



Imagery rescripting of interpersonal transgressions: Forgiveness, revenge, and commitment in the victim-transgressor relationship

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ABSTRACT

Imagery Rescripting (ImRs) is a well-established psychotherapeutic intervention for treating aversive memories, such as those related to interpersonal transgressions. However, questions remain regarding the optimal implementation of ImRs, particularly concerning which components are most effective. In this experimental study ($N = 271$), we examined whether guiding participants to imagine forgiving versus taking revenge on a transgressor would differentially affect key emotional and cognitive outcomes. Additionally, we investigated the moderating role of the initial victim-transgressor commitment. Participants were instructed to imagine being the victims in a fictional interpersonal transgression. The imagined transgressor was a person with whom they had either a weak or strong commitment. Participants then engaged in an audio-guided ImRs session oriented toward either forgiveness or revenge, before indicating their aggressive inclinations, positive and negative affect, justice-related satisfaction, and feelings of empowerment. Results indicated that forgiveness-oriented ImRs led to lower aggressive inclinations and negative affect, as well as higher justice-related satisfaction, compared to revenge-oriented ImRs. No differences emerged between conditions in positive affect and feelings of empowerment. Moreover, the effectiveness of both ImRs approaches was independent of the victim-transgressor commitment. These findings suggest that forgiveness-oriented ImRs may offer a promising approach to reduce the emotional consequences of transgressions, with a reduced risk of increasing aggressive inclinations among victims. This highlights the potential value of incorporating forgiveness into ImRs protocols. However, given the fictional nature of the transgression and the standardized, non-clinical setting, further research is needed to evaluate the clinical applicability of these findings.

Imagery rescripting (ImRs) is a clinical intervention designed to reduce distressing intrusive images, negative emotions, and dysfunctional beliefs (Holmes et al., 2007). It helps individuals transform aversive mental images (e.g., resulting from distressing experiences) into more positive or, at the very least, less distressing and more functional ones. During ImRs, individuals are guided to vividly recall distressing images or memories and then modify these narratives by introducing more benign or positive elements that address unmet psychological needs (Arntz, 2012). Although ImRs is typically integrated within broader therapeutic approaches, such as schema therapy, it has also been shown to be effective as a standalone treatment. ImRs has demonstrated efficacy across a range of psychological disorders, including posttraumatic stress disorder (PTSD), anxiety disorders, obsessive-compulsive disorder, personality disorders, social anxiety, and

depression (Kip et al., 2023; Kroener et al., 2023). Especially in the treatment of PTSD, ImRs is now considered one of the most effective approaches (Schäfer et al., 2019) and is recommended in the national treatment guidelines in the Netherlands (GGZ Standaarden, 2020).

Despite the robust evidence for the efficacy of ImRs, several questions remain open to debate, particularly regarding which components of ImRs are most beneficial and which psychological mechanisms underlie its effects (Bosch & Arntz, 2023). One key proposed mechanism is an increase in mastery, which refers to a sense of control or power over a situation or another person (Bosch & Arntz, 2023; Kunze et al., 2019). This sense of power, sometimes also referred to as empowerment (Twardawski et al., 2021), is considered a key contributor to the benefits of ImRs (Siegesleitner et al., 2020). Therefore, components of ImRs that effectively enhance individuals' feelings of mastery or empowerment

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could be particularly beneficial.

In the present research, we compare two conceptually distinct approaches within ImRs, both intended to increase victims' feelings of empowerment: imagining taking revenge on the transgressor versus imagining forgiving them. Moreover, we investigate whether the effectiveness of these approaches depends on the nature of the victim-transgressor relationship—specifically, the level of psychological commitment. To test these questions under controlled conditions, we conducted an experimental study in which participants imagined being the victim of a fictional interpersonal transgression. They then completed an audio-guided ImRs session, followed by self-report measures assessing aggression, affect, justice-related satisfaction, and empowerment.

1. The effects of revenge in ImRs

Research shows that taking revenge on a transgressor can increase victims' feelings of power and control (Fischer et al., 2022; Strelan et al., 2020). In the context of ImRs, however, studies indicate that imagining revenge does not necessarily contribute to positive emotional outcomes (Seebauer et al., 2014). For example, Twardawski, Gollwitzer, et al. (2024) instructed participants to adopt the perspective of a victim of an interpersonal offense. Participants then underwent one of several treatments, including ImRs sessions with or without a revenge component. Afterward, they reported their positive and negative affect, feelings of empowerment, and justice-related satisfaction—a construct that reflects a combination of deservingness construals (i.e., everyone got what they deserved), psychological closure (i.e., readiness to move on), and emotional satisfaction (Funk et al., 2014; Gollwitzer et al., 2011). Crucially, the findings indicated that imagining revenge as part of ImRs did not add to the positive effects of ImRs across these measures.

This research, however, leaves several questions unanswered and points to a field that warrants further investigation. For example, it did not examine whether imagining revenge against the transgressor affects victims on other critical outcomes, especially their aggressive inclinations toward the transgressor (H. Watson et al., 2017). Social psychological theories suggest that imagining aggressive revenge could reinforce related behavioral scripts and, consequently, lead to increased aggression levels (Huesmann & Eron, 1984). Moreover, positive emotions experienced during revenge imagery could amplify this effect (Anderson & Bushman, 2018). Yet, empirical findings regarding the impact of revenge imagery on subsequent aggression levels are mixed. Seebauer et al. (2014), for instance, had participants watch a film depicting disturbing interactions (e.g., physical violence against helpless victims), followed by ImRs sessions either with or without violent revenge. Measures of aggressive emotional states (e.g., anger, rage) revealed no significant differences between the two conditions. However, in this study, participants adopted the role of spectators rather than victims. In contrast, experimental research requiring participants to adopt the victim's perspective suggests that engaging in aggressive imagery can indeed heighten aggressive inclinations (Twardawski, Angerl, & Lobbestael, 2024). Therefore, current evidence on the relationship between revenge imagery and aggressive inclinations remains inconclusive, highlighting the need for further research.

