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The development and psychometric properties of the grudge aspect measure

Elizabeth van Monsjou | Amy Muise | Karen Fergus | Charles Ward Struthers

Department of Psychology, York University, Toronto, Ontario, Canada

Correspondence
Charles Ward Struthers, Department of Psychology, 246 BSB, York University, 4700 Keele St., Toronto, ON M3J 1P3, Canada.
Email: struther@yorku.ca

Abstract

Grudges are a common response to an interpersonal transgression that have received limited empirical attention. In the current research, we developed a self-report measure of holding a grudge—the grudge aspect measure. The items were based on key findings from van Monsjou et al.'s (2021) thematic analysis: the six underlying components of holding a grudge identified in their analysis (need for validation, moral superiority, inability to let go, latency, sever ties, and expectations of the future); the cyclical process of holding a grudge which is characterized by persistent negative affect and intrusive thoughts that interfere with one's quality of life; and the definition of a grudge as sustained feelings of hurt and anger that dissipate over time but are easily reignited. Across three studies, we validated an 18-item scale capturing three aspects of holding a grudge: *disdain*, feelings of dislike and intolerance for the transgressor; *emotional persistence*, sustained negative affect such as anger and hurt; and *perceived longevity*, perceptions of never being able to let go of the grudge. As

Statement of Relevance: This program of research focused on the developed an 18-item self-report measure of grudge holding: grudge aspect measure (GAM). The GAM evaluates three components of holding a grudge: disdain for transgressors, emotional persistence, and perceived longevity. The GAM is a valid and reliable way to measure holding a grudge. Given the implications of holding grudges, the GAM is important for scientists to better understand how grudges develop, unfold, and impact relationships.

expected, these aspects of holding a grudge were linked to less forgiveness and greater general unforgiveness, as well as revenge, avoidance, and rumination. Topics for future research are discussed.

KEYWORDS
conflict resolution, forgiveness, repair of personal relationships

1 | INTRODUCTION

Maintaining interpersonal relationships is a fundamental human pursuit (Baumeister & Leary, 1995; Ryan & Deci, 2000) and an essential aspect of well-being (Loving & Sbarra, 2015). However, people sometimes hurt others and threaten valuable social bonds (Niehuis et al., 2019). Although transgressions have negative implications for both victims and transgressors, the effects are often greater for victims (Fincham, 2020; Zechmeister & Romero, 2002). As such, people need to be able to protect themselves from ongoing transgressions while also preserving valuable relationships. Three common victim post-transgression responses that can achieve these goals are seeking revenge, forgiving, and harboring a grudge (Eaton & Struthers, 2006; Fincham, 2000; Finkel et al., 2002; Kato, 2016; Lemay Jr. et al., 2012; McCullough et al., 1997; McNulty & Russell, 2016; Strelan et al., 2017; van Monsjou et al., 2021). We are beginning to understand how and why victims forgive or seek revenge against transgressors, but relatively little is known about holding grudges (e.g., Fehr et al., 2010; Hanke & Vauclair, 2016; Karremans & Van Lange, 2005; Kato, 2016; McCullough, 2008; McCullough et al., 2013; Riek & Mania, 2012; van Monsjou et al., 2021). Recently, van Monsjou et al. (2021) advanced scholars' definitional and theoretical understanding of grudges through a qualitative analysis of the lived experience of grudge holding; however, one issue limiting the systematic empirical study of grudges within personal relationships is the absence of a psychometrically sound measure. The primary purpose of this research was to develop such a measure of grudge holding.

2 | DEFINING, EXPLAINING, AND MEASURING GRUDGES

McCullough et al. (2013) theorize that victims developed two complimentary cognitive systems to deter transgressors and preserve valuable relationships: the revenge and forgiveness systems. Revenge imposes costs on transgressors for their perceived offenses and teaches them not to harm victims again. However, seeking revenge can be costly because it can damage valuable relationships, provoke counter revenge, and even escalate into violence (Kubrin & Weitzer, 2003). Conversely, if victims value their relationship with transgressors and do not expect them to reoffend, forgiving—a decision to let go of an unfavorable evaluation of a transgressor and replace it with a favorable evaluation—is a viable option (Burnette et al., 2012; Karremans & Van Lange, 2005; McCullough et al., 2013; Struthers et al., 2019). However, by forgiving, victims may encourage repeated transgressions because transgressors will have suffered no consequences for their initial wrongdoing (Exline & Baumeister, 2000; McCullough, 2008; McNulty, 2011). Another option for victims is to harbor a grudge, which

refers to sustained feelings of hurt and anger that dim over time but are easily reignited by triggers (van Monsjou et al., 2021). Grudges can be costly because they can lead to health-related issues such as greater risk of heart disease, chronic pain, and ulcers; prolonged conflict; and disadvantages for victims' and transgressors' relationships (Witvliet et al., 2001). Given this, more research is needed to better understand their unique place in how people respond to transgressions, the intrapersonal and interpersonal factors that contribute to holding a grudge, as well as the implications of doing so (Baumeister et al., 1998; Messias et al., 2010; Rapske et al., 2010; Struthers et al., 2019; van Monsjou et al., 2021; Witvliet et al., 2001; Wixen, 1971). Before this can be done, it is vital that relationship scholars define what it means to hold a grudge, develop theories to explain how they unfold, and construct psychometrically sound measures.

