

Personality Correlates of Revenge-Seeking: Multidimensional Links to Physical Aggression, Impulsivity, and Aggressive Pleasure

David S. Chester^{1*}, C. Nathan DeWall²

¹Department of Psychology, Virginia Commonwealth University, USA

²Department of Psychology, University of Kentucky, USA

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*Correspondence should be addressed to:

David S. Chester

302 Thurston House

Virginia Commonwealth University

Richmond, VA, 23284, USA

dschester@vcu.edu

Abstract

People differ in how much they seek retribution for interpersonal insults, slights, rejections, and other antagonistic actions. Identifying individuals who are most prone towards such revenge-seeking is a theoretically-informative and potentially violence-reducing endeavor. However, we have yet to understand the extent to which revenge-seeking individuals exhibit specific features of aggressiveness, impulsivity, and what motivates their hunt for retribution. Toward this end, we conducted three studies (total $N = 673$), in which revenge-seeking was measured alongside these other constructs. Analyses repeatedly demonstrated that revenge-seeking was associated with greater physical (but not verbal) aggressiveness, anger, and hostility. Revenge-seeking's link to physical aggression was partially accounted for by sadistic impulses toward enjoying aggression and the tendency to use aggression to improve mood. Dominance analyses revealed that such sadistic impulses explained the most variance in revenge-seeking. Revenge-seeking was associated with greater impulsive responses to negative and positive affect, as well as greater premeditation of behavior. These findings paint a picture of revenge-seekers as physically aggressive curators of anger, whose retributive acts are performed with planned malice and motivated by the act's entertaining and therapeutic qualities.

Keywords: revenge-seeking, revenge, personality, aggression, positive affect

Introduction

The desire to seek revenge has an ancient legacy. The Babylonian Code of Hammurabi, instituted in the 18th century B.C.E, made revenge the code of law. Since then, perspectives and practices related to revenge have waxed and waned. To date, scientific understanding of who is most likely to seek revenge remains incomplete. The current investigation seeks to fill this gap in the literature by conducting an in-depth analysis of the constellation of individual differences that correspond to revenge-seeking, and this retributive tendency's underlying motives.

Revenge refers to the attempt to inflict retaliatory harm upon an individual who is perceived to have provoked the revenge-seeking individual (McCullough, Kurzban, & Tabak, 2013). Revenge often takes costly forms, such as aggression (Anderson & Bushman, 2002), criminal acts such as arson (Prins, Tennent, & Trick, 1985), workplace theft (Aquino, Tripp, & Bies, 2001), terrorism (Crenshaw, 1981), and many more, including a new genre entitled “revenge porn” (Stroud, 2014). The widespread suffering induced by revenge-seeking behaviors necessitates research into who is most likely to carry out such acts. Like many human behavioral tendencies, the tendency to seek revenge exhibits considerable variability between individuals. Attempts to capture and quantify these differences have led to a host of revenge-related measures that have greatly improved our understanding of this construct.

Revenge-Related Constructs and their Personality Correlates

Vengefulness is the dispositional tendency to have positive attitudes towards revenge and to seek it in response to provocations (Stuckless & Goranson, 1992). Vengefulness exhibits substantial reliability over time and is negatively associated with

altruistic forms of reciprocity (Denson, Pedersen, & Miller, 2006; Stuckless & Goranson, 1992). suggesting that revenge-seekers do not simply reciprocate all treatment, but return harm with harm. Vengeful traits are positively associated with two large domains of personality traits: affective and social (for a review see Mullet, Neto, & Rivière, 2005).

Correlations with affective traits. At the core of vengefulness is the experience of negative affect, (Aquino, Tripp, & Bies, 2006; Bradfield & Aquino, 1999; McCullough, Garth, Kilpatrick, & Johnson, 2001; McCullough et al., 1998), specifically anger (Hepworth & Towler, 2004; Seybold, Hill, Neumann, & Chi, 2001; Stuckless & Goranson, 1992). Rumination over such anger experiences is also a central feature of this construct to the point that the widely-used Anger Rumination Scale has a 'Thoughts of Revenge' subscale (Sukhodolsky, Golub, & Cromwell, 2001). Indeed, vengeance requires vengeful rumination and unsuccessful suppression of the memory of the provoking incident (McCullough et al., 2001).

Correlations with social traits. Vengefulness is an antisocial disposition. As evidence, vengefulness corresponds to greater "Dark Triad" traits such as narcissism and psychopathy (Book & Quinsey, 2004) and interpersonal hostility (i.e., the tendency to perceive others as threatening; Seybold et al., 2001). Suggesting that vengefulness is not simply the presence of antisocial tendencies, but also the absence of prosocial tendencies, vengefulness is negatively associated with agreeableness (McCullough et al., 2001), altruism (Ashton, Paunonen, Helmes, & Jackson, 1998), empathy (Stuckless & Goranson, 1992), and extraversion (McCullough et al., 2001). Vengefulness is also negatively associated with the tendency to forgive transgressors (Barber, Maltby, & Macaskill, 2005; Brown, 2003, 2004; McCullough et al., 1998; Thompson et al., 2005).

In addition, vengeful individuals were less likely to feel close to the individual who provoked them and report greater avoidance of and rumination about this individual (McCullough et al., 1998).

Summary. Dispositional vengefulness is a constellation of high levels of angry affect, perseverative thinking, antisocial tendencies, and a dearth of prosocial tendencies. These predispositions make vengeful people seem highly likely to possess aggressive personalities, yet evidence for the vengeful-aggression link remains incomplete.

Revenge's Link with Aggressive Traits

Aggression is the physical or verbal attempt to harm someone who does not wish to be harmed (Anderson & Bushman, 2002). Most instances of aggressive behavior are in retaliation for some perceived slight (Anderson & Bushman, 2002), which would suggest that dispositional revenge-seekers would be more aggressive. Indeed, one of most effective and frequently-used ways to evoke aggressive behavior from research participants is to provoke them in some way (e.g., Chester & DeWall, 2017). However, the link between *dispositional* vengefulness and aggression remains unclear, as does its link to aggressive traits, as opposed to behavior.

Establishing whether revenge-seeking individuals tend to be generally aggressive or have specific patterns of aggression is an important step in preventing such violence. Trait vengeance is positively associated with both physical and verbal aggressiveness, as well as general aggression directed towards innocent individuals (i.e., displaced aggression) and romantic partners (Denson et al., 2006). However, these zero-order correlations do not accurately partial the variance of trait

aggressiveness, which can be decomposed into trait anger, hostility, physical aggressiveness, and verbal aggressiveness (Buss & Perry, 1992; Webster et al., 2013). As such, it remains unclear how revenge-seeking maps onto these inter-related facets of aggressiveness. Further, it is uncertain what potential psychological mechanisms link vengeance-seeking to aggressiveness.

