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Revenge: A Multilevel Review and Synthesis

Joshua Conrad Jackson,[1] Virginia K. Choi,[2] and Michele J. Gelfand[2]

[1]Department of Psychology, University of North Carolina, Chapel Hill, North Carolina 27599, USA; email: joshcj@live.unc.edu

[2]Department of Psychology, University of Maryland, College Park, Maryland 20742, USA; email: mgelfand@umd.edu

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Abstract

Why do people take revenge? This question can be difficult to answer. Vengeance seems interpersonally destructive and antithetical to many of the most basic human instincts. However, an emerging body of social scientific research has begun to illustrate a logic to revenge, demonstrating why revenge evolved in humans and when and how people take revenge. We review this evidence and suggest that future studies on revenge would benefit from a multilevel perspective in which individual acts of revenge exist within higher-level cultural systems, with the potential to instigate change in these systems over time. With this framework, we can better understand the interplay between revenge's psychological properties and its role in cultural evolution.

Contents

INTRODUCTION

Few things capture our attention like revenge. Many of our oldest and most captivating stories—Homer's *Iliad*, *Beowulf*, Shakespeare's *Hamlet*, the Sanskrit epic *Mahabharata*—are built on vengeance. Newspapers also brim with tales of revenge, whether they describe a man's shooting spree after being fired from his airport job (Talley 2016) or a distraught woman severing her husband's penis after years of his abuse (Margolick 1994).

Yet for such an interesting phenomenon, revenge has not received much attention in the history of intellectual thought. Many ancient philosophers, who were devoted to finding the most virtuous ways to live, seldom discussed revenge. When they did, they dismissed revenge as immoral and brutish. In Plato's *Protagoras*, people who took revenge were described as "beasts" (see Denyer 2008, p. 324a). St. Augustine and Blaise Pascal later made similar critiques, with Pascal (1852, pp. 911-659) asking in *Pensées*, "Must one kill to ensure there are no evildoers? That makes two evildoers instead of one."

Until recently, revenge was also overlooked by psychologists. Early theories of conflict and aggression gave revenge a surprisingly one-dimensional treatment—viewing it as a simple phenomenon rather than a complex process with diverse antecedents and manifestations (but see Horney 1948). Hydraulic models of aggression, for example, claimed that revenge followed the accumulation of a victim's pent-up negative energy after experiencing a slight (Freud 1930, Miller 1941). Clinical models of conflict treated revenge as the objectionable alternative to forgiveness (Worthington & DiBlasio 1990). Yet these earlier views ignored the fact that many people take revenge to feel good rather than to release pent-up negative energy (Chester & DeWall 2017, Gollwitzer & Bushman 2012), and that vengeance can be functional and even necessary in some contexts (McCullough et al. 2013, Nowak et al. 2016).

Revenge: motivated retaliation after a perceived harm to well-being

The historical lack of research on revenge is surprising, not only because stories of revenge are so intriguing, but also because revenge is remarkably common and takes a serious toll on

society. A 2012 study by the New York City Police Department found that 42% of the city's murders stemmed from revenge (New York City Police Dep. 2012). Across the United States, revenge is implicated in as many as 61% of school shootings and 27% of bombings (Bur. Alcohol Tob. Firearms 1999, Vossekuil et al. 2002). This is not only a pattern found in the United States. Revenge is a global phenomenon. It is implicated as a causal factor in many homicides worldwide (Daly & Wilson 1988, Kopsaj 2016). Historical cross-cultural analyses have uncovered evidence of vengeful feuds or individual acts of vengeance in 90% of contemporary and traditional societies around the world (Ericksen & Horton 1992).

It is somewhat of a puzzle why revenge is so widespread. People typically have a natural aversion to aggression and confrontation (Cushman et al. 2012). They are also typically self-interested and seldom willingly give up resources or safety (Thaler 1990), yet revenge is antithetical to both of these tendencies. Neither does revenge seem to yield any personal gain (although we return to this point below). Avengers who commit crimes usually go to jail, and people who take revenge in the workplace usually get fired. In extreme cases, like honor killings or revenge suicides, revenge results in the loss of a family member or the loss of one's own life. Perhaps most surprising is the fact that people do not even feel very good after acts of vengeance. Despite the short burst in positive affect immediately after a vengeful act, it only takes a few minutes for avengers to begin reporting regret, rumination, and negativity (Carlsmith et al. 2008).

Given these consequences, the question of why anyone would ever take revenge is important both as a means of reducing crime and violence and as a puzzle of human behavior. In this article, we provide a multilevel review of the antecedents and consequences of revenge. Revenge is conceptualized as motivated retaliation after a perceived harm to one's well-being (see Elshout et al. 2015, Schumann & Ross 2010). Generally speaking, revenge is aggressive, but not all aggressive acts represent vengeance. Unsolicited acts of aggression, like deviance, incivility, and bullying, would not count as revenge (Raver & Barling 2008); neither would self-defense. Whereas acts of self-defense are intended as protection and take place immediately following a threat, revenge is typically retributive, and people usually wait until long after an imminent threat has subsided before exacting vengeance (Jones & Carroll 2008).

With our working definition of revenge, we present a comprehensive review of research on revenge from psychology and related fields.[1] We integrate these findings into a broad historical perspective with emphasis on the potential distal and proximal functions of revenge (Tinbergen 1963). We examine why revenge, despite its detrimental effects, has evolved and persisted in humans (the distal causes of revenge), and we discuss when someone decides to take revenge (the proximal causes of revenge). As we demonstrate, these two perspectives are closely intertwined. Understanding revenge's distal function sheds light on the people and situations in which revenge is most common, much like understanding a car's function helps us predict who owns cars and when people are most likely to drive them. Our fourth section discusses how revenge occurs across different people and cultures, and the final section synthesizes these findings into a multilevel framework and discusses new frontiers for future research on revenge.

Feud: protracted cycle of retaliatory aggression between two parties

Multilevel framework: a theoretical stance that explains behavior in terms of structural group-level influence as well as individual-level influence

Evolution: change or modification over time

WHY (DO PEOPLE TAKE REVENGE)?

How did humans evolve to avenge? At first glance, it may seem counterintuitive to think about revenge in evolutionary terms. Evolution, by definition, implies the emergence of a trait over

[1]The literature in this review comes from database searches for (*a*) articles with "revenge," "vengeance," and "retaliation" as keywords; (*b*) articles citing major papers on this topic; and (*c*) articles cited within recent papers on revenge. Literature from the past 15 years was prioritized, but older findings were included in the absence of more recent research.

time. Yet revenge feels so visceral and universal that it surely seems to have been a core part of human nature. In Shakespeare's *The Merchant of Venice*, Shylock proclaims, "If you prick us, do we not bleed? If you tickle us, do we not laugh? If you poison us, do we not die? And if you wrong us, shall we not take revenge?" These words put revenge on the same level as basic biological processes, which evolved far back in human history—far before people began to expand from smaller settlements into the larger organized communities that characterize most contemporary societies (Waters et al. 2016).