van Monsjou et al. (2021) provided scholars with an in-depth understanding of what it means to hold a grudge. Using a qualitative thematic analysis, they revealed that holding a grudge is complex and multi-faceted, including a need for validation, a feeling of moral superiority over the transgressor, an inability to let go, emotional latency in which the grudge exists over time but is not manifested until triggered, a desire to sever ties with the transgressor, and an altered sense of long-term expectations of oneself and others. Moreover, they theorized that holding a grudge is a process that is cyclical and layered, involving an interplay between cognitions, emotions, and behavior. Grudges are characterized by powerlessness and persistent negative affect that interfere with the grudge holder's way of life. Over time, the emotional intensity subsides, leaving the grudge holder in a state of passive acceptance in which the negative emotional intensity lays dormant, but can easily be reactivated.

We used van Monsjou et al.'s (2021) recent definitional and theoretical advancements to develop a measure of grudge holding and establish its psychometric properties. We labeled this measure the grudge aspect measure (GAM) because it is designed to assess the key aspects or components of holding a grudge (Appendix A).

3 | DEVELOPING THE GAM AND DATA ANALYTIC PLAN

Our goal in developing the GAM was to assess the cognitive, affective, and behavioral aspects of holding a grudge. To start, we converted the interview data from van Monsjou et al. (2021) into individual items that we distributed to unique samples of participants. We then completed an Exploratory Factor Analysis (EFA) to determine the fewest number of common factors and items that could describe the inter-relation between relevant items followed by a confirmatory factor analysis (CFA) to further refine and affirm specified common factors. We also included a variety of other variables expected to relate to holding a grudge. The materials for Studies 1–3 and Supplemental Material providing a fuller description of our scale development strategy and analysis are available on Open Science Framework (OSF) https://osf.io/wtscr/?view_only= 8574df30ca5547efbbfb3a33d361a70e.[1]

4 | STUDY 1

Study 1 determined which items best captured holding a grudge. We generated items based on van Monsjou et al.'s (2021) qualitative analysis, distributed them to participants, and conducted an EFA to explore the factor structure. Despite relying on van Monsjou et al.'s (2021) theory of holding grudges with six overarching themes, we were unsure how this would translate to the

practicalities of measuring holding a grudge. Given the early stage of developing our grudge measure, we decided to start with an EFA.

4.1 | Method

4.1.1 | Participants

Based on guidelines for determining adequate sample size for factor analysis (Fabrigar & Wegener, 2011), our initial sample included 632 participants. We recruited through our Psychology Department's Undergraduate Research Participant Pool in which students earn course credit for their participation. To increase our sample size, students in an upper-level psychology course distributed the study materials to two independent nonstudents, whose names would be entered into two $100 draws in exchange for their participation. Participants were excluded from the final sample if they were inattentive to the study material, $n = 251$. Eight participants were removed because they indicated they did not respond conscientiously (i.e., "Did you respond honestly, seriously, and thoughtfully when answering the questions in this study, or did you respond randomly?"), and the rest were excluded because they had incorrectly responded to three attention check items in which participants were asked to select a specific response option (e.g., "Please select 'Somewhat disagree'"). The final sample in this study was 373 participants, which is an adequate sample size for an EFA (Fabrigar & Wegener, 2011).

To be eligible, participants had to be able to recall a specific transgression that was currently unresolved. The average age of participants was 28 ($SD = 13.23$), with 134 men and 234 women, 3 identified as "other," and 1 "preferred not to disclose gender." In terms of ethnicity, 30% were South Asian, followed by White (27%), Middle Eastern (14%), East Asian (11%), African Canadian (7%), Other (5%), Latin American (3%), and of mixed ethnicity (2%). Participants reported that the transgression they recalled had occurred, on average, 1–2 years ago. They also reported a variety of relationships to the person who committed the transgression: 43.25% friend, 17.69% family member, 14.48% romantic partner, 5.36% acquaintance, 5.09% coworker or boss, 4.58% stranger; and 10.72% did not report relationship.

4.1.2 | Materials

Transgression: Participants recalled and wrote about a transgression someone had committed against them that was currently unresolved, meaning that the person had not apologized, or they had not forgiven him or her. The event must have had a moderate to severe impact on them. Participants were also asked how long ago the transgression occurred, as well as what their relationship was to the transgressor.

Grudge items: A representative set of items was generated from the findings from van Monsjou et al. (2021). A full description of our strategy and the final 171 items, are provided in the Supplemental Material. Following our initial reduction of items, participants were asked to rate from 1 (*Strongly disagree*) to 7 (*Strongly agree*) how much they agreed with each of the 171 statements (the full range of response options was): 1 (*Strongly disagree*), 2 (*Disagree*), 3 (*Somewhat disagree*), 4 (*Neither agree nor disagree*), 5 (*Somewhat agree*), 6 (*Agree*), 7 (*Strongly agree*).