2. Forgiveness as an alternative in ImRs

Moreover, past research has rarely considered alternative responses to victimization that may offer victims a way to regain a sense of mastery and empowerment. One such alternative is the act of forgiving the transgressor (Gollwitzer & Okimoto, 2021). Forgiveness is defined as a “set of motivational changes whereby one becomes (a) decreasingly motivated to retaliate against an offending relationship partner; (b) decreasingly motivated to maintain estrangement from the offender; and (c) increasingly motivated by conciliation and goodwill for the offender, despite the offender's hurtful actions” (Karremans et al., 2003,

p. 1012). It is, thus, distinct from condoning, excusing, forgetting, justifying, or calming down after a transgression (H. Watson et al., 2021). Forgiveness typically unfolds in multiple steps, beginning with the recognition that a moral transgression has occurred and the acknowledgment of one's legitimate anger (Worthington, 2001). This is followed by an active effort to process and ultimately release this anger or resentment (Enright & Fitzgibbons, 2000).

Research indicates that forgiving the transgressor can be just as empowering as taking revenge (Strelan et al., 2020), as it restores status and power to the victim through a heightened sense of morality (Wenzel & Okimoto, 2010). Additionally, forgiveness has been associated with numerous psychological and physical benefits for victims, including improved health outcomes (e.g., lower blood pressure, reduced stress) and enhanced psychological well-being, such as increased satisfaction, self-esteem, and positive affect (Bono et al., 2008; Hannon et al., 2012; Karremans et al., 2003; Witvliet et al., 2001). These findings suggest that forgiveness may be a valuable component in ImRs interventions.

Although literature on the inclusion of forgiveness within ImRs is relatively scarce, initial evidence suggests it holds promise. Specifically, H. Watson et al. (2016) found that victims of bullying who engaged in forgiveness-oriented ImRs reported greater reductions in negative affect compared to those who engaged in revenge-oriented ImRs. Conversely, revenge-oriented ImRs led to reductions in empowerment, a result that was not observed in the forgiveness-oriented ImRs condition. Building on this literature, the present study aims to compare the effects of forgiveness- versus revenge-oriented ImRs on aggressive inclinations, positive and negative affect, justice-related satisfaction, and empowerment.

3. The role of victim-transgressor commitment

Additionally, the present study introduces a factor that has received limited attention in prior ImRs research: the nature of the initial victim-transgressor relationship, more specifically, the level of psychological commitment between the victim and the transgressor. Commitment encompasses “the intention to persist in the relationship, a long-term orientation, and feelings of psychological attachment” to the other person (Kluwer & Karremans, 2009, p. 1300). Understanding the role of this aspect for the implementation of ImRs treatments is highly relevant, as many victimization experiences do occur within (close) relationships, ranging from bullying experiences (Waasdorp & Bradshaw, 2015) to sexual victimization (Siddique, 2016).

Importantly, there is reason to believe that victims have different needs depending on the nature of the initial victim-transgressor relationship—something that should translate to the ImRs treatment (and its components). For example, the psychological meaning of victimization experiences fundamentally differs depending on whether the transgressor is a close acquaintance or an unrelated individual (Okimoto et al., 2010; Okimoto & Wenzel, 2010; Wenzel & Okimoto, 2012): Victimization by a close other raises concerns about the values presumed to be shared between the victim and the transgressor (and the broader community). In contrast, victimization by a stranger tends to raise concerns about status and power, as it is perceived as the transgressor illegitimately asserting dominance over the victim (and the broader community).

For the role of forgiveness and revenge, research indicates that their impact on victims depends on the victim-transgressor commitment (Karremans et al., 2003; Kluwer & Karremans, 2009). In a study involving individuals who were betrayed by their partners, Kluwer and Karremans (2009) found that victims' revenge (and avoidance) motivation was negatively related to their positive affect and positively related to their negative affect. However, this was true only in relationships characterized by strong commitment. Whereas, in relationships with weak commitment, revenge motivation was unrelated to victims' affect. The authors argued that revenge in strong-commitment relationships is inconsistent with the long-term goal of maintaining

the relationship. Conversely, reduced revenge motivation in strong-commitment relationships may help preserve the relationship and contributes to an improved affective state.

Additionally, in one of several studies, Karremans and colleagues (2003) experimentally manipulated both the victim-transgressor commitment (weak versus strong) and forgiveness (versus no forgiveness) imagination. Specifically, participants were asked to think of someone to whom they felt either a strong or a weak level of commitment. They were then instructed to imagine having a serious conflict with this individual and to consider that they had either forgiven them or not. Subsequently, participants' psychological well-being (i.e., satisfaction, positive and negative affect, and state self-esteem) was assessed. The results revealed that forgiveness led to greater psychological well-being (e.g., increased satisfaction and positive affect) when commitment was strong, whereas it had little to no effect on well-being when commitment was weak. The authors posited that forgiveness serves to repair relationships and aligns with the goal of maintaining a (strong commitment) relationship (McCullough et al., 1997). By contrast, failing to forgive someone to whom one feels a strong commitment leads to psychological tension (i.e., a psychological state of discomfort due to conflicting cognitions and emotions), which in turn reduces satisfaction and well-being.