Potential Mechanisms: Positive Affect and Emotion-Regulation

Several factors may help explain why vengeful people act aggressively. Instead of being due to purely “cold”, calculating, and cognitive processes, *affective* processes are one of the most likely proximal mechanisms that translates vengeance motivations to actual vengeance (Aureli & Schaffner, 2013; Leiser & Joskowicz-Jablonek, 2013). While anger and other negative emotions play a central role in vengefulness, positive emotions also play a meaningful role in motivating retaliatory aggression (Bushman, Baumeister, & Phillips, 2001; Chester & DeWall, 2016; Chester et al., 2016). Indeed, provoked and slighted individuals tend to use the pleasure that is associated with revengeful acts to regulate their emotions (Bushman et al., 2001; Chester & DeWall, 2017). As such, dispositional revenge-seekers might engage in such chronic retaliatory behavior because it is pleasantly reinforcing and helps to alleviate the anger and negative affect that arises from provocations.

Sadism is the tendency to experience pleasure in response to others' suffering and its dispositional form exists along a substantial continuum in the general populace (Buckels, Jones, & Paulhus, 2013). Whereas sadistic tendencies have been previously linked to aggressive acts (Buckels et al., 2013; Chester & DeWall, 2017), their link with revenge-seeking remains unknown. Based on these previous findings, we predicted that

both mood improvement motives and sadistic tendencies would mediate the link between revenge-seeking and actual aggressive behavior. However, it remains unknown how other forms of impulsivity might explain vengeance-seeking.

Associations with Impulsive Traits

Revenge-seeking is positively correlated with impulsivity writ large (Denson et al., 2006). However, impulsivity is not monolithic and instead is comprised of multiple, orthogonal facets (Whiteside & Lynam, 2001). These facets include negative and positive urgency, the tendency to act rashly while experiencing negative and positive affect, respectively. Sensation-seeking, a lack of perseverance on difficult tasks, and a lack of premeditation of behavior are additional facets. This multidimensional structure of impulsivity allows for the test of several key predictions about revenge-seeking.

First, it remains unclear whether revenge-seeking is purely driven by negatively-valenced affect or if positive affect also plays a motivational role. Testing associations with negative and positive urgency will allow us to tease these valence dimensions apart and test their relative contributions. Second, a critical area of theoretical ambiguity around vengeful acts is the extent to which they are instrumental and pre-meditated or performed without forethought and planning (Bushman & Anderson, 2001). The lack of premeditation dimension of impulsivity would support an empirical test of whether revenge-seekers tend to plot their retribution in advance of exacting it. Further, lack of premeditation may *interact* with negative and positive urgency, to moderate the effect of these impulsivity facets on vengeance-seeking tendencies.

Overview

Across three studies, we sought to better explicate the nomological network around dispositional revenge-seeking tendencies. Specifically, we tested the association between individuals' revenge-seeking traits and different facets of aggressiveness and impulsivity. Building upon these correlation patterns, we also measured two constructs that we predicted would underlie revenge-seeking individuals' motivation to inflict retributive harm on others: sadism and the tendency to use aggression to improve mood.

Study 1

Study 1 tested several hypotheses central to the aims of this larger project to further our understanding of the personality correlates and motivational underpinnings of revenge-seeking. We predicted that revenge-seeking would be positively associated with all four facets of trait aggression (anger, hostility, physical aggressiveness, and verbal aggressiveness), and that revenge-seeking's link to aggressiveness would be partially accounted for by tendencies to enjoy aggression (i.e., sadism) and to use aggression to improve mood. To test these predictions, participants in Study 1 completed measure of dispositional revenge-seeking tendencies alongside a measure of trait aggression's four facets, trait sadism, and the tendency to aggress to improve mood.

Materials and Methods

Participants

Participants were 167 undergraduates (118 females, $M = 19.04$, $SD = 1.72$) who were compensated with course credit for their participation. Sample size was

determined by the number of participants that could be recruited within the study's single-semester timeframe.

Measures

Angry Mood Improvement Inventory. The Angry Mood Improvement Inventory (AMII) was developed by Bushman and colleagues (2001) to assess the degree to which individuals tend to control and express anger behaviorally *as motivated by a desire to improve mood*. The AMII contains an eight-item subscale of particular relevance to our emotion-regulation hypothesis, the Anger Expression – Out subscale. This subscale assesses the tendency to express angry mood outwardly as aggressive behavior in the attempt to improve mood. Each item refers to behaviors (e.g., “express my anger”; “strike out at whatever angers me”) that participants rate along a five-point scale, which indicates the degree to which they would like to perform the given behavior *to try and feel better* when they are angry or furious. The AMII possesses excellent levels of both internal reliability within each subscale and test-retest reliability (Bushman et al., 2001; Bushman & Whitaker, 2010; Chester & DeWall, 2016, 2017).

Anger Rumination Scale. The 19-item ARS is a well-validated and reliable measure of the tendency to cognitively perseverate on experiences that anger individuals (Sukhodolsky et al., 2001). The ARS contains a 4-factor structure that includes ruminative thoughts after provocation, memories of provocation, and recurring thoughts about the causes and consequences of provocation incidents. Of particular relevance to this project, the final, 4-item subscale of the ARS measures thoughts of revenge on the provocateur (sample item: “when someone makes me angry I can't stop thinking about how to get back at this person”). Participants rate the extent to which

each statement is typically true of them, along a 1 (almost never) to 4 (almost always) response scale. This vengeful rumination is the foundation of revenge-seeking tendencies as one must persevere on provocation in order to seek subsequent retribution.

Brief Aggression Questionnaire. The 12-item BAQ is a short-form of the most commonly-used trait aggression measure, the 29-item Buss-Perry (1982) Aggression Questionnaire (Webster et al., 2013). The BAQ possesses the four factor structure of the original questionnaire with a 3-item subscale measuring each construct: anger (sample item: “sometimes I fly off the handle for no good reason”), hostility (sample item: “when people are especially nice, I wonder what they want”), physical aggression (sample item: “given enough provocation, I may hit another person”), and verbal aggression (sample item: “when people annoy me, I may tell them what I think of them”). Participants rate their agreement with each statement along a 1 (strongly disagree) to 7 (strongly agree) response scale. The BAQ also exhibits excellent convergent validity, discriminant validity, internal reliability, and test-retest reliability (Webster et al., 2013).

