

The Complicated Psychology of Revenge

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A few years ago a group of Swiss researchers scanned the brains of people who had been wronged during an economic exchange game. These people had trusted their partners to split a pot of money with them, only to find that the partners had chosen to keep the loot for themselves. The researchers then gave the people a chance to punish their greedy partners, and for a full minute, as the victims contemplated revenge, the activity in their brains was recorded. The decision caused a rush of neural activity in the caudate nucleus, an area of the brain known to process rewards (in previous work, the caudate has delighted in cocaine and nicotine use). The findings, published in a 2004 issue of *Science*, gave physiological confirmation to what the scorned have been saying for years: Revenge is sweet.

A thirst for vengeance is nothing if not timeless. It is as classic as Homer and Hamlet, and as contemporary as Don Corleone and Quentin Tarantino; as old as the eyes and teeth traded in the Bible, and as fresh as the raid that took the life of Osama bin Laden. But while the idea of revenge is no doubt delectable — the very phrase “just desserts” promises a treat — much of its sugar is confined to the coating. The actual execution of revenge carries a bitter cost of time, emotional and physical energy, and even lives. That minute before revenge is savory, as the authors of the *Science* study recognized; but what about the days and weeks that follow?

In the past few years, psychological scientists have discovered many ways in which the practice of

revenge fails to fulfill its sweet expectations. Behavioral scientists have observed that instead of quenching hostility, revenge can prolong the unpleasantness of the original offense and that merely bringing harm upon an offender is not enough to satisfy a person's vengeful spirit. They have also found that instead of delivering justice, revenge often creates only a cycle of retaliation, in part because one person's moral equilibrium rarely aligns with another's. The upshot of these insights is a better sense of why the pursuit of revenge has persisted through the ages, despite tasting a lot more sour than advertised.

Keeping Wounds Green

Many early psychological views toward revenge were based on the larger concept of emotional catharsis. This idea, still widely held in the popular culture, suggests that venting aggression ultimately purges it from the body. But empirical research failed to validate the theory of catharsis, and some recent work contradicts it entirely. In a 2002 paper in the *Personality and Social Psychology Bulletin*, APS Fellow Brad Bushman of The Ohio State University reported higher levels of aggression in people who had supposedly vented their anger than in those who had done nothing at all.

If cathartic activity fails to dissolve hostility in general, what is to say revenge will dissolve the anger caused by one offense in particular? That doubt laid the foundation for a recent series of tests led by Kevin Carlsmith of Colgate, who conducted the research with APS Fellows and Charter Members Timothy Wilson of the University of Virginia and Daniel Gilbert of Harvard. Wilson and Gilbert have often found that people make powerful mistakes when predicting how they will feel about something in the future; with Carlsmith, they asked whether people could be wrong about the expected emotional benefits of revenge as well. Perhaps revenge is sweet, or perhaps the words of Francis Bacon are more accurate: "A man that studieth revenge, keeps his own wounds green, which otherwise would heal, and do well."

For the study, Carlsmith and his collaborators placed participants into groups of four and gave each a dollar, which they could either invest in a group pot or keep for themselves. To entice investment, the researchers promised to add a 40 percent dividend to the group total before redistributing the boosted pot among all four members. This created a classic experimental dilemma: what's best for the group is for all four members to donate their dollar, but what's best for the individual is to keep the dollar and *also* receive one quarter of the final pot distribution, which grows through the investments of the others — in other words, as the researchers put it, to be a "free rider."

At the end of the trial, participants discovered that one member — secretly controlled by the researchers — had acted as a free rider. Some of the participants, called "non-punishers," learned about this moral violation but were given no chance to do anything about it. Others, known as "punishers," were given the chance to avenge the selfish behavior by reducing the earnings of the offender. (The decision to punish carried a small fee, to simulate the personal cost of revenge.) Both punishers and non-punishers rated their feelings immediately after the game, as well as 10 minutes later. A final group, dubbed "forecasters," had no power to punish but recorded how they expected to feel if they could.

The findings were exactly as Francis Bacon had imagined: Punishers actually felt worse than forecasters predicted they would have felt had they been given the chance to be punishers. Punishers even felt worse than non-punishers, despite getting the chance to take their revenge. Ten minutes after the game,

punishers continued to brood on the free rider significantly more than the others did — an “increased rumination” that prevented them from moving on, the researchers surmised. All told, Carlsmith and company concluded in a 2008 issue of the *Journal of Personality and Social Psychology*, people erroneously believe revenge will make them feel better and help them gain closure, when in actuality punishers ruminate on their deed and feel worse than those who cannot avenge a wrong.

