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ORIGINAL PAPER

Mental contrasting and conciliatory behavior in romantic relationships

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Abstract
When people in a relationship offend each other, it is important for them to behave in a conciliatory manner if they wish to reconcile. We tested in two studies if mental contrasting (versus other modes of thoughts) is an effective strategy for people to self-regulate their conciliatory behavior. In Study 1, we assessed student participants' spontaneous mode of thought when thinking about an unresolved interpersonal transgression and measured their commitment to reconcile. Eight days later, we assessed their conciliatory behavior. Participants who spontaneously mentally contrasted reported more commitment to reconcile and showed sensible conciliatory behavior (i.e., based on their expectations of solving their interpersonal concern). In Study 2, romantic couples were invited into the lab and asked to identify unresolved incidents in which one partner (the perpetrator) had offended the other (the victim). After perpetrators were induced to mentally contrast or indulge about a successful reconciliation, we videotaped the couples discussing the incident. Only perpetrators who mentally contrasted showed sensible conciliatory behavior and reached effective reconciliation (measured right after the experiment and 2 weeks later). The findings imply that mental contrasting supports perpetrators to show conciliatory behavior when it promises to be successful, but discourages it when it seems futile or adverse, thereby protecting the relationship from further harm.

Keywords Reconciliation · Conciliatory behavior · Self-regulation · Mental contrasting

Imagine two people, Mary and John. They have been a couple for several years now. They were supposed to spend the weekend with John's parents but on Thursday, Mary was invited to a party that promised to be fun. She decided to attend the party and told John that she had to work on the weekend. On Monday, a friend asked John why he had not come to the party with Mary. John is very disappointed and angry that Mary lied to him. Their relationship is at risk and can only be healed by a thorough reconciliation process in which Mary makes amends and John grants forgiveness. Mary knows that she has to take the first step, but she is too ashamed to approach John and fears that he will reject her. In this situation, Mary could benefit from an effective self-regulation strategy to overcome her inner fears to take responsibility and offer a sincere and meaningful apology.

Interpersonal relationships are important to human life throughout the world. We seek relationships that are stable over time and in which the partners care for each other's well-being (Baumeister and Leary 1995; Buss and Kenrick 1998; Bowlby 1977). However, from time to time, we jeopardize our close relationships by unintended or intended interpersonal transgressions: we forget birthdays; we are inattentive to feelings of loved ones; we break things, lie, berate, and betray. In a close relationship, a transgression is experienced when one partner believes that the other partner departed from the implicit or explicit rules that govern their relationship (Hannon et al. 2010).

When transgressions of relationship norms occur, like in the example above, they can lead to a lack of trust and a feeling of insecurity regarding the relationship (Baumeister et al. 1994; Lazare 2004). The relationship is now at risk because both parties suffer from an imbalance in their relationship. The perpetrator transgressed norms or values for his or her benefit and to the disadvantage of the victim (Worthington 2006). The transgression can lead to negative psychological consequences for both parties: victims might feel devastated,

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powerless, and humiliated (Jones et al. 2001; Lazare 2004; Shnabel and Nadler 2008), while perpetrators might have feelings of shame, guilt, and embarrassment (Baumeister et al. 1994; Baumeister et al. 1995; Tangney et al. 2007).

Reconciliation

The negative consequences of interpersonal transgressions can be healed by reconciliation. Reconciliation restores the damaged relationship when all issues that led to the estrangement are fully resolved (Shnabel and Nadler 2008). When reconciled, both partners benefit on an affective (e.g., letting go of anger), cognitive (e.g., restoring trust), and behavioral (e.g., constructive interactions) level (Shnabel and Nadler 2015; Staub et al. 2005). Reconciliation in the aftermath of a conflict is rooted in our cultural heritage and is not exclusively human. Many mammals engage in various forms of body contact or gestures that express their willingness to reconcile. For example, in nonhuman primates, such gestures may include mouth-to-mouth contact, embracing, sexual intercourse, grooming, or handholding (deWaal 2000).