Displaced Aggression Questionnaire. The 31-item DAQ quantifies the dispositional tendency to displace aggressive thoughts, feelings, and acts from the provocateur onto innocent third parties (Denson et al., 2006). This measure was constructed from other scales, and includes items from the Anger Rumination Scale. Participants rate their agreement with various statements along a 1 (extremely uncharacteristic of me) to 7 (extremely characteristic of me) response scale. These responses form three subscales that assess the tendency to engage in acts of

displaced aggression and to ruminate over angering experiences. The final subscale quantifies the tendency to plan revenge on provocateurs, which contains two of the items from the Anger Rumination Scale's Thoughts of Revenge subscale. This DAQ subscale extends beyond vengeful rumination to include assessment of pro-vengeance attitudes ("if a person hurts you on purpose, you deserve to get whatever revenge you can") and the tendency to actually seek revenge ("when somebody offends me, sooner or later I retaliate"). Together with the full Thoughts of Revenge subscale of the ARS, this subscale is an effective assessment of dispositional revenge-seeking tendencies.

Short Sadistic Impulse Scale. The 10-item SSIS is a brief version of the Sadistic Attitudes and Behaviors Scale that exhibits test-retest and internal reliability alongside evidence of construct validity (O'Meara et al., 2011). This single-factor scale measures the dispositional sadism and contains items such as "I enjoy seeing people hurt" and "hurting people would be exciting" that participants respond to along a 1 (disagree) to 7 (agree) response scale.

Procedure

Participants arrived at our laboratory to complete a study that was ostensibly about their mental visualization abilities and behavior. In this study, participants provided informed consent and then completed a computerized battery of personality questionnaires, which included the Anger Rumination Scale, the Angry Mood Improvement Inventory, the Brief Aggression Questionnaire, the Displaced Aggression Questionnaire, and the Short Sadistic Impulse Scale. After completing these measures, participants were debriefed and escorted from the laboratory. All research procedures

received prior approval by the appropriate institutional review board and informed consent was obtained from every participant.

Results & Discussion

Construction of a Revenge-Seeking Index

To construct a more reliable index of revenge-seeking, we first standardized and then averaged across responses to the 4-item Thoughts of Revenge subscale of the Anger Rumination Scale and the 11-item Revenge Planning subscale of the Displaced Aggression Questionnaire. These two measures share two questions (as the DAQ borrowed two items from the already existing ARS), so the redundant responses from the DAQ were removed as they were administered after the Anger Rumination Scale, yielding a 13-item revenge-seeking index, $\alpha = .90$ (see Supplemental Table 1 for item text).

Correlations with Other Traits

Descriptive statistics and zero-order correlations for all study questionnaires are presented in Supplemental Table 2. Using bivariate and partial correlation analyses, we tested the association between our revenge-seeking index and other study variables. When a given construct (i.e., measure) had multiple components (i.e., subscales), the results from partial correlation analyses were used as hypothesis tests, as they more accurately partition the variance of multidimensional constructs such as aggression. From these analyses, we observed that revenge-seeking was positively correlated with the tendency to aggress externally and internally as a means of mood improvement, anger, hostility, physical aggression, being male, and sadism (Table 1). Revenge-

seeking was unassociated with age, the tendency to control aggression to improve mood, and verbal aggression.

Table 1. Correlations between study variables and the revenge-seeking index of Study 1. We obtained partial correlations by controlling for all other subscales from a given measure.

	Zero-Order			Partial		
	<i>r</i>	<i>df</i>	<i>p</i>	<i>r</i>	<i>df</i>	<i>p</i>
Age	-.01	153	.883	---	---	---
AMII - Control In	-.33	155	< .001	-.12	152	.137
AMII - Control Out	-.24	155	.003	-.03	152	.688
AMII - Express In	.38	155	< .001	.32	152	< .001
AMII - Express Out	.38	155	< .001	.22	152	.007
BAQ - Anger	.36	155	< .001	.26	152	.001
BAQ - Hostility	.37	155	< .001	.27	152	.001
BAQ - Physical	.47	155	< .001	.36	152	< .001
BAQ - Verbal	.26	155	.001	-.02	152	.840
Male	.34	154	< .001	---	---	---
SSIS (Sadism)	.41	141	< .001	---	---	---

Based on our finding that revenge-seeking was higher among males and the well-established fact that males use physical more than verbal aggression, the lack of an association between revenge-seeking and verbal aggression might reflect a confound with gender. However, including gender as a covariate did not fundamentally

alter the association between revenge-seeking and verbal aggression, $r(150) = -.02$, $p = .782$.

The associations between revenge-seeking and tendencies toward sadism and using aggression to improve mood provide preliminary support for our hypothesis that revenge is motivated by positive affect. The fact that revenge-seeking was positively correlated with constructs that have positive affect at their core (e.g., trait sadism) as well as negative (e.g., trait anger), supports the idea that revenge is both bitter and sweet, in that it contains both appetitive and aversive aspects (Eadeh, Peak, & Lambert, 2017). However, it remained unclear which of the multiple variables that were significantly correlated with vengeance-seeking were the most predictive of this retributive disposition.

Dominance Analysis

To investigate which of the variables outlined in Table 1 was the most predictive of revenge-seeking tendencies, we simultaneously entered each of them into a dominance analysis. In this form of analysis, the explained variance in revenge-seeking of each predictor is averaged across all possible combinations of the given predictor with all other predictor variables (Budescu, 1993; Kraha, Turner, Nimon, Zientek, & Henson, 2012). From this series of computations, a variable is deemed dominant when its general dominance weight (*GDW*; i.e., its mean semipartial correlation across all predictor permutations), an index of the variable's aggregated contributions to model R^2 , exceeds that of all other predictors. This analysis was implemented via the *yhat* package (v. 2.0; Nimon, Oswald, & Roberts, 2013) for RStudio statistical software (v. 0.99.903; R Core Team, 2015). This analysis revealed that, of all 11 predictors in

Study 1, the Physical Aggression subscale of the BAQ was most dominant, followed by sadism scores from the SSIS (Supplemental Table 3). Thus, physical forms of aggression and the tendency to find pleasure in them form the core of vengeance-seeking tendencies, at least within the context of Study 1's included variables.

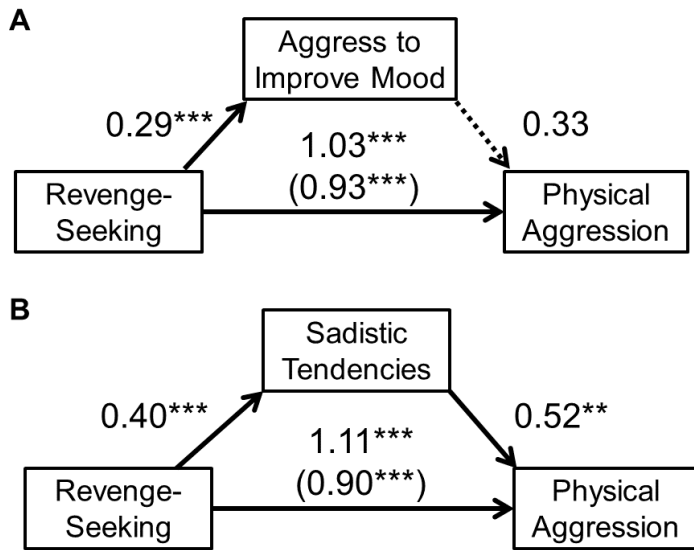
Indirect Effects

Having demonstrated that revenge-seeking was robustly correlated with a tendency to commit acts of physical aggression, we next sought to test whether this relationship was accounted for, in part, by aggression's associated positive affect. To do so, we tested for the presence of indirect effects whereby revenge-seeking correlated with greater physical aggressiveness through greater sadism and through the tendency to use aggression to improve mood.