“I think uncertainty prolongs and enhances emotional experiences, and one of the things that avengers do unintentionally is to prolong the unpleasant encounter,” Carlsmith says. “Those who don’t have a chance to take revenge are forced, in a sense, to move on and focus on something different. And they feel happier.”

Delivering a Message

That most people fail to feel good after revenge does not mean revenge can never feel good. The hunt for this pleasant side of retribution has driven the recent work of German psychological scientist Mario Gollwitzer. “I think that taking revenge has generally a low chance of being successful or satisfying for the avenger,” says Gollwitzer. “I was interested in those instances in which revenge can be ‘sweet,’ and I wondered what it exactly is that makes revenge sweet for the avenger.” In the service of that interest, Gollwitzer has designed some beautifully elaborate experiments; after all, he says, it takes “careful calibration” to provoke a strong response from participants while remaining inside the ethical boundaries of institutional review boards. (How much more might we learn about revenge, one can’t help but think, if researchers were allowed to murder a participant’s father and marry the mother?)

Gollwitzer has explored two theories for why revenge could be satisfying. The first is known as “comparative suffering,” the idea that simply seeing an offender suffer restores an emotional balance to the universe. If this were the case, then victims of wrongdoing who learn of an offender’s misfortune should feel equally satisfied whether or not they were personally responsible for that misfortune. The second theory — the “understanding hypothesis” — holds that an offender’s suffering is not enough, on its own, to achieve truly satisfactory revenge. Instead, the avenger must be assured that the offender has made a direct connection between the retaliation and the initial behavior.

In one recent study, Gollwitzer and his collaborators asked participants to solve anagrams and assigned them a partner who was presumably doing the same in another room. Each correctly solved anagram earned the team a raffle ticket for a gift certificate worth €25. At the end of the trial, the researchers asked participants to divide the tickets fairly. Most participants chose an equal split, but the partners — actually research confederates — assigned almost all of the tickets to themselves. When participants were informed of this decision, they were given the chance to reduce their partner’s ticket total. About 60



percent of participants took this chance to the fullest, leaving the

partner many fewer tickets than the initial fair distribution had provided. In a practical sense, these participants had taken revenge on the partner's unjust action.

Other studies might have stopped there, but Gollwitzer took the additional step of giving avengers the chance to send their partner a message. The majority of those who chose to write this retaliatory note made reference to the injustice ("Sorry for taking tickets away, but unfortunately, you only cared about yourself," one wrote). In response, the avengers then received one of two types of replies prepared by the researchers. Some of these, meant to test the revenge theory of understanding, acknowledged that the retaliation had come as a result of their selfish behavior. Other messages, meant to test "comparative suffering," showed no such understanding and even expressed a little indignation over their reduced ticket total. To conclude the test, the researchers asked all participants to rate their level of satisfaction with the exchange.

The findings suggest that revenge can succeed only when an offender understands why the act of vengeance has occurred. Among participants who chose to avenge the selfish action, those who received a message of understanding reported much more satisfaction than did those who received an indignant response. In fact, the only time avengers felt more satisfaction than participants who took no revenge at all was when they received an indication of understanding. Put another way, unacknowledged revenge felt no better than none at all. Successful revenge is therefore about more than payback, the authors conclude in the April 2011 issue of the *European Journal of Social Psychology*; it is about delivering a message.

"The finding that it is the offender's recognizing of his wrongdoing that makes revenge sweet seems to suggest that — from the avenger's perspective — revenge entails a message," Gollwitzer says. "If the message is not delivered, it cannot reestablish justice."

Your Justice or Mine

The reestablishment of universal justice certainly seems to be at the heart of revenge. In early 2001, a research team led by Cheryl Kaiser of Michigan State surveyed people for their belief in a just world by seeing how much they agreed with statements like "I feel that people get what they deserve." After the September 11 attacks, Kaiser and colleagues returned to these people and assessed their responses to the event. In a 2004 issue of *Psychological Science*, the researchers reported that the more a person had believed in a just world before the attacks, the more this person experienced distress after them — and the greater this person's desire for revenge.