4.1.3 | Procedure

Participants completed the study online. They first provided demographic information, then were given the transgression recall prompt and the subsequent items to complete. Participants were debriefed in writing at the end of the study.

4.2 | Results and discussion

4.2.1 | Parallel analysis

Before running the EFA, we conducted a parallel analysis which recommended that six factors be retained. The eigenvalues ranged from 71.66 for the first factor to 4.72 for the sixth factor. As a result, we began model specification with six factors, which also corresponded to the number of themes identified by van Monsjou et al. (2021). However, only four of the factors were above the line of random eigenvalues, suggesting that a four-factor model was the best approximation of these data.

4.2.2 | Exploratory factor analysis

Ordinary least squares (OLS) factoring and oblimin rotation were performed on all 171 items. We chose an oblique rotation because the factors were expected to be correlated with one another. Although six factors were identified by the parallel analysis, only four factors were above the eigenvalue cut-off line. Therefore, we estimated three models with six, four, and three factors. All residual correlations for the following models were normally distributed.

We initially ran six and four factor models. The six-factor model was not a considerably better fit than the four-factor model in terms of SRMR (0.05 vs. 0.06), therefore we opted to proceed with four factors because it was more parsimonious. To test whether the model could be simplified even further, we also ran a three-factor model. The fit of this model was not considerably worse (SRMR = 0.07), but it was not as interpretable as the four-factor model. Therefore, we decided to retain four factors. This led to dropping items that did not load higher than 0.30 on any of the four factors ($n = 19$) and dropping any items that cross-loaded higher than 0.30 on more than one factor ($n = 20$) (Tabachnick & Fidell, 2007).

4.2.3 | Four-factor model

We labeled the four factors: disdain, persistence, desire to let go, and need for validation (see Table S1). Disdain captured the negative feelings participants had toward transgressors and how they did not want to have anything to do with them anymore. For instance, the highest loading item was "I want nothing to do with this person." Persistence captured participants' lingering negative emotions about the transgression and the perception that they would feel this way for a long time. The highest loading item was "I'm still hurt by what happened." The third factor, desire to let go, identified participants' thoughts about holding the grudge, primarily the fact that they wished they were not holding on to it and they felt that it was destructive. For instance, "Holding on to this is holding me back." The final factor, need for validation,

represented participants' need for their perspective to be validated. This reflected validation from others and the transgressor. The highest loading item was "Confiding in others helps me cope with what happened."

Overall, the four factors corresponded to some of the themes identified in van Monsjou et al.'s (2021) thematic analysis. The disdain and persistence subscales captured the most intrinsic, universal aspects of holding a grudge, in particular the corresponding emotions, thoughts, and behaviors. We decided not to incorporate the negative impact and need for validation subscales into the next study because they are more reflective of metacognition (i.e., thinking about how one is holding a grudge) than the more directly experienced emotional or cognitive components of a grudge. Specifically, perceiving that holding the grudge is negative and unflattering is due to personal evaluation of the effect it is having on oneself, requiring reflection and self-awareness. Similarly, the need for validation also represents an evaluation of the grudge. Participants want their thoughts and emotions to be normalized by the transgressors and others. In contrast, disdain felt for a transgressor and persistent negative affect are direct components of holding a grudge, therefore they are more integral to its measurement. Deciding not to include these two subscales reduced the item-pool from 132 to 92 items.

To reduce the item pool even further, we dropped items that were reverse-worded; items that were not universal, such as cutting the transgressor out of their lives, because not all participants are willing or able to do so; items that tap into a potential motive for holding a grudge, which is not the purpose of this scale; and items with low factor loadings (see Supplemental Material for a fuller explanation of our strategy). The final item count was 32 for disdain and 27 for persistence (see the Supplemental Material for the list of 59 items).

5 | STUDY 2

The purpose of Study 2 was to refine the measure of holding grudges and further reduce the number of items. To do this we ran another EFA on the 59 items retained from Study 1, followed by a CFA on a smaller subset of items to begin to confirm the final structure of the GAM. We also wanted to compare how the finalized grudge scale would be associated with other variables of interest, such as forgiveness and personality traits. Specifically, we measured additional post-transgression responses, including forgiving, seeking revenge/avoiding, and rumination. We expected holding a grudge to be negatively associated with forgiving. Although van Monsjou et al. (2021) found that most participants did not want revenge, we anticipated that those who do desire vengeance may also be holding a grudge. In addition to these post-transgression responses, we wanted to test the association between holding a grudge and individuals' degree of rumination about transgressions. van Monsjou et al. (2021) found that ruminating about what had happened was an important component of holding a grudge, and that being unable to control one's thoughts plagued many participants. In light of this, we expected holding a grudge to be positively linked to rumination.