Mood improvement tendencies. A test of indirect effects (using 5,000 bias-corrected and accelerated bootstrap samples via the PROCESS macro for SPSS, model 4; Hayes, 2012) showed that the direct effect of revenge-seeking on physical aggression scores from the BAQ was not significantly accounted for by Anger Expression – Out scores from the AMII, 95% CI -0.01, 0.25. This overall model explained 21.98% of the variance in physical aggressiveness, $F(1,155) = 23.14, p < .001$ (Figure 1A). Thus, we observed no evidence for the tendency to use aggression to improve mood to help explain the tendency for revenge-seeking individuals to exhibit greater tendencies toward physical aggression.

Figure 1. Indirect effects from Study 1, whereby the effect of revenge-seeking index scores' effects on physical aggressiveness scores from the BAQ are partially accounted for by (A) Anger Expression Out scores of the AMII, or (B)

sadism scores from the SSIS. Values represent unstandardized regression coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$



Sadistic tendencies.

The direct effect of revenge-seeking on physical aggression scores from the BAQ was significantly and partially accounted for by sadism scores from the SSIS, 95% CI 0.06, 0.50. This overall model

explained 25.18% of the variance in physical aggressiveness, $F(1,141) = 29.39, p < .001$ (Figure 1B). This significant indirect effect provided preliminary support for the role of aggression’s associated positive affect to motivate revenge-seekers to physically harm others.

Study 2

Given the preliminary nature of Study 1’s results, we sought to directly replicate them in a larger sample, which is a crucial step to make statistic inferences (Simons, 2014).

Materials and Methods

Participants

Participants were 287 undergraduates (197 females, $M = 18.83, SD = 1.23$) who were compensated with course credit for their participation. Sample size was

determined by the number of participants that could be recruited within the study's two-semester timeframe.

Procedure

Participants arrived at our laboratory to complete a study that was ostensibly about their mental visualization abilities and behavior. In this study, participants provided informed consent and then completed a computerized battery of personality questionnaires, which included the Anger Rumination Scale, Angry Mood Improvement Inventory, Displaced Aggression Questionnaire, Brief Aggression Questionnaire, and Short Sadistic Impulse Scale. After completing these measures, participants were debriefed and escorted from the laboratory. All research procedures received prior approval by the appropriate institutional review board and informed consent was obtained from every participant.

Results & Discussion

Construction of a Revenge-Seeking Index

As in Study 1, we combined standardized responses from the 4-item Thoughts of Revenge subscale of the ARS with the 11-item Revenge Planning subscale of the DAQ (minus the two redundant items). The resulting 13-item revenge-seeking index exhibited excellent internal consistency, $\alpha = .91$.

Correlations with Other Traits

Descriptive statistics and zero-order correlations for all study questionnaires are presented in Supplemental Table 4. As in Study 1, we conducted bivariate and partial correlation analyses to test revenge-seeking tendencies' associations with age, gender, the four facets of trait aggression, the tendency to use aggression to improve mood and

sadism. Where appropriate, partial correlation analyses were used for inferential purposes instead of zero-order correlations.

These analyses directly replicated Study 1's results with positive correlations between vengeance-seeking and the tendency to aggress externally and internally as a means of mood improvement, anger, hostility, physical aggression, being male, and sadism (Table 2).

Table 2. Correlations between study variables and the 13-item revenge-seeking index of Study 2. Partial correlations were obtained by controlling for all other subscales from the given measure.

	Zero-Order			Partial		
	<i>r</i>	<i>df</i>	<i>p</i>	<i>r</i>	<i>df</i>	<i>p</i>
Age	-.16	186	.032	---	---	---
AMII - Control In	-.32	187	< .001	-.16	184	.030
AMII - Control Out	-.15	187	.034	.04	184	.635
AMII - Express In	.29	187	< .001	.20	184	.006
AMII - Express Out	.41	187	< .001	.23	184	.002
BAQ - Anger	.47	187	< .001	.33	184	< .001
BAQ - Hostility	.44	187	< .001	.31	184	< .001
BAQ - Physical	.49	187	< .001	.37	184	< .001
BAQ - Verbal	.32	187	< .001	.05	184	.508
Male	.23	187	.002	---	---	---
SSIS (Sadism)	.59	184	< .001	---	---	---

The direct replication of Study 1 provide greater confidence for our inferences that revenge-seekers tend to (A) engage in physical, but not verbal, forms of aggression, (B) enjoy aggressive behavior, and (C) use it to regulate their emotions.

Dominance Analysis

To investigate which of the variables outlined in Table 2 was the most predictive of revenge-seeking tendencies, we simultaneously entered each of them into a dominance analysis, as detailed in Study 1. This analysis revealed that, of all 11 predictors in Study 2, sadism scores from the SSIS were by far the most dominant (Supplemental Table 5). The next closest variable in dominance was the Physical Aggression subscale of the BAQ. Sadism's dominance weight was not only greatest, but over twice as large as physical aggressiveness, suggesting that sadistic tendencies toward finding aggression pleasant are a core feature of revenge-seeking.

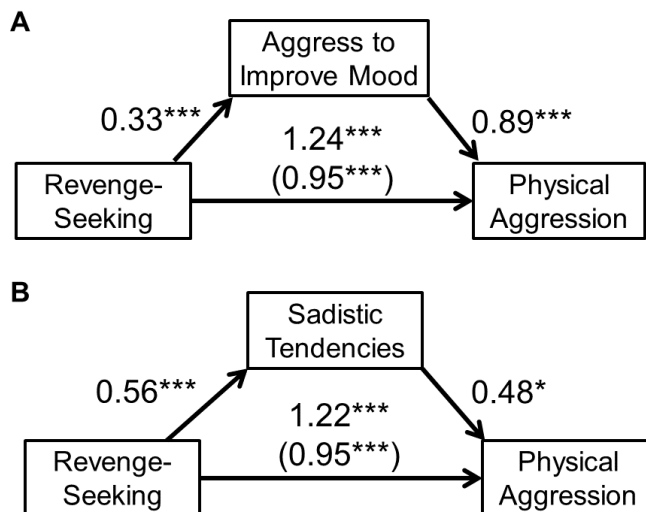
Indirect Effect Analyses

Mood improvement tendencies. The direct effect of revenge-seeking on physical aggression scores from the BAQ was significantly and partially accounted for by Anger Expression – Out scores from the AMII, 95% CI 0.15, 0.49. This overall model explained 24.20% of the variance in physical aggressiveness, $F(1,187) = 59.70$, $p < .001$ (Figure 2A). Unlike Study 1, Study 2 observed a significant indirect effect of using aggression to improve mood, which partially accounted for the link between revenge-seeking and physical aggressiveness.