Shakespeare's testament highlights a point of contention between two popular evolutionary models of revenge. Biological models propose that revenge was biologically hardwired during early human history. In contrast, cultural models believe that revenge as we know it emerged later in human history, as social norms evolved within human societies. Most versions of both models view revenge as adaptive. However, the models typically differ in their explanations of for whom revenge was adaptive. Biological models suggest that revenge is functional for individual people, whereas cultural models argue that revenge is functional for societies at large.

Did Revenge Biologically Evolve?

According to some theories, revenge evolved during the Pleistocene Era—the time frame in which the Ice Age occurred and human anatomy developed into what it is today. One forerunning evolutionary theory of revenge was outlined by McCullough and colleagues (2013; see also Sell et al. 2009). Their biological model suggests that aspects of early human history contributed to the genetic evolution of revenge. In particular, it points out that our evolutionary predecessors faced a number of adaptive problems—including murder, theft, and mate poaching—that threatened their survival and reproduction. The best way for these early humans to escape such threats was to fight fire with fire—responding in kind to aggressive threats. In this sense, revenge evolved primarily as a deterrence mechanism, alerting potential antagonists to think twice before harming a victim again and ensuring that avengers would not be repeatedly cheated or attacked.

The biological model is consistent with several empirical findings. For example, it appears to explain why revenge has been detected in most human cultures (Ericksen & Horton 1992). It also appears to explain why vengeful behavior is highest among men (Miller et al. 2008) and those with higher upper body strength (Sell et al. 2009). McCullough and colleagues (2013, p. 10) take this as suggestive evidence that the vengeful instinct coevolved with gender and physical strength, as vengeful but physically weak individuals were more likely to die before reproducing. Revenge has also been found to successfully deter future aggression in laboratory-based paradigms (Ford & Blegen 1992), suggesting the persistence of its potential original function.

This biological model is also somewhat supported by monozygotic twin data, which indicates that genes account for 40% of self-reported vengefulness among men and 32% among women, with little incremental variance accounted for by shared environment (Eaves et al. 2008). There have even been efforts to identify a gene for vengefulness, with some attention paid to the monoamine oxidase A (*MAOA*) gene. In an economic game, participants with a high-activity *MAOA* gene were more likely than participants with a low-activity *MAOA* gene to dispense painful hot sauce after they had been provoked (McDermott et al. 2009; see also Meyer-Lindenberg et al. 2006). That being said, the *MAOA* gene has more recently been linked with other risk-taking behaviors (Frydman et al. 2011, Zhong et al. 2009), making it unlikely that it evolved for the specific purpose of facilitating revenge.

This evidence strongly suggests that biological evolution has played an important role in human revenge. However, evidence that a distinct cognitive architecture for revenge biologically evolved in early human history is less clear. Retaliatory aggression does not appear to be unique to humans.

Rhesus macaques will attack group members who find food but do not announce it through food calls (Hauser & Marler 1993). Northern elephant seal mothers will bite and kill unrelated pups who attempt to steal milk (Reiter et al. 1978). Lions will stalk and attack jackals that try to steal their kills (Mills 1991). European coots and moorhens will pick up and violently shake hatchlings from a different nest who have stolen food (Horsfall 1984). Clutton-Brock & Parker (1995) review many other forms of retaliatory aggression observed in animals. Clutton-Brock (2017) found that retaliatory aggression of nonhuman animals serves a similar deterrence function as that outlined by McCullough and colleagues (2013). Therefore, it does not appear likely that retaliatory aggression evolved because of any particular feature in the landscape of specifically human history. Instead, various forms of retaliatory aggression may have been stamped into our genome long before the appearance of modern hominids.

Cultural evolution: changes in human culture—including knowledge, skills, customs, or languages—over time, potentially for adaptive reasons

There are, of course, elements of revenge that are more distinct to humans. Humans have the ability to categorize an event as worthy or unworthy of vengeance, then forecast the future to predict an appropriate time to retaliate, then take their enemy's perspectives to anticipate how their vengeful actions might make the other person feel. It is possible that revenge in humans evolved as a coordination between retaliatory aggression instincts and domain-general abilities such as perspective taking, event categorization, and affective forecasting. There is no evidence to date, however, of a neural network that coordinates these processes during revenge.

There is also the question of why these disparate processes came together to produce revenge at all. Why do we categorize some acts as worthy of vengeance and others as not? Why does forecasting lead us to see revenge as worthwhile in the long run? A second class of models suggest that culture is the key to answering these questions. In these models, cultural norms play on psychological processes to encourage revenge in contexts where it is most valuable.

Did Revenge Culturally Evolve?

In Exodus 21:23–24, God explains to Moses, "If there is serious injury, you are to take life for life, eye for eye, tooth for tooth, hand for hand, foot for foot." However, in the Bible's New Testament (Matthew 5:38–42), Jesus says, "You heard that it was said, 'An eye for an eye and a tooth for a tooth,' but I say to you, do not resist the one who is evil. But if anyone slaps you on the right cheek, turn to him the other also." Jesus's words illustrate how much the Bible pivots on revenge, from its fiery Old Testament to its gentler Gospels. In the roughly 500 years between the writing of the Bible's two books, something in Semitic culture changed to make revenge fall out of favor. Perhaps as a consequence, an angry punitive God had been replaced by His forgiving son.

The Bible's pivot on revenge is an example of cultural evolution—meaning the change in culture over time (Henrich & McElreath 2003). The science of cultural evolution is a broad field comprising many different perspectives (Brewer et al. 2017). All theories agree that people's ecological and social contexts influence their behavior in a manner that produces cultural diversity. Some cultural evolutionists argue that this occurs because people's psychological processes interact with their unique environments in a way that encourages different behavioral norms across different societies. For instance, ocean fishermen in the Trobriand Islands customarily practiced more elaborate rituals than lagoon fishermen (Malinowski 2014). These complex rituals helped ocean fishermen cope with the psychological anxiety of fishing in a far more dangerous environment. Others claim that social and ecological contexts affect cultural evolution because they endow certain groups with greater evolutionary fitness than others (Richerson et al. 2016).

