

The dark side of fair play

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We often think of playing fair as an altruistic behavior. We're sacrificing our own potential gain to give others what they deserve. What could be more selfless than that? But new research from Northeastern University assistant professor of philosophy Rory Smead suggests another, darker origin behind the kindly act of fairness.

Smead studies spite. It's a conundrum that evolutionary biologists and behavioral philosophers have been mulling over for decades, and it's still relatively unclear why the seemingly pointless behavior sticks around. Technically speaking, spite is characterized as paying a cost to harm another. It yields virtually no positive outcome for the perpetrator. So why would evolution—which is supposed to weed out such behaviors—let spite stick around?

Smead's research, conducted in collaboration with Patrick Forber of Tufts University and recently published in the journal *Proceedings of the Royal Society B*, sheds new light on this nefarious phenomenon.

A common means of studying social behaviors is through simplified models and games. One of these is called the [ultimatum game](#), in which a one player proposes a division of resources the other player can either accept or reject. Suppose each interaction concerns the distribution of 10 one-dollar bills. The first player could suggest that he take \$5 for himself and give the remaining \$5 to the second player. That would be a fair play.

However, that first player could also go for an unfair option in which he

keeps \$9 for himself and gives just \$1 to the second player. While the second player is worse off if he rejects the proposal (he's got zilch in his pocket instead of \$1), he almost always does so in real-world versions of the game: It's just not fair.

But when Smead and his colleagues decided to simulate this game mathematically to see how it would play out, they found that in fact the exact opposite happens. Fairness usually gets flushed out of the system since it's more beneficial for both the first player (the proposer) to suggest unfair offers and for the second player (the responder) to accept them.

"Evolutionary models don't match what we're observing in real life," Smead said. Clearly, he thought, there must be something else going on.

In the new study, Smead and Forber considered that the ultimatum game is actually quite unlike the real world. It's an extremely simplified simulation of one of infinite ways that two individuals could act. The researchers couldn't, for obvious reasons, make the game as complex and nuanced as real world social interactions, but they could instead just add a little more nuance to it and see what happened.

So that's what they did. In their new version of the game, the researchers introduced something called "negative assortment." Think of assortment as the likelihood that a person you're interacting with is similar to you. In negative assortment, that likelihood is low, so in the ultimatum game the players would likely use different strategies.

Here's where spite comes back into play. If you and I both commit to just making fair offers, but my strategy is to accept all offers—be they fair or unfair—and yours is to accept only fair ones, we are different. A spiteful strategy would be to both make only unfair offers, but reject such offers when they come from the other person.

In the original version of the ultimatum game, a spiteful player will usually walk away with nothing and forfeit the game. But with negative assortment, spite becomes common and actually ends up promoting fairness. "Acting fairly protects you from spite," Smead explained.

Think of it this way. A "gamesman" is someone who only makes unfair offers to benefit himself but accepts whatever comes his way because he believes it'll all wash out in the end. "Gamesmen become a target for spite because they're making unfair offers," Smead said. The "spiters" will reject those offers, eventually killing off the gamesmen.

But fair players will now do quite well in the presence of spite. Since they don't make unfair offers, they don't risk being rejected by the spiteful players. Fairness actually becomes a strategy for survival in this land of spite.

"Real social life is complicated," Smead said. While his new version of the ultimatum game is still a simplification, it illuminates another possible explanation for fair behavior that hadn't been considered before.

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