Sadistic tendencies. The direct effect of revenge-seeking on physical aggression scores from the BAQ was significantly and partially accounted for by sadism scores from the SSIS, 95% CI 0.03, 0.55. This overall model explained 24.16% of the

variance in physical aggressiveness, $F(1,184) = 58.63, p < .001$ (Figure 2B). Thus, Study 2 replicated Study 1’s indirect effect of sadistic tendencies to help explain why revenge-seekers engage in greater aggressive behavior.

Figure 2. Indirect effect models from Study 2, whereby the effect of revenge-seeking index scores’ effects on physical aggressiveness scores from the BAQ are partially accounted for by (A) Anger Expression Out scores of the AMII, or (B) sadism scores from the SSIS. Values represent unstandardized regression coefficients. * $p < .05$, ** $p < .01$, * $p < .001$**



Study 3

Study 3 was conducted to directly replicate Studies 1 and 2. Further, Study 3 included a multidimensional measure of impulsivity to examine the extent to which revenge-seeking was linked to impulsive responses to negative

and positive affect, as well as whether revenge-seekers tend to or tend not to premeditate their behavior. A measure of the Big Five personality dimensions was included to test the extent to which the associations we observed between revenge-seeking and other study variables were robust beyond the core dimensions of personality, via dominance analyses.

Materials and Methods

Participants

Participants were 219 undergraduates (156 females, $M = 18.68$, $SD = 0.94$) who were compensated with course credit for their participation. Sample size was determined by the number of participants that could be recruited within the study's single-semester timeframe.

Measures

International Personality Item Pool. The 120-item version of the IPIP measures individuals' Big Five personality trait dimensions: agreeableness, conscientiousness, extraversion, neuroticism, and openness to experience (Goldberg, 1999; Goldberg et al., 2006). Each item asks participants to rate the extent to which they agree that a given statement applies to them, along a 5-point Likert scale.

UPPS-P Impulsivity Scale. The UPPS-P impulsivity scale (Lynam, Smith, Whiteside, & Cyders, 2006; Whiteside & Lynam, 2001) includes 59 items, scored by averaging item-responses along on a 4-point Likert-style scale. The items assess five facets of impulsive behavior: negative urgency, lack of premeditation, lack of perseverance, sensation seeking, and positive urgency.

Procedure

Participants arrived at our laboratory to complete a study that was ostensibly about their mental visualization abilities and mood. In this study, participants provided informed consent and then completed a computerized battery of personality questionnaires, which included the Anger Rumination Scale, Angry Mood Improvement Inventory, Displaced Aggression Questionnaire, the IPIP, UPPS-P Impulsivity Scale, Brief Aggression Questionnaire, and Short Sadistic Impulse Scale¹. After completing

¹ Data from this study's Short Sadistic Impulse Scale and Angry Mood Improvement Inventory have been presented in another manuscript (Chester & DeWall, 2017), as have data from the UPPS-P Impulsivity

these measures, participants were debriefed and escorted from the laboratory. All research procedures received prior approval by the appropriate institutional review board and informed consent was obtained from every participant.

Results & Discussion

Construction of a Revenge-Seeking Index

As in Study 1, we combined standardized responses from the 4-item Thoughts of Revenge subscale of the ARS with the 11-item Revenge Planning subscale of the DAQ (minus the two redundant items). The resulting 13-item revenge-seeking index exhibited excellent internal consistency, $\alpha = .93$.

Correlations with Other Traits

Descriptive statistics and zero-order correlations for all study questionnaires are presented in Supplemental Table 6. As in Studies 1 and 2, we conducted bivariate and partial correlation analyses to test revenge-seeking tendencies' associations with age, gender, the four facets of trait aggression, the tendency to use aggression to improve mood, sadism, the Big Five personality dimensions (agreeableness, conscientiousness, extraversion, neuroticism, openness to experience), and the five facets of impulsivity (lack of perseverance, lack of premeditation, negative urgency, positive urgency, and sensation-seeking). Where appropriate, we used partial correlation analyses for inferential purposes instead of zero-order correlations. These analyses directly replicated the previous studies' results with positive correlations between vengeance-seeking and the tendency to aggress externally and internally as a means of mood improvement, anger, hostility, physical aggression, being male, and sadism (Table 3).

Scale and the IPIP's Neuroticism subscale (Chester, Lynam, Milich, and DeWall, 2017), though never in the context of revenge-seeking.

Table 3. Correlations between study variables and the 13-item revenge-seeking index of Study 3. Partial correlations were obtained by controlling for all other subscales from the given measure.

	Zero-Order			Partial		
	<i>r</i>	<i>df</i>	<i>p</i>	<i>r</i>	<i>df</i>	<i>p</i>
Age	.01	211	.896	---	---	---
AMII - Control In	-.31	217	< .001	-.11	214	.100
AMII - Control Out	-.18	217	.008	.05	214	.454
AMII - Express In	.44	217	< .001	.29	214	< .001
AMII - Express Out	.52	217	< .001	.34	214	< .001
BAQ - Anger	.41	217	< .001	.25	214	< .001
BAQ - Hostility	.42	217	< .001	.29	214	< .001
BAQ - Physical	.36	217	< .001	.21	214	.002
BAQ - Verbal	.22	217	.001	.03	214	.694
IPIP - Agreeableness	-.44	217	< .001	-.43	213	< .001
IPIP - Conscientiousness	-.30	217	< .001	-.05	213	.471
IPIP - Extraversion	-.21	217	.002	-.01	213	.947
IPIP - Neuroticism	.31	217	< .001	.26	213	< .001
IPIP - Openness to Experience	-.04	217	.552	.04	213	.524
Male	.22	214	.001	---	---	---
UPPSP - Lack of Perseverance	.10	217	.132	-.02	213	.724
UPPSP - Lack of Premeditation	.03	217	.700	-.14	213	.043
UPPSP - Negative Urgency	.30	217	< .001	.16	213	.019

UPPSP - Positive Urgency	.27	217	< .001	.15	213	.024
UPPSP - Sensation Seeking	-.03	217	.615	-.05	213	.513
SSIS (Sadism)	.51	216	< .001	---	---	---

As in Study 1 (though not Study 2), there was no association between revenge-seeking and age or controlling aggression to improve mood. Replicating previous research (McCullough et al., 2001), revenge-seeking's Big Five profile appeared to be a combination of low agreeableness and high neuroticism. Revenge-seeking was positively correlated with impulsivity under conditions of negative and positive affect, which suggests that revenge is often characterized by a mixed profile of affect. Finally, revenge-seekers appeared to premeditate their actions, suggesting that revenge can indeed be a calculated and planned activity more often than not. The combination of emotion-based impulsivity with this 'cold' and cognitive tendency to plan behavior indicates that revenge is also a mix of 'hot', affective, and 'cold', cognitive processes.