Like the biological perspective, most cultural evolution theories agree that revenge draws on genetically evolved processes from the Pleistocene (see Gintis 2000). However, they emphasize

that revenge in humans also requires the presence of internalized social norms, which evolved in the later Holocene Era (Gavrilets & Richerson 2017). The Holocene was marked by larger societies composed mostly of strangers, and social norms preserved trust and cooperation within these groups (Gelfand & Jackson 2016). Cultural models propose that, as social norms became internalized, revenge coevolved in situations where people felt outraged over personal attacks that violated these norms (Fehr & Henrich 2003). Cultural models therefore imply that it is the feeling of being mistreated based on normative standards of behavior that ultimately motivates revenge, regardless of whether revenge can deter future harm (Fessler 2006). As stated by Gintis (2013, p. 22), "Individuals seek revenge not when they have been hurt, but when they have been morally wronged."

When speaking of revenge's function, cultural models typically argue that revenge is not adaptive for individual people, but that it does help groups maintain normative homeostasis (Elster 1990, Fehr et al. 2002, Rieder 1984). Cooperative communities exist in a delicate balance where people mutually benefit from public goods but also where small numbers of defectors can disrupt this equilibrium (Mueller 2004). In this way, society mimics a buffet that is short on food. If everyone takes a small portion, then there will be enough for everyone, but if even a few people serve themselves too generously, then the rest go hungry. In this situation, diners who know that the people in line with them are vengeful are less likely to overeat, and consequently, everyone is more likely to get their share. Revenge therefore serves as a form of strong reciprocity—it can be costly to the avenger yet beneficial to the group at large (in contrast to forms of weak reciprocity, such as food sharing, where both parties benefit) (see Gintis 2000).

Some cultural evolutionary perspectives conceptualize revenge as most functional—and thus most likely to evolve—in contexts without strong institutional laws, where victims of a perceived slight must personally retaliate to restore justice (Duntley & Shackelford 2008). After coding 186 societies in the standard cross-cultural sample, Ericksen & Horton (1992) found that revenge was most common in tribal groups with no institutional justice systems. Likewise, cultures of revenge are common in US neighborhoods with low socioeconomic status (SES); these neighborhoods typically have the lowest police presence (Anderson 2000, Kubrin & Weitzer 2003). The adoption of a so-called code of the streets has been shown to mediate the link between low-SES areas and rates of vengeance (Brezina et al. 2004).

Nisbett & Cohen (1996) used a similar approach to explain why feuds and acts of revenge were common in the American South, which historically relied on a herding economy in which property could be easily poached or destroyed. Since law enforcement was unreliable in this historical environment, aggressive responses to perceived slights were essential for keeping property and maintaining the broader economic system (Cohen et al. 1996). In a set of computational simulations, Nowak and colleagues (2016) showed that cultures of honor indeed emerged fastest in simulations that included unreliable policing. The role of institutional strength could even explain why the Biblical judgment of revenge changed so dramatically from the Old Testament to the New Testament. The New Testament was written during a period of larger states and more stable social organization, making revenge less valuable and easier to disparage.

Cultural models of revenge answer many questions that biological models do not, such as why rational people can deliberately engage in destructive acts of revenge, and why the prevalence of revenge varies so much around the world. However, these models are best conceptualized alongside—rather than instead of—biological models of revenge's evolution. For instance, McCullough and colleagues (2013) proposed that a cognitive revenge system evolved genetically in humans, but they also agreed that inputs to this system are heavily dependent on culture. Gintis (2000) theorized that ecological threats during the Pleistocene induced cooperation pressures that made groups with vengeful individuals especially likely to survive and reproduce, yet he also writes

that the pressures of the Holocene then escalated this need for cooperation, leading to the cultural evolution of revenge in large-scale human groups.

There is a continued need for integration of cultural and biological models of revenge. This integration involves (*a*) determining whether revenge offers fitness advantages that go beyond the functionality of retaliatory aggression in nonhuman animals, (*b*) exploring any evidence of an evolved neural network that integrates the various psychological components involved in revenge, and (*c*) searching for gene–culture coevolution patterns in which cultural developments influenced the evolution of revenge-related genes. These projects could illustrate the ultimate function of revenge in humans and the secret behind its prevalence around the world. They could also speak to the proximal predictors of vengeance: the situational and psychological mechanisms that determine when people take revenge.

WHEN (DO PEOPLE TAKE REVENGE)?

Regardless of how revenge evolved, it is now a fact of human life. Despite its high costs, people routinely see vengeance as worthwhile or even compulsory. Some avengers will wait months or years to exact their revenge. After witnessing his father's murder as a child, Alam Khan waited 12 years to kill the man responsible. Shigeta Miura, a middle-aged man, sent packages of garbage and dirty underwear to people who, decades earlier, teased him as a child. What is happening in people's minds as they make these decisions? Or, put differently, when do psychological processes and environmental contexts lead to revenge?

Psychological Processes Involved in Revenge

People's appraisal of a transgression is a strong predictor of whether they will take revenge. Revenge is often preceded by perceptions that some harmful action has been morally reprehensible or norm violating (Bavik & Bavik 2015, Carlsmith et al. 2002), even among preschool-aged children (Mendes et al. 2018). In this vein, acts that are perceived as severe (Wang et al. 2018), aggressive (Gerlsma & Lugtmeyer 2018), and offensive to one's central moral values (Fiske & Rai 2014) are most likely to elicit revenge. These perceptions can stem from events from finding out one's partner has been unfaithful (Boon et al. 2009) to seeing a workplace supervisor as abusive or neglectful (Hershcovis et al. 2007, Jones 2009, Mitchell & Ambrose 2007). Importantly, the same acts can often vary in their moral conceptualizations across persons and cultures (Gelfand et al. 2001). For example, Shteynberg and colleagues (2009) found that Americans were more likely to take revenge following threats to their individual rights, whereas Koreans were more likely to take revenge after duty-based harms.

Mind perception is a key factor in these appraisals (Gray et al. 2007, Young et al. 2011). If people believe that a transgression is intentional and willful, then they will judge it to be far more morally egregious than if they believe a harm was unintentional (Ames & Fiske 2013). Variance in perceived intentionality can also predict which groups of people will most commonly elicit revenge. People will display less anger and less retaliation when children, disabled people, and nonhuman animals transgress, since these agents are viewed as less intentional and more vulnerable than nondisabled, adult humans (Gray & Wegner 2009). Intentionality may act strongly on retaliation because it increases perceptions of a harm-doer's responsibility for their offenses, which, in turn, makes revenge more likely (Rudolph et al. 2004).

Anger plays an important mediating role between people's appraisals of transgressions and their tendency to take revenge (see Fessler 2006). Countless studies have now identified anger's correlational (Barber et al. 2005, Eisenberger et al. 2004) and causal (Lerner et al. 1998) roles

in revenge (for a review, see Lerner & Tiedens 2006). In studies that simultaneously measured anger, fear, sadness, and frustration, anger emerged as the best emotional predictor of vengeance (Roseman et al. 1994). The sense of righteous anger, which is anger specifically tied to perceived injustices, has been pinpointed as a robust predictor of revenge (Tripp & Bies 2010).