Taken together, these findings highlight the importance of considering the relational context when evaluating the effects of ImRs interventions. Herein, we examine how varying levels of psychological commitment between the victim and transgressor influence the effectiveness of forgiveness-oriented versus revenge-oriented ImRs. We suggest that forgiveness (as opposed to revenge) may have more beneficial effects on victims (i.e., less negative affect, more positive affect, and greater justice-related satisfaction) in strong (versus weak) commitment relationships.

4. The present research

The present study addresses several gaps in the existing literature. First, we build on the limited body of research examining the effects of ImRs that incorporate a revenge component on victims' aggressive inclinations following ImRs. Based on recent findings, we hypothesize that:

Hypothesis 1. Forgiveness-oriented ImRs leads to lower aggressive inclinations in victims compared to revenge-oriented ImRs.

Second, we investigate how forgiveness- versus revenge-oriented ImRs affect victims' emotional and cognitive outcomes, including positive and negative affect as well as justice-related satisfaction. Drawing on prior work, we predict that forgiveness-oriented ImRs yields more positive outcomes (i.e., increased positive affect and satisfaction, decreased negative affect) compared to revenge-oriented ImRs. However, we also propose that these effects depend on the level of commitment (strong vs. weak) in the victim-transgressor relationship, with stronger effects emerging in strong-commitment scenarios. Specifically, we hypothesize:

Hypothesis 2. Forgiveness-oriented ImRs leads to higher positive affect in victims compared to revenge-oriented ImRs.

Hypothesis 3. The commitment between victim and transgressor moderates the effects of forgiveness- vs. revenge-oriented ImRs on the positive affect of victims, with a stronger effect of forgiveness-oriented ImRs (compared to revenge-oriented ImRs) in situations of strong commitment as compared to situations of weak commitment.

Hypothesis 4. Forgiveness-oriented ImRs leads to lower negative affect in victims compared to revenge-oriented ImRs.

Hypothesis 5. The commitment between victim and transgressor moderates the effects of forgiveness- vs. revenge-oriented ImRs on the negative affect of victims, with a stronger effect of forgiveness-oriented

ImRs (compared to revenge-oriented ImRs) in situations of strong commitment as compared to situations of weak commitment.

Hypothesis 6. Forgiveness-oriented ImRs leads to higher justice-related satisfaction in victims compared to revenge-oriented ImRs.

Hypothesis 7. The commitment between victim and transgressor moderates the effects of forgiveness- vs. revenge-oriented ImRs on the justice-related satisfaction of victims, with a stronger effect of forgiveness-oriented ImRs (compared to revenge-oriented ImRs) in situations of strong commitment as compared to situations of weak commitment.

We tested these hypotheses by conducting a 2 (ImRs-orientation: forgiveness vs. revenge) \times 2 (victim-transgressor commitment: strong vs. weak) between-subjects experiment with random assignment to conditions. Specifically, we instructed participants to imagine being the victim of an interpersonal transgression (i.e., being ridiculed by a person in front of others). The imagined transgressor was either a person with whom participants shared a weak or strong psychological commitment. They then engaged in an audio-guided ImRs oriented towards either forgiveness or revenge, followed by measures of aggressive inclinations, positive and negative affect, justice-related satisfaction, and feelings of empowerment using self-report questionnaires. Notably, we did not formulate a specific hypothesis regarding empowerment, as we would expect both forgiveness and revenge to contribute to feelings of empowerment (Strelan et al., 2020), making it difficult to derive a hypothesis on any potential differences.

The experiment was pre-registered (<https://aspredicted.org/jdk6-44mr.pdf>).¹ Materials, data, codebook, results of exploratory analyses, and analysis script are available on the Open Science Framework (OSF, <https://osf.io/73shw/>). We report how we determined our sample size, data exclusions, all manipulations, and measures. This research project received ethical approval from a local Institutional Review Board (LMU Munich) and has been conducted in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments. All participants gave informed consent and were treated in accordance with the ethical guidelines of the German Psychological Society.

5. Method

5.1. Sample

We conducted an a priori power analysis using G*Power (Faul et al., 2009) for an ANOVA with fixed, special and main effects. Our goal was to achieve a power of $1 - \beta = .90$ to detect a small to medium-sized effect of $f = .175$, given a conventional $\alpha = .05$ (number of groups = 4). This analysis yielded a target sample size of $N = 346$ participants. Additionally, we adopted a pragmatic approach and decided to collect data until reaching $N = 346$ valid cases (after excluding participants based on pre-registered criteria, see below), or until $N \geq 259$ if data collection extended beyond June 19, 2024, thereby ensuring a power of $1 - \beta = .80$. We closely monitored both sample size and participation validity throughout the data collection period but did not conduct any analyses until data collection was completed.

Participants had to be at least 18 years old, proficient in German, and

¹ Hypotheses 2–6 were pre-registered. However, changes were made to the order and concrete formulation of hypotheses (i.e., we summarized some of the hypotheses from the pre-registration). Specifically, Hypothesis 3 from the article corresponds to Hypotheses 3, 3a, and 3b from the pre-registration. Hypothesis 4 from the article corresponds to Hypothesis 2 from the pre-registration. Hypothesis 5 from the article corresponds to Hypotheses 4, 4a, and 4b from the pre-registration. Importantly, the general nature of the hypotheses remains untouched and no other hypotheses were pre-registered (i.e., we test and report results for all pre-registered hypotheses).

able to participate in an environment conducive to good audio perception (e.g., by using headphones). We recruited participants through personal approach, mailing lists, social media, SurveyCircle (SurveyCircle, 2024), and a research participation platform used by registered students for course credit. As an incentive, participants received either course credit or a chance to win gift vouchers. By June 19, 2024, we had not reached the initial target sample size of $N = 346$ valid cases and, thus, continued collecting data until exceeding a sample size of $N = 259$. After finishing data collection, 452 participants began the experiment, of whom 325 (72 %) completed it. As pre-registered, we excluded 52 participants who answered any of the attention check questions (see below) incorrectly and an additional two participants who indicated that they did not participate attentively (Meade & Craig, 2012). In total, our final sample consisted of $N = 271$ participants ($n = 189$ female; 78 male; 4 other), aged 18–76 years ($M = 32.59$, $SD = 14.25$).