Moderation Analyses

Lack of premeditation by *negative urgency*. Moderation analyses tested whether the link between a lack of premeditation and vengeance-seeking was moderated by the two other significant predictors, negative and positive urgency. Using the PROCESS macro for SPSS (Hayes, 2012; model 1; 5,000 resamples), we observed that the lack of premeditation's negative association with revenge-seeking was significantly moderated by negative urgency, $B = -.32$, $SE = 0.11$, $t(215) = -2.99$, $p = .003$, 95% $CI = -0.54, -0.11$, $R^2 = .14$. At low (-1 SD) levels of negative urgency, there was no association between lack of premeditation and revenge-seeking, $B = .08$, $SE = 0.12$, $t(215) = 0.66$, $p = .510$, 95% $CI = -0.16, 0.32$. Yet at high ($+1$ SD) levels of

negative urgency, there was a negative association between the lack of premeditation and revenge-seeking, $B = -.36$, $SE = 0.11$, $t(215) = -3.19$, $p = .002$, 95% $CI = -0.59, -0.14$. This interactive effect suggests that revenge-seekers tend to respond impulsively to experiences of negative affect and to premeditate their actions.

Lack of premeditation by *positive* urgency. The interactive pattern between a lack of premeditation and negative urgency was also observed when negative urgency was replaced with positive urgency as a moderator of this effect, $B = -.26$, $SE = 0.11$, $t(215) = -2.47$, $p = .014$, 95% $CI = -0.47, -0.05$, $R^2 = .13$. At low (-1 SD) levels of positive urgency, there was no association between lack of premeditation and revenge-seeking, $B = -.06$, $SE = 0.13$, $t(215) = -0.44$, $p = .659$, 95% $CI = -0.32, 0.20$. Yet at high ($+1$ SD) levels of positive urgency, there was a negative association between lack of premeditation and revenge-seeking, $B = -.42$, $SE = 0.12$, $t(215) = -3.49$, $p = .001$, 95% $CI = -0.65, -0.18$. As with experiences of *negative* affect, the tendency to act impulsively during experiences of *positive* affect combines with a lack of premeditation to predict revenge-seeking. Valence appears to be less of an important dimension in revenge-seeking tendencies than might be guessed. Often, aggressive acts are less determined by valence than the motivational direction (i.e., approach versus avoid; Pond et al., 2012), and future research should investigate revenge-seeking's relation to these motivational dimensions.

Dominance Analysis

To investigate which of Study 3's independent variables was the most predictive of revenge-seeking tendencies, we simultaneously entered each of them into a dominance analysis, as detailed in Study 1. This analysis revealed that, of all 21

predictors in Study 3, sadism scores from the SSIS were by far the most dominant (Supplemental Table 7). The next closest variable in dominance was the Anger Expression-Out subscale of the AMII and physical aggressiveness was ranked 6th (Supplemental Table 7).

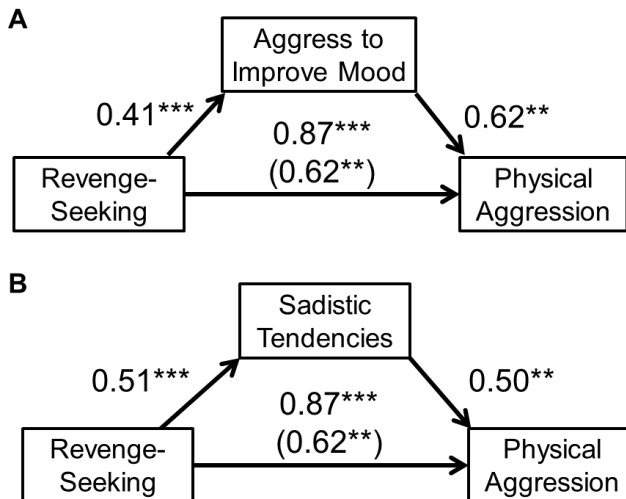
Study 3 replicated Study 2's finding that sadism was far-and-away the most explanatory of variance in revenge-seeking. Yet instead of physical aggressiveness being a core feature, as in Studies 1 and 2, the tendency to use aggression to improve mood was the second most dominant variable. The common thread between these two constructs is the experience of positive affect during aggression and provides strong evidence that this is a central feature of revenge-seeking.

Indirect Effect Analyses

Mood improvement tendencies. The direct effect of revenge-seeking on physical aggression scores from the BAQ was significantly and partially accounted for by Anger Expression – Out scores from the AMII, 95% CI 0.08, 0.45. This overall model explained 12.63% of the variance in physical aggressiveness, $F(1,217) = 31.36, p < .001$ (Figure 3A).

Sadistic tendencies. The direct effect of revenge-seeking on physical aggression scores from the BAQ was significantly and partially accounted for by sadism scores from the SSIS, 95% CI 0.03, 0.47. This overall model explained 12.58% of the variance in physical aggressiveness, $F(1,216) = 31.07, p < .001$ (Figure 3B). These two models replicated Studies 1 and 2, lending further evidence for the hedonic reward of aggression serving as a motivator of revenge-seekers' physically aggressive tendencies.

Figure 3. Indirect effect models from Study 3, whereby the effect of revenge-seeking index scores' effects on physical aggressiveness scores from the BAQ are partially accounted for by (A) Anger Expression Out scores of the AMII, or (B) sadism scores from the SSIS. Values represent unstandardized regression coefficients. * $p < .05$, ** $p < .01$, * $p < .001$**



General Discussion

The search for vengeance is a central theme of ancient history and literary classics, from the Code of Hammurabi to *Moby Dick* and *Romeo & Juliet*. Some people chronically seek revenge, instigating

and perpetuating conflict and harm to humans across the globe. However, our understanding of the nomological network around revenge-seeking is incomplete, as is our knowledge of what motivates the search for vengeance. To increase such comprehension, we conducted three studies in which we measured dispositional revenge-seeking alongside personality measures relevant to aggression and impulsivity.

Revenge-Seeking and Physical Aggression

Across all three studies, revenge-seeking correlated positively with physical, but not verbal, forms of trait aggression. Further analyses revealed that this was not an artifact of males' greater tendency to seek both revenge and physical forms of aggression. If we seek to reduce and understand physical aggression, our findings imply that a good place to start is with revenge-seeking.

Does Revenge Run Hot or Cold?