Consistent with this link, studies have identified a strong correlation between trait-level anger and revenge (Douglas & Martinko 2001, Hershcovis et al. 2007, Sindermann et al. 2018). People with personality types that are characterized by higher levels of anger, such as neuroticism and narcissism, are more likely to take revenge following provocation (Brown 2004, Maltby et al. 2008). Twenge & Campbell (2003) found that narcissists were particularly likely to endorse revenge after social rejection because they became angry over not receiving the respect that they felt they deserved. Exline et al. (2004) likewise showed that people high in narcissism typically expected special treatment, which made them angrier and less likely to forgive after a perceived slight.

There does not seem to be any single component of anger that drives revenge. Instead, several properties of anger seem to simultaneously encourage vengeance. Anger tends to narrow attention and inhibit the ability to cognitively process events outside of the anger-eliciting stimulus (Loewenstein 1996). This tendency produces fixation and rumination about the act of vengeance, which can prevent people from shifting their focus or considering forgiveness and its benefits (Barber et al. 2005, Wilkowski et al. 2010). Simultaneously, anger reduces self-control and executive functioning (Dewall et al. 2007, Pronk et al. 2010) and activates the behavioral approach system (Carver & Harmon-Jones 2009, Rajchert & Winiewski 2016); each of these factors predicts the likelihood of revenge (Bordia et al. 2008, Chester et al. 2016). Interventions grounded in these findings have found that mindfulness mediations mitigate workplace revenge by reducing rumination and improving self-regulation (Long & Christian 2015).

Yet there are still debates over the nature of anger and how it might encourage forms of aggression, including revenge. Some argue that there is a specific cognitive system of anger that produces aggressive states of mind (see Ellsworth & Scherer 2003). Others argue that anger is simply a conceptual label that often covaries with the experience of moral outrage, behavioral approach, and lack of executive control (see Barrett 2017). Past studies isolated neural structures and networks associated with anger, such as the orbitofrontal cortex and the left prefrontal cortex (Murphy et al. 2003), but recent meta-analyses indicate no consistent neural activation pattern specific to anger (Kober et al. 2008, Lindquist et al. 2012). This evidence suggests that there may not be a specific neural anger state, even though the processes that we associate with the concept of anger tend to predict revenge.

Neither is anger the only affective predictor of when someone will take revenge. Experiences of shame and humiliation can produce violent and vengeful tendencies (Brown 1970), especially when ashamed people think that revenge could restore their significance (Kruglanski et al. 2014). People's forecasts of how much they will enjoy revenge also play an important role in whether they see vengeance as worthwhile. As suggested by the classic idiom, "Revenge is sweet," the anticipation of pleasure and reward is a common feature of these forecasts (Chester 2017). In fact, people who decide to take revenge often do so because they believe that it will repair their negative mood (Bushman et al. 2001, Chester & DeWall 2017), something that Chester & DeWall (2017, p. 413) have labeled "the desire to return to affective homeostasis."

Research in neuroscience supports the notion that expected rewards are involved in decisions to take revenge. Neurological reward centers such as the dorsal striatum are activated during retaliatory aggression (Brüne et al. 2013, Chester & DeWall 2015) and even when people just think about taking revenge (De Quervain et al. 2004). These effects are strongest among people who self-report that they enjoy hurting people (Chester 2017) and when avengers know that targets of revenge understand that they are being punished for their past actions (Gollwitzer

& Denzler 2009, Gollwitzer et al. 2011). Yet the immediate pleasure of revenge is often followed by an increase in negative affect after a few minutes have passed (Carlsmith et al. 2008). More recently, Eadeh et al. (2017) have integrated these findings by arguing that revenge is bittersweet, eliciting both positive and negative feelings. Nevertheless, the fact that people expect pleasure with revenge speaks to retaliatory aggression's evolutionary roots. Expected pleasure may have evolved to offset the costliness and riskiness of retaliation, convincing people to take revenge when they would typically avoid confrontation.

In addition to future pleasure, people also appear to forecast their future reputation when they take revenge. Most victims of transgressions feel that their status has been threatened by a provocation, and that vengeance is a means of restoring their previous reputation (Crombag et al. 2003, dos Santos et al. 2011). People in laboratories are more likely to retaliate against defectors if there is a third party present (Kim et al. 1998), and men's self-reported value of their public reputation predicted how angry they felt after being bumped by a passerby in a train carriage (Ijzerman et al. 2007). Another insightful study followed 900 adolescent boys over time and found that boys who believed that retaliatory aggression was necessary to restore honor after an insult were more likely to have injured or killed someone a year later (Brezina et al. 2004).

Even though deterrence has been proposed as a major reason for the evolution of retaliatory aggression, it is unclear whether people actually take revenge with deterrence in mind (see Osgood 2017). When explicitly asked to justify their revenge, people will cite deterrence motives (Darley & Pittman 2003) and will report feeling better about revenge when it has affected a positive change (Funk et al. 2014). However, there is also evidence that these self-reports are post hoc rationalizations rather than true motives. For example, when people are calculating the appropriate severity of retributive punishment, they are more attuned to whether the punishment matches the original transgression than whether it deters future harm (Carlsmith & Darley 2008). People playing economic games will also take revenge when they know they will not encounter their partner again, which would not make sense if revenge was solely intended to deter future harm (Fehr & Gächter 2000). Interestingly, vengeful people often feel less safe from future harm than do nonvengeful people (Akın & Akın 2016), indicating that people do not commonly take revenge because they think it will protect them. This evidence suggests that, of the many proximal predictors of revenge, deterrence may be among the least influential.

People may not always take revenge to deter future harm, but they do appear to be keenly attuned to whether or not their vengeance will be successful. Consequently, people are generally less likely to take revenge when their targets are more powerful than they are (Aquino et al. 2006) or when their targets are highly likely to retaliate and continue the cycle of vengeance (Petersen 2010). This explains why employees in organizations are more likely to seek revenge when they are higher up the chain of command than the offending party (Aquino et al. 2001; but see Karremans & Smith 2010). In an experimental study, when low-power individuals experienced a jolt of incidental power, they sought more revenge than participants who had always held relative power (Strelan et al. 2014). In lieu of taking revenge, people in low-power positions will often fantasize about taking revenge, but these fantasies can backfire as a mood repair strategy, since they make people feel even angrier about the original transgression (Lillie & Strelan 2016). By contrast, actually taking revenge does help low-power individuals feel a measure of justice (Liang et al. 2018).