The problem with a revenge structure based on rectifying injustice is that the definition of justice varies from person to person — and, even within a single person, from perspective to perspective. A few years ago, a group of researchers led by Arlene Stillwell of the State University of New York at Potsdam asked people to describe two events that had occurred in their lives: one instance in which they had responded to an offense with retribution, and another in which they had been on the receiving end of revenge.

Stillwell and her collaborators found that when people were avengers they believed their action had fairly restored equity to the relationship; when they were the recipients of revenge, however, they considered the payback excessive. This shifting viewpoint explains why revenge often occurs in endless

cycles; no sooner did U.S. Navy Seals avenge September 11 by killing Osama bin Laden, for instance, than Al Qaeda vowed to seek revenge for his death.

“Successful revenge appears to make the avengers feel satisfied that equity has been restored, but in many cases the recipient of revenge will perceive the aftermath of revenge as marked by inequity and negative outcomes,” Stillwell and her coauthors conclude in a 2008 issue of *Basic and Applied Social Psychology*. “The divergent perceptions of avenger and recipient will make it difficult to bring an end to the cycle of revenge in a way that both avenger and recipient will regard as satisfying, positive, and fair.”

Beyond Revenge

The long history of vengeance in art suggests a basic instinct for retribution ingrained in the human spirit. Indeed, recent facts largely confirm this age-old fiction: Revenge has been cited as a factor in one in five murders that occur in developed countries, and a report from 2002 found that between 1974 and 2000 three in five school shootings in the United States were driven by vengeance. At the lighter end of the spectrum, the popular urge for payback has inspired some business ventures. Rahm Emanuel reportedly once hired a company called Enough is Enough to avenge a polling error, and although a recent call to this business found it defunct, a newer outfit, Alibis & Paybacks, currently advertises its services in Los Angeles.

But if revenge tastes so bad to the person, why does it remain a favorite dish of the people? In response to this apparent contradiction, many psychological scientists have embraced an evolutionary explanation of revenge. Michael McCullough and Benjamin Tabak of the University of Miami, along with Robert Kurzban of the University of Pennsylvania, recently prepared a book chapter that outlines payback’s adaptive function. They argue that individual acts of vengeance serve as group announcements that certain behaviors will elicit retaliation. In other words, the purpose of revenge might be less about responding to one particular offense than about preventing several others.

Seen this way, revenge provides a great cultural benefit — leading to more cooperative, and therefore productive, societies — in exchange for its great personal costs. This larger function takes three forms, McCullough and his coauthors argue. The first is through direct deterrence. Simply put, revenge directly discourages an aggressor from subsequently performing the same offense. The second effect of revenge is indirect. By avenging specific actions, a person can establish a general definition of acceptable conduct and, in the process, avoid future confrontation. In this sense, reputation precludes revenge.

The third adaptive function of revenge goes beyond simple deterrence of negative behaviors and actually coerces beneficial ones. To understand this idea, says McCullough, it helps to envision life as an early human. Suppose in that existence you and a neighbor must take turns guarding your camps from jaguar attacks. If you fall asleep one night and the animal kills a neighbor’s child, this negligence, in the eyes of natural selection, is functionally similar to killing the neighbor’s child directly. The threat of revenge in response to such failed cooperation — a concept known as altruistic punishment — would entice you to stay awake (with the expectation, of course, that your neighbor will do the same on his watch).

Pervasive as this revenge instinct may seem, modern civilization can feel fortunate that resisting the urge to retaliate is even more common. The decision to forego vengeance is not necessarily born of human

kindness; on the contrary, the body may have evolved some type of internal scale that weighs the adaptive benefits of revenge against its various costs — from the potential for retaliation to the severance of important relationships. More often than not in today's world, this scale tips in favor of forgiveness.

“You have to have some way of maintaining relationships, even though it's inevitable some will harm your interests, given enough time,” says McCullough, who is also the author of *Beyond Revenge: The Evolution of the Forgiveness Instinct* (2008). “We think what has evolved is a secondary system” — the forgiveness instinct — “that enables people to suppress the desire for revenge and signal their willingness to continue on, even though someone has harmed their interests, assuming the person will refrain from doing so again in the future.” That might not be the most uplifting interpretation of how the brain governs human relations, but it is at least a relatively peaceful one.