Considerable debate has occurred in regards to whether acts of vengeance are subserved by 'hot', affective impulsivity (i.e., reactive/retaliatory aggression) or 'cold', calculated goal pursuit (i.e., instrumental/proactive aggression; Bushman & Anderson, 2001; Vitaro & Brendgen, 2005). Applying a multidimensional model of impulsivity (i.e., the UPPS-P model; Whiteside & Lynam, 2001) allowed us to test whether one side of this debate had more evidence on their side. Our results suggest that revenge runs *both* hot and cold.

Revenge-seeking was positively associated with rash impulsivity in response to both negative and positive emotions, as well as a tendency toward premeditation of behavior. Revenge-seeking's positive association with the tendency to premeditate behavior supports a view of vengeance as more planned than rashly-executed. More importantly, these results fit best with conciliatory models of retaliatory aggression (Bushman & Anderson, 2001), which posit that both affective and cognitive processes spur on retaliatory aggression. Such dichotomies between 'hot'-reactive and 'cold'-proactive forms of aggression possess limited utility and map poorly onto the realities of aggression and revenge.

At the Core of Vengeance-Seeking: Sadistic Pleasure?

In a similar vein, another dichotomous approach to revenge concerns negative and positive forms of affect. To date, models of revenge and retaliatory aggression have largely focused on negatively-valenced forms of affect (e.g., anger; Barber et al., 2005). These approaches are not wrong. Indeed, we found that revenge-seeking was associated with tendencies toward neuroticism and anger. However, an increasing

focus is being paid to positive affect and its ability to promote retaliatory aggression (Chester, 2017; Chester & DeWall, 2016, 2017). Supporting this view, revenge-seeking was repeatedly associated with sadistic tendencies, which are characterized by the pleasure of harming others. Individuals tend to use this positive affect to combat negative affect (Chester & DeWall, 2017), and the repeated associations we observed between revenge-seeking and the tendency to use aggression to improve mood provide trait-level evidence for this phenomenon. In the end, vengeance runs hot *and* cold and the complex interplay between these two forces will aid in our understanding and prevention of revenge and aggression, more generally. A crucial further avenue for this line of investigation is to delineate the boundary conditions that set the limits on the extent to which an act of vengeance is experienced as pleasant.

Limitations and Future Directions

A central limitation of this paper is the correlational nature of our findings. Although we used partial correlation and dominance analyses to assess correlations, while controlling for potential confounds, our findings may reflect the influence of extraneous variables. Further, because we measured all variables in a cross-sectional manner and didn't employ any form of experimental manipulation, the directionality of our observed correlations are impossible to determine. Future research should employ longitudinal designs that measure each of these constructs in a repeated manner, allowing for some directional inferences. Experimental manipulations that increase revenge-seeking should also be employed to allow for causal inferences to be made. Our samples were all drawn from undergraduate populations and were largely underpowered when it came to estimating indirect effects. As such, our inferences are

limited to a unique group of individuals and our findings are at risk of being due to sampling variability. Future research should seek to replicate our findings among larger samples who are more prone to vengeance-seeking, such as clinical and at-risk populations. Finally, our indirect effect models were purely cross-sectional; longitudinal and experimental methods would help provide tests of true mediation.

Conclusion

Who are revenge-seekers—and what motivates them? Our findings, combined with the current literature, suggest that those who seek revenge are physically-aggressive individuals who cultivate anger and hostility. Their aggressiveness is likely motivated by the pleasure that revenge brings them and the emotion-regulating benefits that it is perceived to bring. Additionally, revenge-seekers' impulsivity is specific to emotional contexts, especially when combined with the tendency to premeditate their behaviors. These findings lend novel insight into the personalities and motivations of revenge-seekers and hopefully will allow for identification of and intervention upon such individuals.

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Supplemental Table 1. Item text from the 13-item Revenge-Seeking Index. ARS = Anger Rumination Scale, DAQ = Displaced Aggression Questionnaire.

Item (Originating Scale)	Item Text
1 (ARS item 4)	I have long living fantasies of revenge after the conflict is over.
2 (ARS item 6)	I have difficulty forgiving people who have hurt me.
3 (ARS item 13)	I have daydreams and fantasies of a violent nature.
4 (ARS item 16)	When someone makes me angry I can't stop thinking about how to get back at this person.
5 (DAQ item 22)	If somebody harms me, I am not at peace until I can retaliate.
6 (DAQ item 23)	I often daydream about situations where I'm getting my own back at people.
7 (DAQ item 24)	I would get frustrated if I could not think of a way to get even with someone who deserves it.
8 (DAQ item 25)	I think about ways of getting back at people who have made me angry long after the event has happened.
9 (DAQ item 26)	If another person hurts you, it's alright to get back at him or her.
10 (DAQ item 27)	The more time that passes, the more satisfaction I get from revenge.
11 (DAQ item 29)	When somebody offends me, sooner or later I retaliate.
12 (DAQ item 30)	If a person hurts you on purpose, you deserve to get whatever revenge you can.
13 (DAQ item 31)	I never help those who do me wrong.

Supplemental Table 2. Descriptive statistics and zero-order correlations for key variables in Study 1.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1	19.0	1.72											
2	3.09	0.60	.05										
3	3.13	0.52	.11	.64***									
4	2.45	0.62	-.14	-.14	-.14								
5	2.18	0.55	.07	-.51***	-.28***	.23**							
6	2.49	1.22	-.06	-.68***	-.38***	.21**	.60***						
7	3.19	1.37	-.07	-.12	-.06	.39***	.26**	.19*					
8	2.91	1.60	.10	-.08	-.01	.08	.28***	.23**	.23**				
9	3.65	1.27	.08	-.14	-.06	.14	.59***	.28***	.15	.48***			
10	0.28	0.45	.16*	.04	.02	-.08	.20*	-.04	.11	.54***	.26**		
11	0.02	0.73	-.01	-.33***	-.24**	.38***	.38***	.36***	.37***	.47***	.26**	.34***	
12	1.48	0.68	.07	-.05	-.12	.03	.16	.14	.10	.40***	.24**	.34***	.41***

- 1. Age
 - 2. AMII - Control In
 - 3. AMII - Control Out
 - 4. AMII - Express In
 - 5. AMII - Express Out
 - 6. BAQ - Anger
 - 7. BAQ - Hostility
 - 8. BAQ - Physical
 - 9. BAQ - Verbal
 - 10. Male
 - 11. Revenge-Seeking Index
 - 12. SSIS (Sadism)
- **p* < .05, ***p* < .01, ****p* < .001

Supplemental Table 3. General dominance weights (GDW) and subsequent dominance rankings for all predictors of revenge-seeking in Study 1.