Reconciliation improves psychological well-being: for the victims, granting forgiveness correlates with greater life satisfaction, more positive mood, fewer psychosomatic symptoms, and a decrease in negative affect (Allemand et al. 2012; Hill and Allemand 2011). For the perpetrators, being forgiven provides relief from nagging feelings of guilt and ruminative thoughts (Baumeister et al. 1994, 1995; Exline et al. 2011). Additionally, reconciliation improves the relationship between the victims and the perpetrators (e.g., better mutual understanding, more positive interactions) and sustains their relationship despite the transgression (Hannon et al. 2010; Karremans et al. 2003; McCullough et al. 1997; Tsang et al. 2006). Importantly, for reconciliation to occur, both partners need to show conciliatory behavior.

Conciliatory behavior

Conciliatory behavior is a comprehensive concept that includes any attempt to approach the opposing partner to restore the relationship. The conciliatory behaviors of the perpetrator (seeking forgiveness) and the victim (granting forgiveness) share a foundation of peacefully approaching each other and the goal of restoring the relationship (Hannon et al. 2010, 2012). The interplay between seeking and granting forgiveness is called the *apology–forgiveness cycle* (Tavuchis 1991). In this cycle, the conciliatory behavior performed by the perpetrator is one of the most important factors for reconciliation (e.g., Bono et al. 2008; Kearns and Fincham 2005; Zechmeister et al. 2004). It includes any attempt to seek forgiveness and to restore the relationship by approaching the victim, apologizing, making amends and repairing the damage (Tabak et al. 2012).

Despite the manifold benefits of conciliatory behavior, perpetrators might refrain from performing it because they fail to overcome inner fears and obstacles. For example, apologizing can be a painful experience, which leaves us weak and vulnerable (Tavuchis 1991). Perpetrators might feel ashamed and guilty and might not want to disclose those unpleasant emotions (Worthington 2006). Performing conciliatory behavior entails recognizing and admitting a transgression, which makes it difficult to maintain a favorable self-image and threatens our self-worth (Kearns and Fincham 2005; Tavuchis 1991). The perpetrator's risk is to be considered weak, to be exploited, or even rejected (Exline et al. 2007). Therefore, performing conciliatory behavior might be risky and costly for the perpetrator.

In addition, performing conciliatory behavior alone does not guarantee forgiveness from the victim and reconciliation. Some apologies can even be worse than no apology, doing further harm to the victim or backfiring on the perpetrator (Smith 2008). Moreover, a manipulative or insincere apology is a major reason for conciliatory behavior to not result in forgiveness and reconciliation (Lazare 2004; Smith 2008). Therefore, to be effective, an apology often requires perpetrators to self-regulate their emotions (e.g., to overcome their fears) and their conciliatory behavior (i.e., to approach the victim at the right time point and with a sincere apology). One self-regulatory strategy that may support people to show sensible conciliatory behavior is mental contrasting of a desired future with potential obstacles standing in the way of reaching the desired future. Mental contrasting has been shown to lead people to pursue their desired future when expectations of success are high, but to refrain from pursuing their desired future if expectations of success are low (i.e., expectancy-dependent pursuit of a desired future). Therefore, it should support conciliatory behavior when it promises to be successful (i.e., high expectations of success), but discourage it when it seems futile or harmful (i.e., low expectations of success).

Mental contrasting

As lined out in Fantasy Realization Theory (FRT; Oettingen 2000, 2012, 2014), mental contrasting stops people from pursuing a desired future halfheartedly: it helps to move forward with desired futures that seem feasible and to let go of those desired futures that are perceived as unfeasible (review by Oettingen 2012, 2014). During mental contrasting, people first imagine the desired future (e.g., mended relationship) and then reflect on the reality standing in the way of attaining the desired future (e.g., being afraid of getting rejected). By contrasting the desired

future with current reality, the reality is now seen as an obstacle that needs to be overcome. When the obstacle is surmountable (i.e., high expectations of success), mental contrasting builds strong implicit associations between the desired future and the obstacle of reality and thus the desired future can no longer be thought of without the obstacles of the present reality (Kappes and Oettingen 2014; Kappes et al. 2012, 2013). After mental contrasting, the mental representation of a mended relationship will automatically activate the mental representation of being afraid of getting rejected as an obstacle standing in the way of reaching this future. In contrast, when the obstacle is unsurmountable (i.e., low expectations of success), people no longer perceive the reality as an obstacle, implicit associations between future and reality are weakened, and people will let go from pursuing the desired future, saving their energy and effort for more promising endeavors (Oettingen 2000, 2012, 2014; Oettingen et al. 2001). In summary, mental contrasting strengthens the pursuit of a desired future when expectations of success are high and weakens the pursuit of a desired future when expectations of success are low.

