

Study: Are kids hardwired for revenge?

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Peter Blake, a Boston University associate professor of psychological and brain sciences and director of BU's Social Development and Learning Lab, set out to better understand how and when positive direct reciprocity—paying back a kindness to a specific individual—develops in young children. The findings, published in *Psychological Science*,

suggest that for children, retribution comes before gratitude.

"The idea that you pay back specifically the person who helped you is a really important piece for the evolution of cooperation," says Blake. "It's what sets up a relationship that will hold over the long term."

Blake and fellow scientists from Franklin and Marshall College, Yale University, and the University of California, Irvine, recruited a total of 330 [children](#) between the ages of 4 and 8 to participate in a series of experiments examining reciprocity. In each trial, a child is invited to play a [computer game](#) with four other "players"—in reality, on-screen animal cartoon avatars controlled by the researchers. The four other players each receive a sticker, but the child gets none. The game dictates that the other players may either keep their stickers or give the child their sticker. Then one player (randomly selected by Blake's team) "chooses" to give a sticker to the child. Immediately after, the screen resets, and now it's the child who receives the only sticker and can bestow it on a player of his or her choice.

Next comes the second phase of the game, which mirrors the first—only this time, one of the other players steals a sticker from the child, and then the child gets to steal a sticker from another player.

Blake and his colleagues found that kids, even the youngest ones, readily retaliated against the sticker thieves, specifically targeting them when it came time to take back a sticker. But curiously, the children showed no propensity to reward their benefactors when instructed to give away a sticker. Benefactors fared no better in the sticker giveaway than any other player.

Was it just a lapse in memory? Immediately after each game, researchers quizzed the children on the identities of the givers and takers. The kids recalled both groups with high rates of accuracy. The

findings even held when the scientists analyzed exclusively results from the kids who answered the memory check questions correctly.

Kids clearly had no problem punishing the thieves, so why didn't they feel compelled to repay a kind deed? "We were really puzzled by it," says Blake. So, they began manipulating variables within the original experiment to make it easier for children to identify and reward their benefactors.

For example, they made the giving and stealing voluntary, speculating that children who were more committed to taking action might be more intentional with their targets. Another trial introduced grouping by color, with two of the players wearing the same color clothes as the child's avatar. Perhaps a child might be more inclined to reward those who share some similarities?

In trial after trial, nothing worked. The penchant for retribution held, while reciprocating kindness didn't materialize. "We couldn't get them to do it," Blake says. "One experiment turned to five just trying to get this to work."

So, are kids hardwired for revenge? Blake believes it's more of a defensive move—protecting oneself from future victimization. "Kids aren't out to get people," he says. "They're sending a signal to the person, but also to the broader world that 'I'm not a sucker.'"

Blake says the fact that negative reciprocity appears to emerge earlier than positive reciprocity may mean they spring from distinct developmental mechanisms. He also cites prior research that indicates young children expect others to be kind to them, so antagonistic behavior may register more strongly and prompt a more urgent response.

The study does, however, offer one promising tip for parents hoping to

instill more gratitude in their kids: Tell them a considerate bedtime story. In the final trial of the experiment, researchers told children a simple story illustrating positive reciprocity between peers.

The idea was proposed by Jingshi Hu, a undergraduate researcher working in Blake's lab. A native of China, Hu was convinced that Chinese kids, who are taught through proverbs and stories to show gratitude from a young age, would engage in positive direct reciprocity earlier than their American counterparts.

The tactic worked. After hearing the story, children were more likely to reciprocate to their benefactors, and the trend only grew stronger with age. Returning the favor, it seems, can be taught with relative ease. Blake plans to repeat these experiments in China to test Hu's hypothesis.

In the meantime, parents needn't be troubled by the findings. Behaviors—even those we'd like to avoid—evolve for a reason, Blake says. "If someone steals your lunch money every day, you should do something about it. In primate society, some monkeys or apes get harassed, and that can have devastating effects—they can die in the wild. As far as evolution goes, it's definitely critical that you stand up for yourself."

More information: Nadia Chernyak et al, Paying Back People Who Harmed Us but Not People Who Helped Us: Direct Negative Reciprocity Precedes Direct Positive Reciprocity in Early Development, *Psychological Science* (2019). [DOI: 10.1177/0956797619854975](https://doi.org/10.1177/0956797619854975)

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