Predictor	GDW	Ranking
Age	.0011	11
AMII - Control In	.0442	5
AMII - Control Out	.0204	9
AMII - Express In	.0561	3
AMII - Express Out	.0260	8
BAQ - Anger	.0351	7
BAQ - Hostility	.0429	6
BAQ - Physical	.1073	1
BAQ - Verbal	.0172	10
Male	.0453	4
SSIS (Sadism)	.0783	2

Supplemental Table 4. Descriptive statistics and zero-order correlations for key variables in Study 2.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1	18.83	1.23											
2	3.04	0.57	-.11										
3	2.99	0.57	-.04	.60***									
4	2.55	0.62	-.11	-.08	-.09								
5	2.29	0.56	-.03	-.49***	-.21**	.31***							
6	2.56	1.18	-.08	-.62***	-.41***	.34***	.57***						
7	3.28	1.44	-.13	-.19**	-.07	.50***	.35***	.32***					
8	2.94	1.74	.01	-.20**	-.07	.10	.44***	.25***	.23**				
9	3.90	1.41	-.05	-.17*	.06	.10	.47***	.27***	.22**	.42***			
10	0.30	0.46	.20**	-.01	-.10	-.04	.08	.02	.11	.50***	.10		
11	-0.01	0.69	-.16*	-.32***	-.15*	.29***	.41***	.47***	.44***	.49***	.32***	.23**	
12	1.55	0.66	-.04	-.29***	-.23**	.11	.30***	.36***	.18*	.41***	.20**	.28***	.59***

- 1. Age
 - 2. AMII - Control In
 - 3. AMII - Control Out
 - 4. AMII - Express In
 - 5. AMII - Express Out
 - 6. BAQ - Anger
 - 7. BAQ - Hostility
 - 8. BAQ - Physical
 - 9. BAQ - Verbal
 - 10. Male
 - 11. Revenge-Seeking Index
 - 12. SSIS (Sadism)
- **p* < .05, ***p* < .01, ****p* < .001

Supplemental Table 5. General dominance weights (GDW) and subsequent dominance rankings for all predictors of revenge-seeking in Study 2.

Predictor	GDW	Ranking
Age	.0159	9
AMII - Control In	.0247	7
AMII - Control Out	.0066	11
AMII - Express In	.0261	6
AMII - Express Out	.0332	5
BAQ - Anger	.0666	4
BAQ - Hostility	.0767	3
BAQ - Physical	.0871	2
BAQ - Verbal	.0239	8
Male	.0156	10
SSIS (Sadism)	.1865	1

Supplemental Table 6. Descriptive statistics and zero-order correlations for key variables in Study 3. Bolded items significant at $p < .05$.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	18.68	0.94																					
2	3.19	0.58	-.04																				
3	3.08	0.57	-.01	.66																			
4	2.57	0.64	-.10	-.16	-.11																		
5	2.33	0.57	.07	-.48	-.33	.42																	
6	2.83	1.31	.03	-.59	-.43	.35	.60																
7	3.47	1.55	-.07	-.22	-.14	.58	.36	.36															
8	2.93	1.79	.07	-.12	-.05	.15	.33	.32	.26														
9	4.02	1.51	.01	-.15	-.10	.11	.48	.25	.22	.36													
10	3.65	0.46	-.11	.40	.32	-.25	-.50	-.41	-.32	-.33	-.37												
11	3.72	0.52	-.11	.34	.37	-.34	-.41	-.47	-.30	-.11	.01	.25											
12	3.72	0.59	-.06	.23	.19	-.32	-.03	-.15	-.27	.17	.24	.13	.32										
13	2.71	0.60	-.09	-.35	-.31	.56	.34	.39	.43	-.07	-.13	-.01	-.49	-.48									
14	3.23	0.51	-.05	-.03	-.06	-.14	.01	.04	-.11	.09	.11	.20	-.07	.11	.01								
15	0.28	0.45	.25	-.04	-.10	-.08	.08	.11	.12	.40	.20	-.37	-.00	.01	-.21	-.04							
16	-0.00	0.73	.01	-.31	-.18	.44	.52	.41	.42	.36	.22	-.44	-.30	-.21	.31	-.04	.22						
17	1.61	0.73	.01	-.16	-.13	.17	.28	.30	.15	.33	.18	-.36	-.12	-.13	.02	.02	.21	.51					
18	2.07	0.61	.07	-.16	-.24	.16	.20	.30	.06	-.02	-.15	-.06	-.61	-.23	.35	.02	-.09	.10	-.01				
19	2.12	0.56	.06	-.23	-.21	.00	.22	.24	-.03	.11	-.02	-.12	-.48	.06	.07	.09	-.04	.03	-.01	.63			
20	2.26	0.68	-.01	-.37	-.33	.42	.40	.49	.26	.08	.00	-.27	-.47	-.18	.49	.00	.04	.30	.13	.51	.42		
21	1.99	0.68	.05	-.33	-.27	.23	.37	.43	.23	.11	.02	-.26	-.46	-.05	.29	.11	.02	.27	.16	.53	.59	.72	
22	2.78	0.65	.04	-.02	-.02	-.03	.03	-.02	.00	.29	.09	-.09	.10	.36	-.23	.02	.20	-.03	.08	-.29	-.01	-.01	.01

- 1. Age
- 2. AMII - Control In
- 3. AMII - Control Out
- 4. AMII - Express In

5. AMII - Express Out
6. BAQ - Anger
7. BAQ - Hostility
8. BAQ - Physical
9. BAQ - Verbal
10. IPIP - Agreeableness
11. IPIP - Conscientiousness
12. IPIP - Extraversion
13. IPIP - Neuroticism
14. IPIP - Openness to Experience
15. Male
16. Revenge-Seeking Index
17. UPPSP - Lack of Perseverance
18. UPPSP - Lack of Premeditation
19. UPPSP - Negative Urgency
20. UPPSP - Positive Urgency
21. UPPSP - Sensation Seeking
22. SSIS (Sadism)

Supplemental Table 7. General dominance weights (GDW) and subsequent dominance rankings for all predictors of revenge-seeking in Study 3.

Predictor	GDW	Ranking
Age	.0012	20
AMII - Control In	.0164	10
AMII - Control Out	.0053	18
AMII - Express In	.0454	3
AMII - Express Out	.0828	2
BAQ - Anger	.0249	7
BAQ - Hostility	.0376	5
BAQ - Physical	.0361	6
BAQ - Verbal	.0103	14
IPIP - Agreeableness	.0434	4
IPIP - Conscientiousness	.0148	11
IPIP - Extraversion	.0091	15
IPIP - Neuroticism	.0211	9
IPIP - Openness to Experience	.0011	21
Male	.0215	8
UPPSP - Lack of Perseverance	.0024	19
UPPSP - Lack of Premeditation	.0060	17
UPPSP - Negative Urgency	.0114	13
UPPSP - Positive Urgency	.0131	12
UPPSP - Sensation Seeking	.0066	16
SSIS (Sadism)	.1300	1