5.2. Procedure

The study was conducted in German and administered online via SoSciSurvey (Leiner, 2024). After providing informed consent and demographic information, participants were randomly assigned to one of the experimental conditions. Specifically, participants were asked to think of a person from their personal environment. The level of commitment to this person was manipulated following prior research (Karremans et al., 2003). The instructions for the strong [weak] commitment conditions were as follows:

“At the beginning of the study, we ask you to think of a specific person from your personal environment. It is important that you choose a person with whom you feel that both you and this person have a strong [weak] sense of commitment to each other. By commitment, we mean that you feel a sense of connection to each other and have the intention and desire to maintain and strengthen the relationship. It is important that you do not think of an intimate partner or a family member.”

We excluded intimate partners and family members because these relationships differ qualitatively from other high-commitment bonds. In particular, family ties are often non-voluntary and can involve additional relational dynamics and obligations that could confound the psychological effects of commitment. This decision aligns with prior research (Karremans et al., 2003). Participants then indicated the initials and gender of the chosen person, as these details were later integrated into instructions and item formulations throughout the study. The success of the commitment manipulation was assessed with a manipulation check.

Next, we instructed participants to vividly imagine a fictional situation involving the previously indicated person (hereafter referred to as the “transgressor”). In this situation, both the participant and the transgressor were invited to a birthday party of a mutual friend. To make a personal gesture, the participant decided to bake a cake instead of buying a gift for the friend. However, things did not go as planned during the baking process: the cake failed. Unsure of what to do, the participant decided to call the transgressor for advice. The transgressor appeared supportive and encouraged them to bring the cake anyway, emphasizing that it was the gesture that counted. The participant followed this suggestion and brought the cake to the party, attempting to place it inconspicuously among the other cakes to avoid drawing too much attention. However, while doing so, the transgressor passed by and seized the opportunity to mock the participant with loud disparaging remarks about the cake. In an ironic tone, they insisted on trying a piece of the cake, only to visibly grimace and make another disparaging comment after taking a bite. Everyone else noticed that the participant had brought a failed cake. After the participant addressed the transgressor about this behavior, they made additional sarcastic and hurtful comments about the cake and the participant. These comments were presented as audio recordings to participants to help them vividly imagine how the transgressor would ridicule them at the party.

Depending on the indicated gender of the transgressor in the beginning, an audio version featuring either a female or male voice was presented.

Following this imagination task, participants reported their emotions and perceptions of the induced interpersonal transgression.² They then received audio-guided ImRs instructions lasting approximately 6 min. Although brief, the session included the core phases of ImRs: (1) activation of the distressing image, (2) emotional and cognitive intervention, and (3) reimagination of the event. Because the transgression had just been introduced and was standardized across participants (i.e., not based on an autobiographical memory), the protocol focused particularly on the intervention phase, while the other two phases were kept relatively brief. This approach is consistent with previous experimental ImRs studies using similarly brief protocols (Seebauer et al., 2014; Twardawski, Gollwitzer, et al., 2024; H. Watson et al., 2016).

In the beginning of the ImRs, participants were instructed about the general procedure of the imagination task. We advised participants to close their eyes during the task and fully immerse themselves in the situation using all their senses. Then, participants were guided to revisit the transgression situation in as much detail as possible. They revisited the transgression scene through a brief description and were asked to reflect on how they felt during the event (e.g. “How do you feel during the situation?”).

The next part of the ImRs varied between conditions, similar to the procedure described by H. Watson et al. (2016). In the *forgiveness-oriented ImRs condition*, participants were guided through several phases of forgiveness based on the framework by Enright and Fitzgibbons (2000). Specifically, participants were instructed to uncover the extent of the harm caused and confront the associated feelings, decide to forgive the transgressor, gain perspective and empathy for the transgressor as a rationale for offering forgiveness, and find meaning in their experiences. In the *revenge-oriented ImRs condition*, the script mirrored these phases by exploring the extent of the harm caused, deciding to take revenge, gaining perspective on why revenge is an appropriate response, and finding meaning in the experience. Participants were specifically instructed to imagine any form of vengeance they desired, envisioning a scenario in which they retaliated against the transgressor for the wrong done to them. Both conditions were matched as closely as possible in their structure, addressing the same topics and ideas but from different perspectives (as suggested by H. Watson et al., 2016). Participants were then asked to consider how the imagined response (forgiveness or revenge) related to their current situation and to reimagine the ending of the birthday party scene accordingly. Throughout the ImRs, the scripts were structured to guide participants through the key phases of forgiveness or revenge, while allowing for autonomy in generating their own images. Although the overall structure and emotional tone were standardized, participants were not given explicit instructions on what to imagine. Instead, they were encouraged to generate their own imagery content (e.g., what they or the transgressor said or did), consistent with the assigned condition.