By fostering expectancy-dependent pursuit of a desired future, mental contrasting should lead to sensible conciliatory behavior and support people in actively approaching the victim when a reconciliation seems feasible and to refrain from approaching the victim (and to avoid further harm) when a reconciliation seems unfeasible. That is, if the victim is a good friend who will most likely grant forgiveness, overcoming unfounded worry, approaching and apologizing to the victim might be a feasible and important step towards reconciliation. On the other hand, a person that has good reason to be afraid of getting rejected by the victim might be better advised to wait before approaching the victim to protect herself as well as the victim from further harm.

FRT describes three other modes of thought about a desired future: indulging, dwelling and reverse contrasting. Indulging implies positively fantasizing about a desired future without considering the obstacles standing in the way of reaching the future; dwelling implies reflecting on the current reality without thinking about the desired future. Unlike mental contrasting, indulging and dwelling are one-sided ways of thinking. Therefore, people do not feel the need to act on overcoming the obstacles in order to attain the desired future, and do not consider their expectations of success: they invest into pursuing their desired future irrespective of their chances of success. Reverse contrasting means thinking about the desired future and reflecting on current reality, but in reverse order. By reflecting first on the current reality and then fantasizing about the desired future, the current reality is not perceived as an obstacle standing in the way of the desired future. Thus, future and reality remain unconnected. By missing to connect future and reality, people do not consider their expectations of success, and invest, just like in indulging or dwelling, too little in the face of high expectations, and too much in the face of low expectations.

The differential effects of mental contrasting versus indulging, dwelling and reverse contrasting have been demonstrated in different life-domains (e.g., achievement, interpersonal relations, health) and in various populations (school children, chronically ill, health care professionals). Mental contrasting has been measured as a spontaneous way of thinking about one's wishes, experimentally induced in the laboratory, and applied as an intervention in the field. Furthermore, commitment to pursue the desired future has been measured short term and long term; by self-report and objective measures (e.g., grades), on an affective (e.g., anticipated disappointment), motivational (e.g., energization), behavioral (e.g., effort), or cognitive (e.g., planning) level (overview by Oettingen 2012, 2014).

Most importantly for research on reconciliation, mental contrasting has been shown to be effective in regulating ones' emotions and behaviors in interpersonal settings. For example, mental contrasting supported participants in seeking another person's help in order to pursue a goal and also in giving help to another person in expanding their resources and skills (Oettingen et al. 2010). Furthermore, in negotiations, mental contrasting enabled participants to distinguish feasible deals from unfeasible ones and to find integrative (win–win) solutions that maximized the gains for both negotiation partners (Kirk et al. 2011). Mental contrasting enabled people to identify and overcome their obstacles, standing in the way of realizing their wished-for future, when expectations of success were high, and to let go when expectations of success were low. Therefore, mental contrasting could be an effective strategy to support people in showing sensible conciliatory behavior: investing much effort when reconciliation is likely (i.e., high expectations of success), and refraining from doing further harm by approaching the victim when reconciliation is unlikely (i.e., low expectations of success).

The present research

We investigated to what extent mental contrasting, measured as a spontaneous mode of thought (Study 1) or as an experimentally induced strategy (Study 2), versus other modes of thought (i.e., indulging, dwelling, and reverse contrasting), predicts sensible (i.e., expectancy-dependent) conciliatory behavior and reconciliation in dyadic relationships. In Study 1, we measured participants' commitment to reconcile, their conciliatory behavior, and their actual reconciliation with the victim. In Study 2, we experimentally induced mental contrasting versus indulging and further measured whether

participants' conciliatory behavior is acknowledged by the victim.