Many other individual differences correlate with revenge. Unsurprisingly, people's trait-level forgiveness, or their dispositional tendency to forgive (Berry et al. 2001), correlates negatively with their tendency to take revenge (Fehr et al. 2010). In addition, religious people tend to endorse revenge less often than do the nonreligious (McCullough & Worthington 1999), since Christian, Jewish, Islamic, and Buddhist values stress forgiveness (see Bono & McCullough 2004). Yet the

relationship between religion and revenge can be more complicated than these studies suggest, as different measures of religiosity can show opposite effects on revenge (Greer et al. 2005; see Jackson & Gray 2018).

Above all, these psychological processes and individual differences must be contextualized within relationships, cultures, and situations. Our next section explores when these contextual factors influence the likelihood of revenge.

Contexts that Encourage Revenge

Twentieth-century social scientists often made internal attributions when explaining cases of revenge. In the ethnographic record, anthropologists routinely referred to entire societies as "vengeful people" and used this label to explain cross-cultural differences in warfare or feuding (e.g., Heizer et al. 1952, p. 100). In *Civilization and Its Discontents*, Freud (1930, p. 102) described vengeful aggression as "an innate, independent, instinctual disposition in man." Yet these perspectives overlook the tremendous variability of human behavior across contexts and the fact that revenge—just like any other social behavior—is sensitive to contextual influence.

Contextual influences on revenge can be as simple as a person's bodily state. Classic studies found that inducing physiological arousal through loud noises (Konečni 1974) and exercise (Zillmann et al. 1972) led people to shock a transgressor with more voltage following a perceived harm. Large daily diary studies also suggest that physiological exhaustion increases the probability of revenge by depleting self-control resources (Meier & Gross 2015), which makes revenge in organizations most common when employees are given heavy workloads (Francis et al. 2015). More recently, MacCormack & Lindquist (2018) found that hungry people were more likely than satiated people to retaliate against a rude experimenter using negative evaluation and gossip. MacCormack & Lindquist (2017) explained these findings using a classic affect misattribution perspective, in which physiological sensations can be misattributed as emotional states and channeled toward guiding behaviors.

Social–contextual pressures on revenge start at the level of the dyad. Victims of a transgression who share a committed relationship with the harm-doers are the most likely to forgive and the least likely to take revenge (Boon & Yoshimura 2016, Exline et al. 2004, Finkel et al. 2002, McCullough et al. 1998). For example, Finkel and colleagues (2002) found that, over a 2-week period, a higher level of relationship commitment predicted less negative affect and more forgiveness in response to a partner's betrayals. Revenge is also less likely when victims and perpetrators are dependent on one another, such as in close friendships (Hruschka & Henrich 2006), rather than in pairs of strangers. In this vein, some models propose that friendships may have evolved as a mechanism for mitigating harmful revenge following minor conflicts (DeScioli & Kurzban 2009).

Nonetheless, revenge still happens in close relationships. People in relationships are most likely to take revenge when they feel that they have been treated unfairly, especially when they feel unfairly rejected or excluded within a relationship (Chester & DeWall 2017, Thau et al. 2007). In fact, Elshout and colleagues (2017b) found that social exclusion was the best predictor of when motivation to take revenge in a relationship escalated to actual vengeful behavior. When revenge does happen in close relationships, it often involves gossip, withdrawing resources, imposing silence, and even infidelity (see Yoshimura & Boon 2014).

One common feature of interpersonal relationships or networks of interdependent individuals (like organizations) is that single transgressions do not go unpunished, yet repeated hostility escalates over time and breeds distrust, eventually culminating in more serious forms of vengeance (for a review, see Kim & Smith 1993). Andersson & Pearson (1999) termed this dynamic the incivility spiral in an attempt to understand the escalation of lower-level offenses in the workplace, and

similar spiraling models have been proposed for revenge in romantic relationships (Boon et al. 2009). Others have argued that leaders and features of the organizational context—such as bureaucracy and formalization—can drive destructive conflict behaviors and revenge in organizations (Gelfand et al. 2008, 2012b).

Honor culture: cultures in which public reputation is highly valuable to the extent that revenge can be condoned as a means of preserving reputation

Society-level factors are also important predictors of revenge. In his *Nicomachean Ethics*, Aristotle (2012, p. 1126b) wrote that virtuous anger must be "in accord with which we are angry, with whom we ought to be, at the things we ought, in the way we ought," alluding to how the judgment of aggression critically depends on the views of how people ought to behave in a society. Fiske & Rai (2014) echoed this sentiment in *Virtuous Violence*, which describes how, in many cases, people not only see vengeance as justifiable, but also see it as a social and moral obligation. This dynamic is also borne out in experimental data. For example, in one study, people responded more aggressively following provocation when they believed that an audience supported aggressive behaviors (Richardson et al. 1979).

Regions with cultures of honor, such as the American South and the Middle East, tend to feature this kind of virtuous violence more than do other regions of the world. In these areas, there is less stigma around retaliatory aggression, and certain forms of revenge are actually normatively encouraged. American Southern men can be the subject of disapproval and defamation if they do not defend their honor (Cohen et al. 1996), while both men and women in the Middle East can easily lose their honor after they are publicly insulted or shamed (Cross et al. 2014, Uskul et al. 2010). These different social norms explain many cross-cultural differences in revenge. For instance, accusations of dishonesty elicit stronger retaliatory responses in Turkey than they do in the United States (Uskul et al. 2015), and cross-cultural surveys show that verbal insults (Harinck et al. 2013, van Osch et al. 2013) and threats (Brown 2016) are more likely to instigate vengeance in honor cultures than in non-honor cultures.

Cultures of honor tend to have histories of weak law enforcement (Grosjean 2014)—the reason that cultural evolutionists argue for revenge's function as a means of social control in the absence of strong policing (e.g., Nowak et al. 2016). This role of institutional control can even predict organizations' rates of revenge. Employees are especially likely to take revenge in the workplace when they believe that their organizational climate has low procedural justice (Aquino et al. 2006, Dietz et al. 2003), as mediated by employees' perceptions of organizational support (El Akremi et al. 2010). This effect is strongest among low-status employees who do not feel supported by official channels (Aquino et al. 2001, 2006; Bordia et al. 2014). Perceptions of low procedural justice are most likely to result in revenge when employees believe that their workplace and supervisors are unsupportive (Liu et al. 2010) or when descriptive norms actually encourage aggression (Glomb & Liao 2003, Restubog et al. 2015). Many of these qualities mirror the historical ecologies of honor cultures, suggesting that low institutional control drives aggression in both large-scale societal systems and smaller-scale organizational systems.