After completing the audio-guided ImRs session, participants responded to measures of justice-related satisfaction and positive and negative affect. The order of these variables was randomized. Then, we measured participants’ aggressive inclinations and feelings of

² These items were included as control variables that are not directly relevant to the primary aims of the present research. However, one item assessed participants’ anger following the imagined transgression. We conducted exploratory regression analyses including anger, ImRs-orientation, and their interaction as predictors of the dependent variables. The results showed that higher anger levels were associated with increased aggressive inclinations and negative affect, and decreased justice-related satisfaction. Moreover, we observed a significant interaction between anger and ImRs-orientation predicting positive affect. Due to the exploratory nature of these analyses and the use of a single-item anger measure, we report and discuss the full results in the supplementary materials on OSF.

empowerment. Furthermore, we measured participants' perceived value consensus (i.e., the perception that individuals in their social environment share similar values; Wenzel & Okimoto, 2010) using four items for exploratory analyses (this measure, however, is not relevant to the present research and will not be discussed further). The order of the measures for aggressive inclinations, empowerment, and value consensus was randomized.

Finally, participants completed three simple attention check items related to the content of the imagination task. These checks served to ensure that participants had listened to and engaged with the audio content. In addition, we included a conscientiousness item asking whether they had participated attentively, as recommended in the literature ("use-me" item; see Meade & Craig, 2012). At the conclusion of the study, participants were thanked and debriefed. The full materials of the experiment are available in the supplementary material on the OSF (<https://osf.io/73shw/>).

5.3. Measures

Unless stated otherwise, all items were rated on a 6-point Likert scale ranging from 1 = "completely disagree" to 6 = "completely agree".

Commitment manipulation check. To assess the success of the commitment manipulation, we adapted four items from the Investment Model Scale (Rusbult et al., 1998). These items captured the three main components of commitment: intention to remain in the relationship, long-term orientation, and emotional attachment. An example item is: "I would be sad if I no longer had contact with [initials] in the future". Internal consistency was high ($\omega_t = .96$).

Positive and Negative Affect. We assessed participants' positive and negative affect using the Positive and Negative Affect Schedule (PANAS; D. Watson et al., 1988). The measure comprises 10 items each for positive ($\omega_t = .86$) and negative affect ($\omega_t = .88$). Responses were given on a 5-point Likert scale ranging from 1 = "not at all" to 5 = "extremely".

Justice-Related Satisfaction. We assessed participants' justice-related satisfaction with 11 items ($\omega_t = .85$; Twardawski et al., 2021). One example item is 'I am now able to turn my mind to something else' and 'I feel disappointed' (reverse-coded)).

Aggressive Inclinations. We measured participants' aggressive inclinations with 12 items ($\omega_t = .88$; Twardawski, Angerl, & Lobbstael, 2024). For example, participants were asked how they would respond if the interpersonal transgression were to occur right now, specifically indicating their agreement with statements such as: "I would verbally attack the person (e.g., contradicting, responding sarcastically, saying mean things, yelling, or insulting them)."

Feelings of Empowerment. We assessed participants' feelings of empowerment with four items ($\omega_t = .85$) extracted from Twardawski et al. (2021). One example item is "I have authority."

5.4. Data analyses

All analyses were conducted using R (version 4.3.2). To assess the success of the commitment manipulation, we first conducted a one-way

independent *t*-test on the commitment manipulation check. To investigate the effects of the experimental manipulations on our key dependent variables—positive affect, negative affect, justice-related satisfaction, aggressive inclinations—we conducted separate 2×2 analyses of variance (ANOVAs) for each dependent variable using the "ez" R package (Lawrence, 2016). We then conducted similar analyses for feelings of empowerment as exploratory variable. In addition to the separate univariate ANOVAs, we conducted an exploratory multivariate analysis of variance (MANOVA) to account for the shared variance among the dependent variables (including empowerment).

6. Results

6.1. Commitment manipulation check

To evaluate the effectiveness of the commitment manipulation, we compared the strong commitment conditions with the weak commitment conditions on our commitment manipulation check measure. Participants in the strong commitment conditions reported considerably higher levels of commitment ($M = 5.44$, $SD = .82$) to the individual they were considering compared to participants in the weak commitment conditions ($M = 3.78$, $SD = 1.68$). This difference was statistically significant and large, $t(204.39) = 10.42$, $p < .001$, $d = 1.25$.

6.2. Main analyses

Descriptive statistics, including overall means, standard deviations, and correlations among all dependent variables, are presented in Table 1. The means and distributions of the dependent variables across each condition are depicted in Fig. 1 and summarized in Table 2. We report the results of our analyses for each dependent variable separately below.

Aggressive Inclinations. As presented in Fig. 1 (upper left panel) and Table 2, aggressive inclinations were considerably higher among participants in the revenge conditions compared to participants in the forgiveness conditions. In line with Hypothesis 1, this difference was supported by a significant main effect of ImRs-orientation, $F(1, 267) = 8.91$, $p = .003$, $\eta^2_G = .032$. The main effect of commitment, $F(1, 267) = 3.05$, $p = .082$, $\eta^2_G = .011$, and the interaction between ImRs-orientation and commitment, $F(1, 267) = 3.58$, $p = .850$, $\eta^2_G < .001$, were not significant.

Positive Affect. As illustrated in Fig. 1 (upper right panel) and Table 2, there were no notable descriptive differences between conditions regarding positive affect, contrasting our Hypotheses 2 and 3. Specifically, we found no significant main effect of the ImRs-orientation, $F(1, 267) = .08$, $p = .780$, $\eta^2_G < .001$, nor of commitment, $F(1, 267) = 1.30$, $p = .255$, $\eta^2_G = .005$. The interaction between ImRs-orientation and commitment was also not significant, $F(1, 267) = .75$, $p = .388$, $\eta^2_G = .002$.