Study 1: spontaneous mental contrasting and conciliatory behavior

In Study 1, we assessed participants' spontaneous use of mental contrasting when thinking about a concern they have regarding an interpersonal transgression. Specifically, we asked participants to write about an important interpersonal transgression that was still unresolved and to name a concern they have regarding resolving this transgression (e.g., I want to explain myself and apologize). Participants were then asked to freely elaborate on this concern, and to write down their thoughts and images. To assess spontaneous mental contrasting versus indulging, dwelling, and reverse contrasting, we content analyzed participants' written texts. The spontaneous use of mental contrasting has the same relation to behavior change as induced mental contrasting (Sevincer and Oettingen 2013; Sevincer et al. 2015). That is, mental contrasting, whether being induced or spontaneously applied, predicts expectancy-dependent commitment and performance towards a desired future, while the other modes of thought (i.e., dwelling, indulging and reverse contrasting) predict expectancy-independent commitment and performance. Following the elaboration, participants indicated their commitment to solve their concern. Eight days later, we assessed conciliatory behavior and reconciliation with the victim by inviting participants back to the lab and having them fill out a retrospective diary in which they reported if they had taken any steps to solve their concern and if they had successfully reconciled with the victim.

We hypothesized that spontaneous mental contrasting predicts stronger expectancy-dependent commitment to reconcile than the other modes of thought. Similarly, we hypothesized that spontaneous mental contrasting predicts expectancy-dependent immediacy of conciliatory behavior compared with the other modes of thought. Furthermore, we hypothesized that the expectancy-dependent commitment predicts conciliatory behavior. That is, participants who spontaneously engage in mental contrasting should show strong commitment to reconcile and promptly approach their victim when their expectations of success are high, but show weak commitment to reconcile and delay approaching the victim if their expectations of success are low. Immediacy of conciliatory behavior, in turn, should predict reconciliation with the victim. That is, participants who spontaneously engage in mental contrasting should promptly approach the victim and, in turn, successfully reconcile with the victim when their expectations of success are high, but delay approaching the victim and report little reconciliation if their expectations of success are low.

Method Study 1

Participants

A total of 113 students of a large European University (57% major in Psychology) participated in the study (22% male; age $M = 24.29$, $SD = 4.26$). As a compensation for taking part in both parts of the study, participants could choose between two credit points or 12 Euro.[1]

Procedure and measures

Participants were told the study concerned how interpersonal relationships develop over time. They were informed that their participation would include two sessions, with a period of 8 days between sessions.

Interpersonal transgression

Participants were asked to write a personal narrative about an interpersonal transgression that was still unresolved. The instructions were based on Baumeister et al. (1995):

> Describe an incident in which you angered someone - and in which you felt guilty or regretful afterwards. That is, describe an occurrence in which you provoked someone or made someone really angry or mad, and afterwards, you felt bad or suffered from a feeling of having done something wrong. Please choose an event in which you had the wish to make amends afterwards, but you have not yet done anything. The event should have taken place within the last three months. Please be as thorough as possible. Describe the full story: your behavior, your thoughts, and your emotions.

Participants wrote for example: "I cheated on my partner" or "I took my mood out on my roommate."

To check if resolving the interpersonal transgression was of high incentive value to participants and if the transgression was still unresolved and causing guilt, we asked participants three questions: "How important is it to you to resolve the interpersonal transgression?", "Is the interpersonal concern completely resolved for you?" (reverse-coded), and "How guilty do you feel regarding the interpersonal

[1] Regarding the number of participants recruited for both studies reported in the present paper, we want to mention that both of our studies were time-intensive and longitudinal; we recruited both individual students and romantic couples and invited them to our lab. Further, we had all participants come to the lab for a follow-up session and we let them fill in retrospective diaries. Thus, we simply recruited as many participants possible within the financial and experimental constraints of our study designs (see also Funder et al. 2014).

transgression right now?" on Likert scales ranging from 1 (*not at all*) to 7 (*very*). On average, the incentive to resolve the interpersonal transgression was high ($M = 5.46$, $SD = 1.47$). Similarly, participants on average named interpersonal concerns which were not yet resolved ($M = 3.30$, $SD = 1.66$) and for which they still felt guilty ($M = 4.22$, $SD = 1.35$).