It is important to recognize these contextual precursors to revenge, but it is equally important to understand that many contextual predictors lead to certain forms of revenge but not others. Indeed, examining the antecedents of revenge writ large ignores the fact that revenge is a complex phenomenon that can manifest in many different ways. To examine these different forms of revenge is to examine how people take revenge depending on their role, situation, and culture. We turn to these questions in the next section.

HOW (DO PEOPLE TAKE REVENGE)?

There is no single way of taking revenge. Revenge can be physical or verbal, public or secretive, direct or displaced. Although these forms all constitute revenge, their contexts, manifestations, and

consequences vary substantially. This section reviews the various types of vengeance, organized by the diversity in people's revenge strategies (how they chose to take revenge and what they seek to harm), the diversity in revenge's time course (single acts versus prolonged feuds), and group differences in how revenge is enacted.

Covert revenge: secretive or indirect revenge

Overt revenge: public or direct revenge

Displaced revenge: revenge that targets a party not directly involved in the original transgression

Vicarious revenge: revenge involving two parties that were not involved in the original transgression

Different Revenge Strategies Across Individuals

The ways in which people choose to avenge can vary. One commonly studied distinction is between covert revenge and overt revenge (McIlduff & Coghlan 2000)—sometimes termed direct versus indirect revenge (Grégoire et al. 2010). This distinction loosely corresponds to whether revenge is expressed publicly or secretly. Examples of covert revenge include gossiping about an offender (Bordia et al. 2014), giving negative evaluations (Grégoire et al. 2010, Siegel Christian et al. 2012), hiding knowledge (Zhao et al. 2016), and ignoring an offender (Wang et al. 2018). These strategies are bound by a common desire to privately attack someone's reputation after a perceived slight and, in particular, to undermine that person's authority.

Covert revenge is most common among lower-status individuals who cannot afford to take overt revenge due to the risk of counter-retaliation (Sell et al. 2009). Unsurprisingly, then, much of the evidence for covert revenge has come from contexts where work teams have asymmetric power, such as between managers and employers (Siegel Christian et al. 2012; see also Grégoire et al. 2010). People with low status may also pursue displaced revenge, in which they retaliate against someone by harming a third party or a broader entity. One clear example of displaced revenge is organizational sabotage, in which employees take revenge against colleagues or employers by harming the company in general (Ambrose et al. 2002, Harris & Ogbonna 2006). These sabotage behaviors range from minor violations such as working sluggishly, taking breaks without permission, and wasting company resources to more severe acts like theft, damaging equipment, and accepting bribes (Harris & Ogbonna 2006, Robinson & Bennett 1995). In some cases, employees will even attack their coworkers as displaced retaliation against an abusive supervisor (Dollard et al. 1939, Mitchell & Ambrose 2007).

Closely related to displaced revenge is vicarious revenge, in which an original transgression involves neither the avenger nor the avenged (Lickel et al. 2006). For example, domestic terrorists in the United States often cite the crimes of US soldiers in the Middle East when carrying out their attacks, even though neither they nor their victims were directly involved in these crimes. After the 1999 Columbine High School shooting, many people blamed the shooters' families and friends, who were uninvolved in the actual crime (Lickel et al. 2003).

To an outsider, these cases of vicarious revenge can sound deplorable and inexcusable. Yet the people involved often see their actions as morally justified and sometimes even necessary. This discrepancy might be partly due to avengers' perceptions of entitativity—the tendency to see all people in a group as part of the same unit (Campbell 1958, Gelfand et al. 2012a, Lickel et al. 2000). For example, when someone from a gang commits a crime, people will commonly attribute blame to the entire gang, since it is perceived as a single entity (Denson et al. 2006). In turn, when people see an entire social group as blameworthy, they show less remorse when retaliating against someone from that group who was not involved in the original offense (Hugh-Jones & Leroch 2017, Stenstrom et al. 2008, Zourrig et al. 2015). An insightful study by Sjöström & Gollwitzer (2015) showed this by randomly assigning groups to either wear the same (high entitativity) or different (low entitativity) clothing. They found that people reported more enjoyment while vicariously avenging when their target and the original offender were wearing the same clothing than when they were wearing different clothing. These findings also suggest that organizational

forms of displaced revenge may be most common when employees view their supervisors and organizations as a single entity.

Perceptions of entitativity may also help explain the conditions under which individuals may seek revenge on behalf of people within their social groups (Choi et al. 2018). For example, people's self-reported identity fusion—the overlap that people perceive between their personal identity and their group's identity (Swann et al. 2012; see also Kahn et al. 2017)—has recently been linked to greater willingness to attack an out-group on behalf of one's in-group. For example, people are most committed to fighting for their country when they see their identity as fused with their country's identity (Whitehouse et al. 2014, 2017). Similarly, people with higher in-group salience are more likely to take vicarious revenge (Fischer et al. 2010). Identity fusion explains why vicarious revenge still meets our definition of revenge, which we characterize as a response to threats on personal well-being. To people who are fused, a threat to in-group members feels personal (Swann et al. 2012). This is likely why so many cases of vicarious revenge involve family members (Daly & Wilson 1988).

Temporal Differences in Revenge

People vary in not only how they take revenge, but also for how long they take revenge. Revenge is sometimes a single event but can also stretch on into protracted feuds, sometimes spanning multiple generations (Lee et al. 2014). In one case, a feud between neighbors in a small Chinese village started because trash had spilled over property lines and continually escalated until one of the parties was shot by his rival's son (Feuer & Singer 2017). The shooting happened 20 years after the original argument and long after both families had moved to the United States and started new lives. Another famous case of protracted revenge involved the Graham and Tewksbury families in Pleasant Valley, Arizona. The feud, which started with a dispute over stolen cattle, lasted over 50 years and became a major reason why legislators refused to grant Arizona statehood until 1912. The families' constant gun battles and murders convinced lawmakers that the area was not ready to be settled.

Why do some cases of revenge result in these protracted feuds while others do not? Stillwell et al. (2008) suggest that a driving factor of feuds could be equity restoration, such that revenge is intended to restore equity in light of unfair treatment (see Carlsmith et al. 2002). In this framework, feuds happen when vengeful acts are perceived as excessive by the person receiving them, which perpetuates a perceived imbalance of equity that fuels further revenge. In support of this idea, Stillwell and colleagues (2008) found that perpetrators of vengeful acts tended to think that their behavior was fair and just, whereas victims were more likely than perpetrators to describe the retaliation as excessive given the original slight. More recently, Elshout et al. (2017a) supported this finding by showing that uninvolved third-party raters would evaluate vengeful acts as less severe than would the victims of revenge.

