals (such as enforcing norms or delivering deterrence benefits to strangers) that are quite distinct from altruistic goals.

In controlling for factors such as dishonest self-reporting, McCullough points out that their major dependent variable were behavioral in nature, so self-reporting wasn't a significant issue. "We did measure anger and other emotions with self-report, and one might say that those are not ideal, but in my opinion self-reports of emotion remain the least bad way of measuring emotions reliably in the laboratory. Is it worthwhile to supplement them with other methods? Sure, but self-reports are still a gold-standard way of getting at them, and I don't think anyone has an extremely reliable way of measuring anger that does *not* include self-reports – although I suppose facial expressions are a possibility." While he also acknowledges that it is often difficult to determine how the laboratory situation itself influences people's responses, this holds for many branches of science.

Although their research did not control for sociocultural differences, including moral, ethical and religious beliefs, McCullough acknowledges, that culture plays a role in shaping behavior – perhaps even punishment behavior of the sort they studied were interested in here – so it would be fine to study that, too. "However," he points out,

"as all experiments do, ours assumed that distinctions among individuals (including sociocultural differences) balance each other out through the process of randomizing participants to the experimental conditions. Therefore, irrespective of one's religious beliefs, participants were equally likely to end up in the experimental condition to which we assigned them."

McCullough also comments on the role of adaptationism – the view that natural selection among individuals within a population is the force responsible for complex functional design in biological systems – in their findings. "Adaptationism is based, one might say, on a couple of key tenets. The first is that natural selection builds complex functional design into biological systems because those design features serve functions – that is, they make something happen in the world that increases the organism's lifetime reproductive success, and as a result, the genes that produce those traits increase in the population until they become species-typical. The second tenet," he continues, "is that adaptations should be better at executing the behaviors they evolved to execute than they are at executing other behaviors that they didn't evolve to execute. So, when we see that suffering direct harm to oneself makes people angry and willing to punish the person who harmed them, but also that they don't become angry or willing to punish when the person harmed was a complete stranger, we have learned something about how humans' anger/punishment system might have evolved via natural selection to operate. Namely, it looks like a system that monitors the world for personal harm and then generates noxious behaviors that might deter harmdoers from behaving similarly toward oneself again. That's essentially one way adaptationist hypotheses about behavior get tested."

McCullough stresses that their critical finding is that victims of unfairness punished transgressors, whereas witnesses of unfairness did not. "It really calls into question something that many scholars have come to take for granted – namely, that we have a built-in taste for

punishing norm-violators, even when the norm violator has not harmed us directly."

One key factor the researchers discovered was that previous evidence for altruistic punishment might have resulted from errors in affective forecasting. "Previous work on the third-party punishment game used a methodology called the strategy method, which requires subjects to simulate in their minds how they might respond if their interaction partner were to treat them or a third party fairly, indifferently, or unfairly in an economic interaction – and then to commit, in advance, to certain plans to punish that interaction partner, at a cost to themselves, with each possible degree of selfishness or generosity that the interaction partner might pursue once the action starts," McCullough explains. "However, this is not generally how people behave in the real world, or in the wider world of experimental social science. Rather, something generally happens to people and *then* they respond to it – they usually don't tell the experimenter how they plan to respond and then commit resources up front to executing that course of action should it arise. Affective forecasting basically describes humans' limited ability to imagine how they would feel, think, or act in a real circumstance, and we think that limitations in affective forecasting might explain, in part, why the previous evidence that is marshaled in favor of the altruistic punishment phenomenon looks so different from our evidence."

Moving forward, says McCullough, the scientists are interested in the factors that might cause people to intervene on behalf of mistreated third parties. "We're not saying that people don't intervene on others' behalf – obviously, they do! The evidence we uncovered in this study indicated that people are not too eager to intervene on behalf of anonymous strangers, especially when there are no reputational benefits from doing so, and nothing else to be immediately gained. Therefore, the question becomes, *on whose behalf will they intervene*, and under what circumstances? That's what interests us going forward."

In terms of other areas of research might benefit from their study, McCullough cites experimental economics. "The literature employs several games whose validity we find to be rather suspect as the basis for making claims about human beings' naturally-selected cooperative instincts," he concludes. "It would be great if other researchers became interested – and in fact, some already have – in the validity of these experiments and inquired more deeply into how the methodological quirks of these games might lead to results that *appear* to make humans more prosocial than we really are."

More information: Do humans really punish altruistically? A closer look. *Proceedings of the Royal Society B*, 7 May 2013 vol. 280 no. 1758 20122723, [doi:10.1098/rspb.2012.2723](https://doi.org/10.1098/rspb.2012.2723)

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