We also tested whether personality traits related to other constructs associated with the social motivation process following a transgression (e.g., agreeableness and neuroticism) would relate to holding grudges. Past research has linked holding a grudge, measured with rudimentary items, to feelings of powerlessness (Struthers et al., 2019), and high levels of attachment anxiety (van Monsjou et al., 2015). Because of this we tested the relation between power, attachment, and the Study 2 GAM items to determine whether the current scale would show similar associations. These analyses are provided in the Supplementary Material.

5.1 | Method

5.1.1 | Participants

We recruited an initial sample of 985 participants using the same methods and sample size justification noted in Study 1. We excluded participants based on evidence of inattention or not following instructions. 298 were dropped for responding incorrectly to the attention check items, and 223 were removed for having more than 3 missing data points, again potentially indicating inattention. Seven were dropped because they indicated that they did not respond conscientiously, and 28 were dropped because they completed the study on a mobile device despite explicit instructions not to do so. Finally, 22 participants were removed for participating more than once. Our final sample included 406 participants, including 95 men and 307 women, 2 who identified their gender as "other," and 2 who preferred not to disclose their gender. Their average age was 20 years old ($SD = 5.70$). The sample was ethnically diverse: 26% of the sample were White, 25% were South Asian, 12% were Middle Eastern, 11% East Asian, 10% African American, 6% other, 5% Latin American, 2% mixed ethnicity, and 1% Indigenous.

Of the transgression recalled, 219 reported that the transgressor was a friend (55%), 64 participants reported that the transgressor was a family member (16%), 63 a romantic partner (16%), 14 reported a coworker or boss (5%), 15 an acquaintance (4%), and 22 a stranger (5%). Most participants ($n = 223$; 55%) said that the transgression had taken place within the past year.

5.1.2 | Materials

All items were rated using this same seven-point scale (1—*Strongly disagree* to 7—*Strongly agree*) unless otherwise specified.

Post-transgression responses: The following scales were used to measure responses individuals had to the transgressions they recalled. The same transgression stimulus as Study 1 was used, in which participants were asked to recall and write about a moderate to severe unresolved transgression. Participants were also asked how long ago the transgression occurred, as well as what their relationship was to the transgressor.

Grudge items: With respect to the recalled transgression, participants were asked how much they agreed with the 59 items retained from Study 1.

Rumination: Participants were asked how much they ruminate about the offense with the Rumination about an Interpersonal Offense Scale (RIOS, Wade et al., 2008). This scale consists of six items, for instance, "I can't stop thinking about how I was wronged by this person." This sale has acceptable internal consistency (all alpha coefficients >.90) (Wade et al., 2008).

Revenge and avoidance: The degree to which participants sought revenge or avoided the transgressor were measured using the Transgression Related Interpersonal Motivation Scale (TRIM-12) (McCullough et al., 1998). The TRIM-12 has two subscales: one measuring revenge and the other measuring avoidance. The revenge subscale has five items, such as "I'll make him or her pay" (original $\alpha = .90$). The avoidance subscale has seven items, such as "I avoid him or her" (original $\alpha = .86$).

Forgiveness: Forgiveness was measured using the benevolence subscale of the TRIM-18 (McCullough & Hoyt, 2002; original α's > .85). This subscale has six items that measure goodwill toward the transgressor. For instance, "I have given up my hurt and resentment."

Trait post-transgression responses: We were also interested in examining participants' trait tendencies to forgive, seek revenge, or apologize. To do this, one item inquiring about each one was included. The items were "When people do things that upset me, I tend to let go of it easily," "When people do things that upset me, I often try to get back at them," and "When I do things that upset others, I tend to apologize."

5.1.3 | Personality traits

Big Five: Personality traits were measured using a short form of the Big Five Inventory (BFI-S; Lang et al., 2011). This scale has 15 items, 3 for each personality trait. Participants responded to statements regarding how they see themselves. For instance, for neuroticism, a sample item is "I see myself as someone who worries a lot." (original $\alpha = .60$; Lang et al., 2011); extraversion: "I see myself as someone who is talkative" (original $\alpha = .66$); agreeableness: "I see myself as someone who has a forgiving nature" (original $\alpha = .50$); openness: "I see myself as someone who is original, comes up with new ideas" (original $\alpha = .63$); conscientiousness: "I see myself as someone who does things efficiently" (original $\alpha = .60$).

Social power: Social power was measured with the Generalized Sense of Power Scale (Anderson & Galinsky, 2006; original α's > .78). This scale consists of eight items that assess how much power individuals feel they have in their relationships with others. Sample items include "In my relationships with others, I can get them to do what I want."

Attachment anxiety: To measure attachment anxiety, we included the anxiety subscale of the Attachment Styles Questionnaire (ASQ; Feeney et al., 1994). The anxiety subscale has 15 items (original $\alpha = .87$), rated from 1 (*Strongly disagree*) to 7 (*Strongly agree*). A sample item is "I wonder why other people would want to be involved with me."

5.2 | Results and discussion

5.2.1 | Preliminary analysis

See Table S2 for the descriptive statistics and internal consistency of all measures.