Protracted revenge could also be driven by transmission biases within cultures and social networks (Gelfand et al. 2012a,b). In particular, people appear biased toward transmitting negative over positive social information (see Baumeister et al. 2001), as well as in-group-favorable information over in-group-unfavorable information (see Kappes & Crockett 2016). Together, these biases encourage a biased transmission of events that minimizes the in-group's blameworthiness and exaggerates harm against the in-group. Lee et al. (2014) showed this tendency in a Bartlett paradigm, wherein participants transmitted the events of an interpersonal conflict one at a time, as in a game of telephone. They found that people exaggerated the conflict over time and magnified the blame of out-group parties. Conflicts that were originally described as minor and with shared blame gradually became described as extreme and with blame solely residing with out-group members.

Group Differences in Revenge

Blood revenge: culturally condoned acts or cycles of revenge based on the notion that acts of violence necessitate violence in return

While most research on revenge continues to be conducted in Western industrialized cultures, cross-cultural fieldwork shows important differences in how vengeance manifests around the world. For example, cultures of blood revenge show much more tolerant norms toward revenge than do Western cultures (Boehm 1984). Blood revenge has been extensively documented among the !Kung Bushmen in Southern Africa, the Netsilik Eskimo of modern-day Canada (Lee 1979, Rasmussen 1931), and even contemporary Chechens in Russia (Souleimanov & Aliyev 2015). Key characteristics of blood revenge include its collaborative nature and its common prescription by local legislative bodies.

One notable example of collective blood revenge comes from the Yanomamo indigenous people of southern Venezuela and northern Brazil, wherein the majority of adult men have committed at least one act of lethal vengeance; men who have done so are known as unokai (Chagnon 2012). In fact, ethnographic research has not only documented the prevalence of unokai among the Yanomamo, it has also shown that unokai men are approximately twice as likely to reproduce as non-unokai (Macfarlan et al. 2014). Furthermore, when unokai men take revenge together (counokai), they become more likely to later merge family lines, exchange resources, and reside in the same village, suggesting that revenge serves an organizational function in Yanomamo society. This research is not without controversy—and it remains contentious exactly how prevalent or adaptive unokai is among the Yanomamo people (see Ferguson 2001). Yet the unokai traditions demonstrate that, across cultures, cultural norms have great potential to shape how people view revenge and the role that revenge plays in society.

Many culturally sanctioned forms of revenge persevere today in the form of honor killings, wherein killing a relative—especially a girl or woman—restores honor to a family following a perceived slight, often premarital or extramarital sex (even in cases of rape) (Sev'er & Yurdakul 2001). Norms that support honor killings are deeply engrained across modern-day Jordan, Turkey, Egypt, Tunisia, Libya, and Kuwait, where murdering a female family member because of perceived dishonorable sexual behavior results in less jail time than other forms of murder and sometimes goes entirely unpunished (Odeh 2010).

Another example of cultural differences in revenge involves supernatural outsourcing of vengeance. Witchcraft is one common example of this outsourcing: In northern Tanzania, the Meru people's belief in the occult inspires their cursing practice, the kupasua chungu, which unleashes mythical forces to attack wrongdoers (Kelsall 2003). In rural Ecuador, the Waorani people will practice revenge through the use of a shaman (Beckerman & Valentine 2008). Abrahamic believers also show supernatural outsourcing of revenge. Laurin and colleagues (2012) showed that salient beliefs about a powerful intervening God decreased people's tendency to punish defectors in an economic game, perhaps because believers assumed that God would punish the defector on their behalf.

These specific cases of differences in revenge are complemented by broader cross-cultural psychology literature that analyzes how dimensions of cultural variance relate to revenge's prevalence. In particular, Gelfand and colleagues (2012a,b) have argued that perceived in-group, out-group, and transgenerational entitativity may be more common in collectivistic cultures. This research suggests that cycles of revenge are more likely to follow isolated incidents of aggression, since harm done to a group member in these cultures is more likely to be felt personally, prompting revenge. However, more cross-cultural research is needed to test how other dimensions, such as tightness–looseness (Gelfand et al. 2011, 2017) and power distance (Hofstede 2003; see Zagenczyk et al. 2015), relate to expressions of revenge. For example, research reviewed above (e.g., Sell et al. 2009) suggests that there might be more covert revenge in high-power-distance cultures, where there are stark asymmetries in power.

WHERE (SHOULD THE STUDY OF REVENGE GO NEXT)?

This review began with a puzzle: Why would anyone take revenge? At first glance, revenge seems counterproductive for individuals and destructive for society at large. However, closer inspection reveals that there is logic to the evolution of revenge. Evidence suggests that retaliatory aggression can serve an important deterrence function for animals in general, while maintaining stability within human groups by ensuring that people do not repeatedly violate norms. There is logic to why individuals take revenge. To the avenger, revenge can restore a sense of justice, boost reputation, and provide momentary positive affect after being slighted. There is even logic to revenge's different manifestations: The way in which people avenge draws largely from their sense of status, equity, and surrounding cultural norms.

To visually organize these insights, we present a revenge theory map (see **Supplemental Figure 1**), a visual summary of past research (see also Gray 2017). Our theory map combines this research into a model divided by specific research questions—concerning function (why), instigation (when), and expression (how). It is labeled by levels of analysis—individual-level variables in blue and group-level variables in red. This approach integrates disparate strands of research—including but not limited to comparative research from anthropologists, large epidemiological studies from sociologists, industrial surveys from organizational behavior scholars, and experiments by psychologists—into a comprehensive framework for integrating extant research on revenge.

Supplemental Material >

Toward a Multilevel Framework for the Study of Revenge

Our review illustrates that, despite the wealth of research on revenge, many scientific findings remain isolated and fragmented. To synthesize these findings, we encourage a multilevel view of revenge as a guiding framework for future researchers. A multilevel framework encourages research that explicitly considers the interaction among group-level structures and individual-level behaviors (Kozlowski & Klein 2000). With respect to revenge, this means understanding how higher-order factors such as culture or ecology influence the way in which people encode, appraise, and respond to transgressions (see Mesquita & Frijda 1992), as well as how individuals' vengefulness can propel cycles of revenge. A good example of top-down cultural diffusion is provided by Shteynberg and colleagues (2009), who found that Koreans appraised duty violations as more deserving of revenge than rights violations due to their collectivistic values, whereas Americans appraised rights violations as more deserving of revenge than duty violations. A good example of bottom-up influences is provided by Lee and colleagues (2014), who found that individuals' transmission biases predicted emergent feuds over time, with implications for the contagion of conflict in larger groups. A multilevel framework integrates both of these directions of causality into unified dynamical models.