Negative Affect. As shown in Fig. 1 (lower left panel) and Table 2, negative affect was considerably higher among participants in the revenge conditions compared to participants in the forgiveness

Table 1
Means, standard deviations, and correlations of all dependent variables.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Aggressive Inclinations	1.91	.69				
2. Positive Affect	2.59	.73	-.01 [-.13, .11]			
3. Negative Affect	2.29	.83	.26** [.14, .37]	-.22** [-.33, -.10]		
4. Justice-Related Satisfaction	3.03	.89	-.23** [-.34, -.11]	.33** [.22, .43]	-.46** [-.55, -.36]	
5. Empowerment	4.31	1.03	.01 [-.11, .13]	.39** [.28, .48]	-.28** [-.38, -.16]	.28** [.16, .39]

Note. Values in square brackets indicate the 95 % confidence interval for each correlation. *M* = mean; *SD* = standard deviation. * $p < .05$. ** $p < .01$.

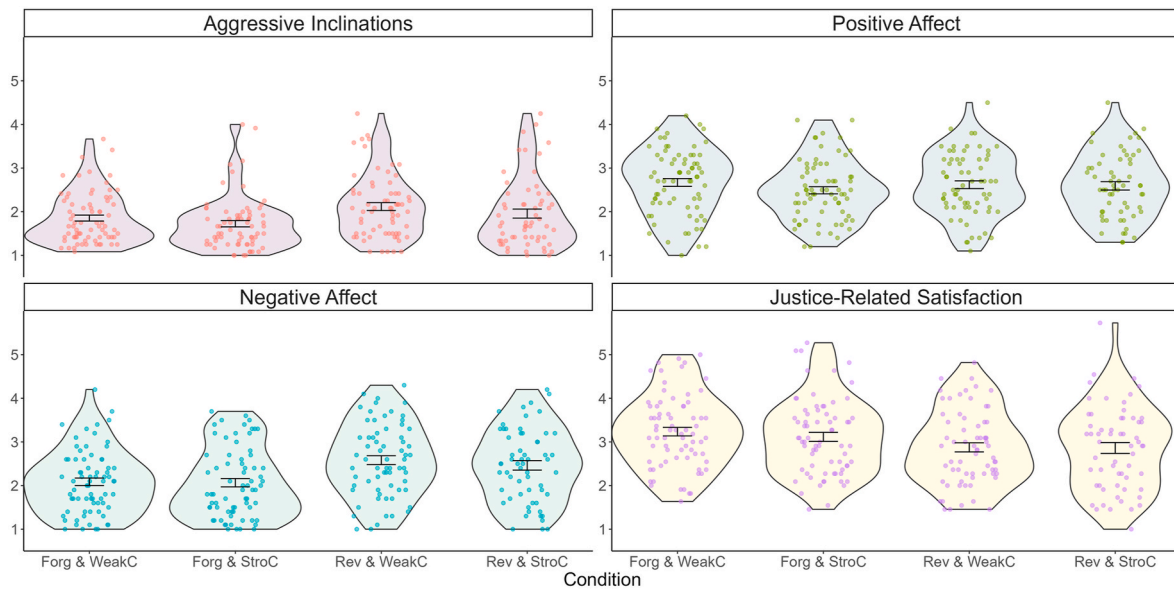


Fig. 1. Means and distributions of all dependent variables for each condition.

Note. Error bars represent one standard error of the mean. Scales for positive and negative affect ranged from 1 to 5. Scales for aggressive inclinations and justice-related satisfaction ranged from 1 to 6. Forg & WeakC = Forgiveness & Weak Commitment; Forg & StroC = Forgiveness & Strong Commitment; Rev & WeakC = Revenge & Weak Commitment; Rev & StroC = Revenge & Strong Commitment.

Table 2

Means and standard deviations of all dependent variables for each condition.

Variable	Forg & WeakC <i>M (SD)</i>	Forg & StroC <i>M (SD)</i>	Rev & WeakC <i>M (SD)</i>	Rev & StroC <i>M (SD)</i>
Aggressive Inclinations	1.85 (.59)	1.74 (.62)	2.12 (.73)	1.95 (.80)
Positive Affect	2.67 (.76)	2.49 (.68)	2.62 (.73)	2.58 (.74)
Negative Affect	2.09 (.73)	2.06 (.79)	2.58 (.83)	2.45 (.84)
Justice-Related Satisfaction	3.24 (.83)	3.12 (.86)	2.88 (.85)	2.85 (.96)
Empowerment	4.25 (.93)	4.29 (.85)	4.36 (1.14)	4.32 (1.22)

Notes. Scales for positive and negative affect ranged from 1 to 5. Scales for aggressive inclinations and justice-related satisfaction ranged from 1 to 6. Forg & WeakC = Forgiveness & Weak Commitment; Forg & StroC = Forgiveness & Strong Commitment; Rev & WeakC = Revenge & Weak Commitment; Rev & StroC = Revenge & Strong Commitment; *M* = mean; *SD* = standard deviation.

conditions. In support of [Hypothesis 4](#), this difference was evidenced by a significant main effect of ImRs-orientation, $F(1, 267) = 21.12, p < .001, \eta^2_G = .073$. However, we did not observe a significant main effect of commitment, $F(1, 267) = .52, p = .472, \eta^2_G = .002$, nor the predicted ([Hypothesis 5](#)) interaction, $F(1, 267) = .25, p = .618, \eta^2_G < .001$.