5.2.2 | Splitting the dataset

For this study, we split the dataset into a training and test set. This enabled us to conduct both an EFA and a CFA on the same dataset. We ran another EFA because the item pool was still quite large and to determine whether the factor structure from Study 1 would replicate. The sample was equally split so that 203 participants were included in the training set and the remaining 203 were included in the test set.

5.2.3 | Training set

Parallel analysis: A parallel analysis recommended retaining three factors. However, only two of the three factors were above the line of random eigenvalues (Factor 1 EV = 28, Factor 2 EV = 5), suggesting that a two-factor model was the best approximation of these data.

EFA: As in Study 1, OLS factoring and oblimin rotation were used. According to the parallel analysis, models with four, three, two, and one factors were estimated. All residual correlations for the following models were normally distributed. First, we considered the four-factor model. Although the three and four factor models had sufficiently low SRMRs (0.05 and 0.04, respectively), the factors did not make theoretical sense. The two-factor model was a good fit (SRMR value = 0.06), made theoretical sense, and was more parsimonious, with items loading cleanly on to the two factors. This also aligns with the two factors retained from Study 1. A single-factor model was also considered; however, the model fit was poor (SRMR = 0.13). As a result, we decided to proceed with the two-factor model. To reduce the number of items, the three items that cross loaded on both factors were eliminated. Thirty items that had communalities lower than 0.5 were also eliminated. The remaining 26 items had high factor loadings and communalities (see Table S3). The internal consistency (i.e., Cronbach's alpha) was .96 for the disdain factor and .93 for the persistence factor.

5.2.4 | CFA on test set

After reducing the total number of items from 59 to 26, a CFA was conducted on the test half of the dataset. Based on skew and kurtosis, the data did not show any evidence of being non-normally distributed. Models were estimated using maximum likelihood. To improve the fit, we examined the item content and removed eight that seemed less pertinent to the respective subscales. We ran both two and three factor models. The three-factor model was a better fit for the data and made more theoretical sense than the two-factor model (see Table S4 for fit statistics and Table S5 for the final 18-item scale in the Supplemental Material).

The remaining 18 items all had high factor loadings and acceptable internal consistency (see Table S6). The three factors were also correlated with one another, although emotional persistence and perceived longevity were more strongly correlated than the other factors. Taken together, a three-factor model best accounted for the data. These three factors were disdain, emotional persistence, and perceived longevity. *Disdain* accounts for feelings of contempt toward the transgressor and the desire to have nothing to do with him or her, with high scores indicating greater dislike and desire to avoid. *Emotional persistence* evaluates the strength of individuals' ongoing hurt and anger. Finally, *perceived longevity* captures the sense of permanence associated with these ongoing thoughts and emotions.

5.2.5 | EFA versus CFA

In this study, there was a discrepancy between the number of factors identified by the EFA versus the CFA. Discrepancies between EFA (more liberal) and CFA (more conservative) models can be attributed to the greater constraints placed on a CFA model (van Prooijen & Van der Kloot, 2001). This highlights the importance of researcher discretion in identifying appropriate models rather than relying solely on data-driven techniques. In this specific case, Factor 2 from the EFA represents the emotional persistence and perceived longevity factors identified in the CFA. The correlation between these two factors was high ($r = .84$), therefore where a more conservative approach parsed them into two, a more liberal

approach may have identified them as one cohesive factor. Despite their similarities, we believe they are theoretically distinct and therefore it is appropriate to separate them. For instance, it is possible that individuals may presently be experiencing sustained negative emotions as a result of the transgression while, simultaneously, feeling as though they will be able to get over what happened.

Finally, the only aspects of holding a grudge that were linked to participants' personalities were emotional persistence and perceived longevity. Disdain does not appear to be related to the traits measured in this study. Based on these results, individuals who experience higher attachment anxiety, less social power, and greater neuroticism are more likely to experience prolonged negative affect related to the transgression, and to expect that they will be holding the grudge for a long time (see Supplemental Material).

6 | STUDY 3

In Study 3, we conducted a CFA on the final 18 items from the GAM and tested associations between the GAM subscales and measures of forgiveness, revenge, avoidance, and rumination, as well as measures of social power and attachment anxiety. We also tested the relation between an unforgiveness scale (Stackhouse et al., 2018) and the GAM. Unforgiveness has been conceptualized as the opposite of forgiveness (Stackhouse et al., 2018) and therefore is likely related to holding grudges. Unforgiveness captures negative emotions such as resentment, bitterness, hostility, hatred, anger, and fear that victims have toward a transgressor resulting from angrily ruminating about the transgression (Worthington & Scherer, 2004). There is also a cognitive component that involves not being able to forgive and evaluations and reappraisal of transgressors (Stackhouse et al., 2018). Given that unforgiveness has been studied as a catch-all construct, including anger, resentment, grudge, vengeful rumination, and forgiveness (e.g., Seawell et al., 2014; Witvliet et al., 2001), the unique role that each of these psychological mechanisms plays in the social motivation process following a transgression is largely unknown (van Monsjou et al., in press).