Expectations of success

To measure expectations of resolving the interpersonal transgression, we followed previous research investigating the effects of mental contrasting (review by Oettingen 2012). Participants were asked: "How likely do you think it is that you can resolve this interpersonal concern?" and "How likely do you think it is that you will resolve this interpersonal concern in the immediate future?" both on Likert scales ranging from 1 (*not at all*) to 7 (*very*, Cronbach's $\alpha = .88$). On average, expectations of resolving the interpersonal transgression were moderate to high ($M = 4.65$, $SD = 1.85$).

Spontaneous mode of thought

Next, participants had to name their main concern that they felt about their interpersonal transgression ("If you think about your interpersonal transgression, which concern do you associate with it?") and to mentally elaborate on this concern:

> Now we would like you to think about your concern. You are free to think about any aspects related to your concern that comes to mind. Let the mental images pass by in your thoughts and do not hesitate to give your ideas free reign. Take as much time and space as you need to describe your thoughts.

Following the procedure described by Sevincer and Oettingen (2013) and Sevincer, et al. (2015), two independent coders (1) segmented the free elaborations into statements, (2) coded the statements, and (3) classified the elaborations as one of four self-regulatory modes of thought. First, the two coders segmented each elaboration into different statements. A statement was defined as one subject–predicate–object–adverb sequence. For example, the sentence "because I was wrong I would like to resolve this situation, and I would like to apologize" was segmented into (a) "because I was wrong", (b) "I would like to resolve this situation", (c) "and I would like to apologize". The two coders agreed on 84.4% of the segmentations of the elaborations (Cohen's $\kappa = .68$).

Second, each statement was coded as (a) desired future, (b) present reality or (c) other (Sevincer and Oettingen 2013). Statements were coded as desired future-statements if they depicted a positive future (e.g., "I think he would like that") and as present reality if they depicted a negative present reality (e.g., "Currently I am too stubborn for that"). Statements were coded as other if they neither depicted a positive future nor a negative reality (e.g., "One needs friendships"). In this study, the two independent coders agreed on 82.8% of the coded statements (Cohen's $\kappa = .74$). The coders discussed the statements on which they did not agree and reached an agreement on the final coding for further analysis.

Third, the coders classified participants' mode of self-regulatory thought. Specifically, if participants generated at least one statement of desired future but no statement of present reality, their mode of thought was classified as indulging. If participants generated at least one statement of present reality, but no statement of desired future their self-regulatory mode was classified as dwelling. If participants first generated at least one statement of desired future and thereafter one statement of present reality, their mode of thought was classified as mental contrasting. If they started with a statement of present reality, and then came up with a statement of the desired future, they were classified as reverse contrasting.

Commitment to reconcile

Following the free elaboration, participants indicated their commitment to resolve the interpersonal concern. Following Sevincer and Oettingen (2013), participants were asked to answer five items (e.g., "How disappointed would you feel if you did not resolve the interpersonal concern?") on a Likert scale ranging from 1 (*not at all*) to 7 (*very much*, Cronbach's $\alpha = .93$). On average, commitment to reconcile was moderate to high ($M = 4.94$, $SD = 1.37$).

Immediacy of conciliatory behavior and successful reconciliation

Eight days after the first session, participants came back to the lab. In line with Oettingen et al. (2010, 2001) and we used a retrospective diary, in which participants indicated for each of the 8 days between the first and the second session if they acted on resolving the interpersonal concern (*yes*/*no*). We calculated the number of days between the first session and the day of the first action to get an estimate on how promptly participants acted on solving their concern (immediacy of conciliatory behavior; Oettingen et al. 2001, 2010). Participants who had not undertaken any steps within the 8 days were assigned the score of participants who had the maximal delay plus 1 day (i.e., 9 days; see also Oettingen et al. 2001). Finally, to measure reconciliation, participants

were asked to indicate for each day if they had resolved their interpersonal concern (*yes*/*no*).[2]