Justice-Related Satisfaction. As depicted in [Fig. 1](#) (lower right panel) and [Table 2](#), justice-related satisfaction was considerably lower among participants in the revenge conditions compared to participants in the forgiveness conditions. Consistent with [Hypothesis 6](#), this was reflected in a significant main effect of ImRs-orientation, $F(1, 267) = 8.26, p = .004, \eta^2_G = .030$. However, there was no significant main effect of commitment, $F(1, 267) = .40, p = .529, \eta^2_G = .001$, nor the predicted ([Hypothesis 7](#)) interaction, $F(1, 267) = .24, p = .622, \eta^2_G = .001$.

Empowerment. As shown in [Table 2](#), feelings of empowerment did not differ descriptively across conditions. This pattern was further supported by the ANOVA results, which revealed no main effect of ImRs-orientation, $F(1, 267) = .26, p = .610, \eta^2_G = .001$, no main effect of commitment, $F(1, 267) = .00, p = .987, \eta^2_G < .001$, and no interaction, $F(1, 267) = .71, p = .709, \eta^2_G < .001$.

Exploratory MANOVA. Consistent with the results of the univariate ANOVAs, the MANOVA revealed a significant multivariate main effect of ImRs-orientation on the combined set of dependent variables, $F(5, 263) = 6.07, p < .001, \eta^2_p = .103$. By contrast, there was no significant

effect of commitment, $F(5, 263) = 1.18, p = .32, \eta^2_p = .022$, nor a significant interaction between ImRs-orientation and commitment, $F(5, 263) = .32, p = .90, \eta^2_p = .006$.

7. Discussion

Imagery Rescripting (ImRs) is a well-established intervention for alleviating aversive memories arising from negative experiences such as interpersonal transgressions ([Hagenaars & Arntz, 2012; Kip et al., 2023; Kroener et al., 2023](#)). However, several open questions remain concerning how ImRs can be optimally implemented, particularly regarding which components are most beneficial. One component that has recently received attention is the inclusion of revenge imagery directed at the transgressor ([Seebauer et al., 2014; Twardawski, Gollwitzer, et al., 2024](#)). The present research contributes to this literature by investigating the effects of revenge imagery on a critical outcome for which recent studies have revealed inconsistent findings: victims' aggressive inclinations. Additionally, we compare revenge-oriented ImRs with an alternative approach: forgiveness-oriented ImRs. Finally, we introduce the initial victim-transgressor relationship as a potentially crucial factor influencing the effectiveness of ImRs and investigate whether the effects of forgiveness- versus revenge-oriented ImRs vary depending on the level of commitment between the victim and transgressor.

To explore these questions, we conducted an experiment in which participants identified someone from their personal relationships with whom they had either a weak or strong commitment. Participants were then instructed to imagine a scenario in which this person publicly ridiculed them. Following this, they were guided through either a forgiveness- or revenge-oriented ImRs before reporting their aggressive inclinations, positive and negative affect, justice-related satisfaction, and feelings of empowerment.

Our findings can be summarized in three key points. First, participants who engaged in forgiveness-oriented ImRs reported significantly lower aggressive inclinations than those who underwent revenge-oriented ImRs. This finding contrasts with research suggesting that revenge imagery in ImRs does not increase aggression compared to ImRs without revenge (Seebauer et al., 2014). Instead, our results align with studies indicating that engaging in revenge imageries may increase aggressive tendencies (Twardawski, Angerl, & Lobbestael, 2024). The present study further extends the literature by comparing revenge-oriented ImRs with forgiveness-oriented ImRs, rather than with a neutral control condition, as done in prior studies (Seebauer et al., 2014; Twardawski, Angerl, & Lobbestael, 2024). However, this comparison also limits our ability to determine whether imagining revenge increased aggression or imagining forgiveness reduced it—a point we address in the limitations section. One key methodological difference between studies that found aggression-increasing effects of revenge in imagery sessions (e.g., this study and Twardawski, Angerl, & Lobbestael, 2024) and those that did not (Seebauer et al., 2014) is the dependent variable. Seebauer et al. (2014) measured aggressive emotions, whereas we measured participants' intentions to act aggressively if they were to encounter the transgressor again. This suggests that revenge imagery may activate behavioral scripts rather than emotions, a finding that is in line with script theory (Huesmann & Eron, 1984). Future research should further examine the distinction between aggressive emotions and aggressive behavioral intentions. Nevertheless, our findings suggest that forgiveness-oriented ImRs may be a more effective tool than revenge imagery in reducing victims' aggressive tendencies, possibly because forgiveness enables victims to disengage from retaliatory thoughts and behavioral intentions (H. Watson et al., 2017).

Second, forgiveness-oriented ImRs more effectively reduced victims' negative affect and increased their justice-related satisfaction than revenge-oriented ImRs, while both approaches had similar effects on positive affect. This pattern aligns with prior research showing stronger effects of forgiveness (versus revenge) ImRs on negative emotions stemming from victimization, whereas both approaches are comparably effective in influencing positive affect (H. Watson et al., 2017). This divergence between effects on negative and positive affect warrants further investigation. Additionally, exploratory analyses also showed no differences in feelings of empowerment between the forgiveness- and revenge-oriented conditions. This finding aligns with prior research indicating that both revenge (Fischer et al., 2022) and forgiveness (Strelan et al., 2020; Wenzel & Okimoto, 2010) can foster a sense of empowerment in victims. However, this finding raises questions about the psychological mechanism underlying the differing effects of forgiveness- and revenge-oriented ImRs on negative affect. Prior research has suggested that empowerment may mediate the relationship between ImRs and emotional outcomes (Twardawski et al., 2021; Twardawski, Gollwitzer, et al., 2024). Given that we did not find any differences between our conditions on empowerment, our results suggest that the observed differences in negative affect may not be driven by differences in empowerment. Future research is needed to explore alternative explanatory mechanisms.