6.1 | Method

6.1.1 | Participants

We used the same process described in Studies 1 and 2 to justify our initial large N. 553 participants, recruited from Amazon's Mechanical Turk, took part in this study. In addition, we set the participant rating threshold at 99% as well as provided attention check items to increase confidence that the participants were not bots. As in Studies 1 and 2, portions of the sample were excluded due to evidence of inattention or not following instructions. 52 participants were dropped for responding incorrectly to the attention check items (e.g., "Please select 'Somewhat disagree'"), and 51 were removed for having missing data points. This left a total of 450 participants. There were 235 men and 210 women, one who identified as "other," and one who preferred not to disclose gender. Their average age was 34 years old ($SD = 11.63$). The majority of the sample was White (66%), followed by South Asian (10%), East Asian (7%), African American (6%), mixed ethnicity (5%), Latin American (3%), and other (2%).

6.1.2 | Materials

We used the same scales as in Study 2, except for social desirability, trait apology, and the Big Five, and all items were rated using the same seven-point scale (1 = *Strongly disagree* to 7 = *Strongly agree*).

Transgression: The transgression stimulus was the same as Studies 1 and 2. Of the transgression recalled, 145 reported that the transgressor was a friend (32%), 107 participants reported that the transgressor was a family member (24%), 98 a romantic partner (22%), 43 reported a coworker or boss (14%), 17 an acquaintance (4%), and 16 a stranger (4%). Most participants (*n* = 204; 45%) said that the transgression had taken place within the past year, with 31% of participants (*n* = 138) reporting a transgression that had happened more than 3 years ago.

Grudge items: Participants responded to the 18 grudge items retained from Study 2.

Unforgiveness: The UFM measures three aspects of unforgiveness: cognitive-evaluative, emotional-ruminative, and offender reconstrual (Stackhouse et al., 2018). The cognitive-evaluative subscale contains four items, for instance "I have no desire to forgive this person" (original α = .84–.90). The emotional-ruminative subscale has six items, such as "I continue to feel hurt by what happened" (original α = .84–.85). Finally, the offender reconstrual subscale consists of three items, for example "This event changed the way I see this person" (original α = .74–.83).

Big Five Personality traits: Because the internal consistency of the BFI-S, which measured the Big Five personality traits in Study 2, was poor for some subscales, we decided to use a different measure in this study. This questionnaire assessed personality traits with 16 adjectives (Herzberg & Brahler, 2006). Four measured neuroticism (such as anxious and easily upset; original α = .67) and conscientiousness (e.g., self-disciplined; original α = .74), three measured extraversion (e.g., reserved, quiet – reverse scored; original α = .69) and openness (e.g., complex; original α = .57), and two measured agreeableness (e.g., sympathetic, warm; original α = .66).

6.2 | Results and discussion

A CFA was conducted in Study 3 on a unique dataset to corroborate the results from Study 2. There was no evidence of nonnormality based on each individual item's skew and kurtosis (skew <1.07; kurtosis <1.22). We estimated all models using maximum likelihood. As expected, the three-factor model had acceptable fit, with three of the four fit statistics indicating a good fit. The RMSEA value was somewhat higher than desired (0.09, CI [0.08, 0.10]), potentially suggesting that the model was too complex. In light of this, we also tested a two-factor model, combining the emotional persistence and longevity subscales into one factor. This model did not fit the data well (see Table S8). Overall, consistent with Study 2, the three-factor model fit the data best (see Figure S1). All items had high factor loadings and acceptable internal consistency and were positively correlated with one another, although emotional persistence and longevity were the most strongly related (see Table S9).

We conducted additional factor analyses incorporating the UFM items and the GAM items to compare and differentiate the constructs. We started with an EFA to determine how the items would load in relation to each other. We determined that a three-factor solution made the most sense for the data, and observed, similar to the original EFAs, that the GAM items loaded on two of the factors that were separated into subscales for conceptual clarity. The UFM items

loaded on 3 of the factors. More specifically, the first factor incorporated the Disdain subscale of the GAM in addition to three items from the UFM Offender Reconstrual subscale. The second factor incorporated both the Emotional Persistence and Longevity subscales of the GAM and the Emotional-Ruminative subscale of the UFM. The third factor was the Cognitive-Evaluative subscale of the UFM, of which none of the GAM items loaded on. Two UFM items did not load on any of the factors.

Next, we ran two CFAs on the data—one mimicking the factor structure identified by this EFA and the other to replicate the actual subscales of the GAM and UFM in one factor analysis. As a result, we specified a three-factor model and a six-factor model. When comparing the fit statistics, the six-factor model, which tested the reliability of the confirmed factor structure and supported the distinction of the GAM and UFM subscales, was a somewhat better fit (TLI = 0.90, CFI = 0.91, RMSEA = 0.07, SRMR = 0.08) than the three-factor model (TLI = 0.87, CFI = 0.87, RMSEA = 0.08, SRMR = 0.08).