Our theory map illustrates other ways in which top-down and bottom-up processes can affect the dynamics of revenge. For example, individual acts of covert revenge within organizations (e.g., sabotage, deviance) are most common when people feel unsupported by the justice systems within these organizations (Aquino et al. 2006), but these acts also combine to erode procedural justice over time, which may in turn facilitate a downward spiral of unethical climate and unethical behavior within organizational systems (see Griep & Vantilborgh 2018). Honor-based revenge represents another example of this potential spiral dynamic: People commit honor-based vengeance because of intense cultural norms in honor cultures around maintaining one's reputation after being slighted (Cross et al. 2014). Yet taking revenge signals support for these cultural norms (Henrich et al. 2006) while also undermining faith in criminal justice systems that alleviate the need for revenge (Sev'er & Yurdakul 2001). In both of these examples, existing research

predicts a process of mutual enforcement, such that individual-level and group-level processes reinforce one another over time.

Below, we offer three further recommendations for future research that seek to make the study of revenge more interdisciplinary, innovative, and integrative. These recommendations pertain to our choices of methodologies, samples, and theoretical motivations. Each is discussed in turn.

Growing Our Methodological Toolbox

Surveys and laboratory experiments can be insightful when studying psychological processes within a specific time and place, but they lack the power to analyze society-wide trends or dynamical systems. A multilevel framework for studying revenge would particularly benefit from dynamical systems methods, which have the power to shed light on linear and nonlinear revenge processes over time, including the means by which individual acts of vengeance might catalyze large-scale cultural change. Computational simulations offer one avenue for studying the dynamics of revenge (Jackson et al. 2017, Nowak et al. 2016). Time-series analysis has recently emerged as another promising technique for testing these dynamics among human subjects over time. Time-series modeling has been applied to the study of large-scale cultural changes in collectivism (Varnum & Grossmann 2017) and tightness (Jackson et al. 2016). However, it has not yet been applied to understanding fluctuations in revenge and its antecedents and consequences.

Scholars of revenge could benefit from many other established methods that remain underused in psychology. For example, network analysis could shed light on the contagion of revenge within social systems, and quantitative analysis of the ethnographic record could improve our understanding of emic forms of revenge. Moreover, new advances in phylogenetic mapping allow researchers to create family trees of cultural heritage, testing whether events occurring earlier in a family tree have a cascading effect on later-emerging cultures (Gray & Watts 2017). An application of phylogenetic analysis to revenge could allow for a strong test of the cultural evolutionary assumption that revenge coevolved with moral norms within a society.

Broadening Our Samples

In addition to using new methods, researchers studying revenge must sample from a broader pool of participants. Due to long-held but empirically unsupported assumptions that revenge processes are universal, past research has relied heavily on studies within Western nations and industrialized non-Western samples. Currently, historical and anthropological databases offer an easy and virtually cost-free way for researchers to access data on cultures around the world. Researchers need only compile previously coded data from international databases such as D-PLACE (Kirby et al. 2016) or Pulotu (Watts et al. 2015) or develop their own quantitative codes using resources such as HRAF (Ember 1997), in which a vast store of ethnographies are organized by topic and culture. Sampling from different cultures presents the chance to test universal theories of revenge's antecedents and consequences and also offers us a better grasp of how revenge has changed in its nature throughout human history. Finally, cross-cultural research could serve as the basis for culture-specific interventions in nations like Brazil, where revenge contributes to high crime rates.

Bridging Disciplines

Many of the recommendations summarized above speak to a broader need for greater synthesis between different fields of research. Interdisciplinary research not only contributes to the cross-fertilization of methods and sampling techniques, but also encourages common theoretical

perspectives across scholars who study the same problem. For example, sociological and anthropological perspectives spoke of revenge as an evolved mechanism for cultural homeostasis long before psychologists recognized this functionality. Interdisciplinary studies can also bridge common terminology problems within the study of revenge, which is sometimes labeled as negative reciprocity among economists and evolutionists (Fehr et al. 2002). Perhaps most importantly, bridging disciplines can help us determine revenge's ultimate function, both as a biological property and as a cultural tool.

Another benefit of an interdisciplinary approach to the study of revenge is the advancement of basic research with applied implications. For example, Lickel and colleagues (2006) have applied theories of vicarious revenge to explain aggression after mass shootings and racial violence in the American South (see also Lickel et al. 2003). Lyons-Padilla and colleagues (2015) have applied cross-cultural psychology theories and theories of aggression to identify who might be at high risk for domestic radicalization. These projects not only yield insights into revenge using unique samples and ecologically valid findings, but also communicate psychological findings to scholars studying terrorism and radicalization processes. More research is needed to connect basic research on revenge to applied literatures within criminal justice research, political science, and clinical psychology (see Grobbink et al. 2015).

CONCLUSION

The scientific study of revenge has a long past but a short history. Despite its frequent use in mythology and storytelling, revenge was seldom mentioned in scholarly literature until well into the twentieth century. Nevertheless, revenge now represents a fast-growing domain of social scientific research, spanning multiple disciplines and featuring a broad set of theories. We review and integrate bodies of research from psychology, sociology, anthropology, organizational behavior, and other disciplines to provide an understanding of the why, when, and how of revenge. Collectively, these literatures illuminate the evolutionary origins of revenge, the proximal predictors of vengeance, and the varieties of revenge across people and cultures. With a multilevel framework, we can integrate these literatures to better understand revenge's role in human life.

SUMMARY POINTS

1. Revenge is a multilevel process rooted in both psychological and cultural elements.
2. Some aspects of revenge appear to have evolved genetically, whereas other aspects have evolved culturally.
3. Revenge appears most likely to culturally evolve in environments with low institutional control (e.g., weak police forces).
4. People take revenge for several reasons, including (*a*) because they feel angry over a perceived norm violation, (*b*) because they see revenge as a means of restoring reputation, (*c*) because they believe revenge will make them feel better, and (*d*) because cultural norms license vengeance.
5. Revenge can manifest in many different ways, and there are distinctions between (*a*) covert and overt revenge and (*b*) vicarious and displaced revenge.
6. There are many forms of culturally emic revenge, such as blood revenge or supernatural outsourcing of revenge.

FUTURE ISSUES

1. Past research on revenge is in need of integration. A multilevel framework that considers the interaction of group-level structures with individual-level behavior may be an effective way of synthesizing past findings.
2. With a multilevel framework, future research should investigate the possibility of cross-level causality. Can group-level structures change how people encode and respond to transgressions? Can individual acts of revenge lead to emergent cultural changes?
3. Future research on revenge should also adopt more advanced methodologies. This includes new sampling practices aimed at cross-cultural generality, new analytic techniques aimed at dynamical modeling, and more multimethod papers that bridge disciplinary divides.
4. Research on revenge also needs to heed implications for applied work. Research on revenge can connect to terrorism literature, clinical psychology literature, and criminal justice literature, among others.

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