Third, the differences between forgiveness- and revenge-oriented ImRs did not depend on the level of commitment between victim and transgressor. This finding is somewhat unexpected, given prior research suggesting that forgiveness plays a particularly important role in strongly committed relationships, where it serves the goal of maintaining the bond (Karremans et al., 2003). Methodological differences may

partly account for this discrepancy. For instance, Karremans et al. (2003) asked participants to simply imagine forgiving versus not forgiving a transgressor, whereas we used a structured, multi-phase model of forgiveness based on the framework by Enright and Fitzgibbons (2000). Moreover, our study contrasted forgiveness with revenge, rather than with the absence of forgiveness, as in Karremans et al.'s (2003) design. These differences make it difficult to draw firm conclusions from the mixed findings in the literature. Given that victimization often occurs within (close) relationships (Siddique, 2016), further research is warranted to clarify how the victim-transgressor relationship shapes the effectiveness of ImRs interventions. Relatedly, the transgressor's relative power or social status may significantly influence the emotional effects of forgiveness or revenge (Aquino et al., 2006; Struthers et al., 2019). For instance, imagining revenge against a higher-status or more powerful transgressor may provoke different emotional responses than targeting someone of equal standing. As we did not assess perceived power dynamics in this study, this remains an important direction for future research.

Despite its contributions, the present research has several limitations. First, we focused on a specific set of outcomes, which revealed some advantages of forgiveness- over revenge-oriented ImRs. However, other outcomes might cast doubt on the inclusion of forgiveness in ImRs. For example, encouraging victims to forgive their transgressors could elicit feelings of guilt about other—sometimes healthy—emotions, such as anger. Exploring such potentially detrimental side effects of forgiveness represents an important direction for future research. Second, without a neutral control group, we cannot determine whether forgiveness-oriented ImRs is beneficial to victims or if revenge-oriented ImRs is detrimental. Third, we restricted the commitment manipulation by excluding family members and intimate partners. This allowed us to isolate the effects of commitment from confounding relational dynamics, such as obligations or interdependence that are often inherent in familial or romantic relationships. While this approach was based on prior research (Karremans et al., 2003) and supported by a successful manipulation check, we did not assess the specific type of relationship imagined. As a result, we cannot fully account for relationship dynamics beyond the commitment dimension. Future research should broaden the conceptualization of commitment to encompass a wider range of relationship types—from strangers to intimate partners and family members—given that transgressions within close relationships may be especially relevant in clinical contexts (Hien & Ruglass, 2009; Leemis et al., 2022). Fourth, we did not assess how vividly or convincingly participants were able to imagine the victimization scenario or enact forgiveness versus revenge. Therefore, we cannot determine how successfully they engaged in the imagery tasks. This ability may have varied systematically depending on the level of commitment. For instance, imagining someone from one's real-life social circle as the transgressor might have triggered feelings of vicarious guilt or shame (Iyer et al., 2007; Lickel et al., 2005), potentially interfering with the emotional impact of the intervention. Likewise, imagining forgiving someone with whom one shares no close connection may have been experienced as relatively unnatural or forced. These limitations underscore the importance of assessing participants' imagery content more directly in future research (e.g., through participant-generated descriptions). Fifth, the short-term nature of our findings is a limitation, as we only assessed the immediate effects of ImRs. Drawing clinical conclusions will require future studies to examine the long-term impact of such interventions. This also relates to what is arguably the most substantial limitation of the present study: it was conducted in a highly controlled experimental context that differs substantially from real-world clinical practice. Specifically, participants did not engage with autobiographical experiences of victimization but instead imagined a standardized fictional scenario. Although we implemented measures to foster vivid engagement (e.g., audio-recorded scenes), imagined transgressions cannot fully capture the psychological complexity and personal relevance of real-life events. This limitation also restricts the activation of personally relevant

schemas—a core therapeutic mechanism of ImRs (Arntz, 2012). Accordingly, the ecological validity and clinical applicability of our findings are markedly limited. Moreover, the specific transgression used in this study—being publicly ridiculed at a birthday party—may not generalize to other forms of interpersonal transgressions. Although the scenario was selected for its vividness and social relevance, future studies should investigate whether the observed effects also apply to other transgression contexts (e.g., betrayal or physical aggression). In addition, the ImRs session in our study was a brief, one-time online intervention delivered via scripted audio recordings. While this approach ensured procedural consistency and experimental control, it lacks ecological validity relative to real-world ImRs treatments, which are typically embedded in multi-session therapeutic processes. In clinical settings, patients typically develop their own imagery in collaboration with therapists through an iterative, personalized process—rather than following scripted instructions (Arntz, 2012). Future research involving actual victims in clinical settings is therefore essential to evaluate the therapeutic relevance and applicability of our findings.

Despite these limitations, our research provides preliminary insights into the implementation of ImRs. Specifically, it emphasizes the potential benefits of including a forgiveness component in ImRs. More broadly, our findings contribute to an ongoing discourse about which components of ImRs are most beneficial. They highlight the importance of further research on relational factors for the design of victimization treatment, such as the level of victim-transgressor commitment. We hope that future research will build upon these findings and continue to explore these promising avenues.

CRediT authorship contribution statement

Mathias Twardawski: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Gizem Syuleyman:** Writing – review & editing, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the authors used ChatGPT to check the final manuscript for any errors or language issues. ChatGPT made only few minor suggestions that were incorporated into the final manuscript. The authors take full responsibility for the content of the published article.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.brat.2025.104916>.

Data availability

Materials, data, codebook, and analysis script are available on the Open Science Framework (OSF): <https://osf.io/73shw>.

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