Despite using a different measure of the Big Five, we replicated the three significant relationships that were found in Study 2, this time using a scale with better psychometric properties. Much like Study 2, aside from forgivingness and vengefulness, personality traits did not play an important role in participants' feelings of disdain for the transgressor, nor the expectation that they will be holding the grudge for a long time. In contrast, greater attachment anxiety and neuroticism, and less openness predicted prolonged negative emotions as a result of the transgression (see Supplementary Material).

7 | GENERAL DISCUSSION

The purpose of this set of studies was to develop and validate a self-report measure of grudge holding, the GAM. Rooted in this thematic analysis (van Monsjou et al., 2021), we conducted three studies that used exploratory factor analyses to reduce the original list of items down to only the best exemplars. Subsequent confirmatory factor analyses determined that, for the sake of measurement, there are three primary components of holding a grudge: feelings of disdain toward the transgressor (disdain), persistent negative emotion derived from the transgression (emotional persistence), and the perception that one will not be able to let go of what happened (perceived longevity).

All three subscales of the GAM were positively correlated with one another, although emotional persistence and longevity were more strongly related than disdain and emotional persistence or disdain and perceived longevity. This makes sense theoretically. Continuing to experience negative emotions about a specific incident should affect whether individuals feel like they will ever be able to move past the transgression. In contrast, people can feel disdain for a transgressor and not have it affect their quality of life. In turn, if they are not as emotionally affected, they should be less likely than those who are to feel as though they will ever be able to move on.

7.1 | Holding a grudge and other post-transgression responses

In addition to creating the GAM, we wanted to determine how holding a grudge relates to other post-transgression responses, namely forgiveness, desiring vengeance, avoiding transgressors, ruminating about the offense, and unforgiveness. Across two studies we found that, as expected,

greater disdain, emotional persistence, and perceived longevity were associated with less forgiveness. Disdain was the most strongly related aspect. This implies that, of the three aspects of holding a grudge, feeling disdain toward the transgressor was the main factor relating to why individuals did not forgive. However, holding a grudge and forgiving do not appear to be opposite ends of a unidimensional construct given that the correlations between emotional persistence and longevity were weak-to-moderate. This aligns with what van Monsjou et al. (2021) found in their thematic analysis. Forgiveness was not a prominent theme in their responses. Instead, participants focused on letting go of the grudge, suggesting that, although related, a prime distinction between holding a grudge and forgiving is the absence of negative, versus the presence of positive, thoughts and emotions.

Interestingly, all three factors were moderately related to seeking revenge. The lack of strong association between these two post-transgression responses is evidence that holding a grudge and seeking revenge are not the same thing. In fact, supporting the results from van Monsjou et al. (2021), many participants who scored high on the GAM did not score high on seeking vengeance.

Ruminating about the transgression, while positively correlated with all three grudge aspects, was much more strongly related to emotional persistence and perceived longevity. This makes sense, given that rumination occurs over time. Given that this study was non-experimental, it cannot establish causal direction, but it is likely the case that ruminating about what happened is an important factor in experiencing persistent negative affect and feeling as though one will never be able to move on.

The desire to have nothing to do with the transgressor was a component of the disdain subscale, therefore it makes sense that avoidance and disdain were closely related. However, it seems as if victims still being affected emotionally and feeling that they will be affected indefinitely do not necessarily imply a strong desire to avoid transgressors. Because it is not always feasible to avoid certain people, it could be the case that participants' relationships to transgressors, such as being family members or coworkers, makes it difficult to avoid them, thereby underrepresenting the strength of the relationship.

Much like revenge and avoidance, unforgiveness was related to, yet distinct from, holding a grudge. Our findings also show that there are similar aspects to both grudge and unforgiveness constructs associated with the unforgiveness measure (UFM), such as altered views of the transgressor and prolonged negative affect, however, there were also notable differences (see Supplemental Material for additional analyses). One aspect of unforgiveness that is not directly part of holding a grudge is lack of desire or willingness to forgive. van Monsjou et al. (2021) observed that many individuals wish they could in fact forgive, or at least let go of the grudge. Therefore, although related to both emotional persistence and longevity, desire not to forgive is not a universal characteristic of holding a grudge. Overall, the UFM appears to evaluate some aspects of holding a grudge. However, given that there are many forms that unforgiveness can take, the GAM offers an instrument that is targeted specifically toward holding grudges rather than unforgiveness as a general concept.

7.2 | Holding a grudge and individual differences

The different aspects of holding a grudge were not strongly related to any of the personality traits measured in this study that were not directly related to post-transgression responding. However, when it came to personality traits that are indirectly related to conflict resolution,

emotional persistence was the most strongly related grudge aspect, compared to disdain and perceived longevity. This means that certain personality traits do not make one more inclined to feel disdain toward the transgressor, nor feel as though one will never be able to move past the transgression.

7.3 | Limitations and research agenda

Insofar as the GAM measures specific grudges at one point in time, it only captures the grudge in its current state. Holding a grudge is something that is often in flux based on a variety of factors, such as whether it has recently been triggered, or whether it is in a period of latency. These temporal changes are difficult to assess with questionnaires, and it should be noted that this final scale is useful for quickly measuring the basic aspects of holding a grudge. However, administering this scale over different periods of time using a daily diary method could be useful to examine how thoughts and feelings change over the social motivation process following transgressions and the implications of grudges for the resolution of conflict. This could be a way to determine the accuracy of individuals' perceptions of their ability to move on.

Because the GAM targets specific transgressions, it is to be used as a state measure of grudge holding. As a result, it provides limited insight into dispositional grudges and how they differ in content and thought patterns. Although possible to convert this current scale into a trait measure by translating the items into those that inquire about general tendencies, such as "When people do things to hurt me, I tend to think poorly of them," it may be the case that the important aspects of grudge holding at the trait level are different than those at the state level.

Developing the GAM is a significant first step toward measuring holding grudges and allows for several novel future research directions relevant to relationship scholars. First, research concerning the ongoing process of establishing the psychometric properties of the GAM would be valuable. This research should focus on further tests of reliability and validity, state and trait measures of grudges, and further tests to establish its unique place among victims' post-transgression response options. Second, using the GAM to test van Monsjou et al.'s (2021) theorizing about grudge holding, how grudges develop and are held within relationships, the role of intrapersonal (e.g., personality, social cognition), interpersonal (e.g., apology, power), and relationship factors (e.g., attachment, interdependency, value) would be an important next step. Third, in addition to understanding how victims of transgressions hold grudges within relationships, it will be important to understand why (e.g., function, self-protection, partner and relationship regulation, conflict resolution) and when they hold them (e.g., when revenge escalates conflict, when forgiveness facilitates future transgressions). For instance, the long-term effect of holding grudges seemed to be negative yet grudges also have the potential to be functional and protective (Struthers et al., 2019). Determining whether this is always the case, or if there are circumstances when holding a grudge may be functional or beneficial, would prove interesting. Finally, the effect of grudges on victims, partners, and relationship quality and maintenance would help relationships scholars to develop a more nuanced understanding of the social motivation process following interpersonal transgressions.

8 | SUMMARY

Holding a grudge is a complex and multi-faceted occurrence. Despite being commonplace, grudges are rarely discussed, and much of our knowledge comes from personal experience or

anecdotes. One hurdle limiting evidence-based knowledge about grudge holding is the lack of a psychometrically sound measure. Based on van Monsjou et al.'s (2021) thematic analysis of individuals' experiences with holding grudges and subsequent theory about the components and processes involved, we developed an 18-item self-report measure. The GAM quantitatively evaluates the extent to which individuals are experiencing three independent subcomponents of holding a grudge: level of disdain for transgressors, including disliking them and not wanting anything to do with them (disdain); whether or not they are still affected emotionally by the transgression (emotional persistence); and if they think they will ever be able to move on from what happened (perceived longevity). Together these three subscales are a valid and reliable way to quickly and simply measure the extent to which individuals are holding a grudge.

DATA AVAILABILITY STATEMENT

The materials for Studies 1-3 and supplemental material providing a fuller description of our scale development strategy and analysis are available on Open Science Framework (OSF) https://osf.io/wtscr/?view_only=8574df30ca5547efbbfb3a33d361a70e. struther@yorku.ca.

ENDNOTE

[1] The materials and data for the three studies summarized in this article are posted on OSF; however, the studies were not preregistered. The process of scale development is complex involving theory, conceptual definition, methods, statistics, and interpretation to distill a psychometrically sound and practical measure. Our overall approach was to engage in a bottom-up process beginning with qualitative methods to define the construct and develop some theoretical ideas, generate a comprehensive list of items reflecting grudge aspects, and engaging in quantitative methods (mostly EFA and CFA) to winnow the common factors and respective items. A detailed description of our decision process concerning the final number of factors is outlined in our Supplementary Material.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

APPENDIX A: GRUDGE ASPECT MEASURE

Instructions: You are going to be provided with a variety of statements about how you feel about the person and what happened. Please indicate how much you agree or disagree with each one (rated from 1—*Strongly disagree* to 7—*Strongly agree*).

    Disdain:

1. I'll never like this person again.
2. I want nothing to do with this person.
3. Having this person in my life is not a good thing.
4. If I could cut this person out of my life, I would.
5. I think poorly of this person now.
6. I would never be able to trust this person again.
7. I've realized that this person is not a good person.
8. This person is not worth my time or energy.

    Emotional persistence:

9. I'm still hurt by what happened.
10. I feel hurt when I'm reminded of what happened.
11. Reminders of what happened reignite my anger.
12. Being reminded of what happened makes it hard to get over.
13. I'm still angry about what happened.

    Perceived longevity:

14. I do not know how to get over this.
15. I feel like this will always be with me.
16. I cannot see myself letting go of this anytime soon.
17. I do not know if I'll be able to move on from this.
18. What happened will always bother me.