Results Study 1

Descriptive analyses

A total of 111 (out of the 113) participants took part in both parts of the study. We excluded seven participants from the analysis. Specifically, as we asked participants to report an important interpersonal incident that they feel guilty about, and that was still unresolved, we excluded two participants who did not name a concern and two participants who reported that the incident was of little importance, that they felt little guilt about, and that was almost resolved (i.e., participants scored on all three items two or less). As for spontaneous mode of self-regulatory thought, 12 participants (11.21%) were classified as indulging, 22 participants (20.56%) as dwelling, 42 participants (39.25%) were classified as mental contrasting, and 28 participants (26.17%) as reverse contrasting. Three participants (2.81%) generated only statements that were coded as other; thus, their self-regulatory mode was not classified and they were not included in the analysis (see also Sevincer and Oettingen 2013; Sevincer et al. 2015). The final sample consisted of 104 participants.

A multivariate analysis of variance (MANOVA) showed that participants who engaged in spontaneous mental contrasting did not differ from those engaging in other modes of thought in their incentive value, $F(3, 100) = 1.54$, $p = .218$ ($M_{MC} = 5.71$, $SD_{MC} = 1.49$; $M_{Other} = 5.35$, $SD_{Other} = 1.43$), their expectations of success, $F(3, 100) = 3.24$, $p = .075$ ($M_{MC} = 5.06$, $SD_{MC} = 1.65$; $M_{Other} = 4.40$, $SD_{Other} = 1.93$), or the length of their elaboration (number of words), $F(3, 100) = 0.49$, $p = .486$ ($M_{MC} = 107.45$, $SD_{MC} = 43.48$; $M_{Other} = 100.52$, $SD_{Other} = 53.30$).

In the retrospective diary, 63 participants (61%) reported performing conciliatory behavior, and 41 (39%) reported no action. On average, participants who reported having performed conciliatory behavior took their first step towards resolving the interpersonal concern after 3 days ($SD = 2$, $min = 1$, $max = 8$). Regarding successful reconciliation with the victim, 42 (40%) participants reported resolving their interpersonal concern completely, while 62 (60%) reported not having resolved their interpersonal concern completely.

[2] In this study, additional measures were collected that are not discussed here. A complete list of measures is available in the supporting information.

Expectancy-dependent commitment

We hypothesized that the link between expectations of success and commitment would be stronger for participants who spontaneously engaged in mental contrasting than for those who spontaneously engaged in the other modes of thought (indulging, dwelling, or reverse contrasting). We applied a general linear model with commitment to reconcile as the dependent variable, and entered incentive value, expectations of success, spontaneous mode of thought and the interaction term of expectations of success and spontaneous mode of thought as predictors.

We observed main effects for incentive value, $F(1, 99) = 91.74$, $p < .001$, $\eta_p^2 = .481$, for expectations, $F(1, 99) = 40.02$, $p < .001$, $\eta_p^2 = .288$, and for mode of thought, $F(1, 99) = 6.89$, $p = .010$, $\eta_p^2 = .065$. The predicted interaction effect of expectations and mode of thought was also significant, $F(1, 99) = 6.33$, $p = .013$, $\eta_p^2 = .060$, showing a stronger relationship between expectations of success and commitment to reconcile for participants who mentally contrasted, $b = 0.43$ ($SE = 0.08$), $p < .001$, 95% CI [0.27, 0.58] than for those who applied other modes of thought, $b = 0.19$ ($SE = 0.05$), $p < .001$, 95% CI [0.09, 0.30].

Expectancy-dependent immediacy of conciliatory behavior

We hypothesized that the link between expectations of success and immediacy of conciliatory behavior would be stronger for participants who spontaneously engaged in mental contrasting than for those who spontaneously engaged in the other modes of thought (indulging, dwelling, or reverse contrasting). We applied a general linear model with immediacy of conciliatory behavior as the dependent variable, and entered incentive value, expectations of success, mode of thought, and the interaction term of expectations of success and mode of thought as predictors.

We observed main effects for incentive value, $F(1, 99) = 14.56$, $p < .001$, $\eta_p^2 = .128$, for expectations, $F(1, 99) = 13.42$, $p < .001$, $\eta_p^2 = .119$, and for mode of thought, $F(1, 99) = 5.13$, $p = .026$, $\eta_p^2 = .049$. The predicted interaction effect of expectations and mode of thought did not reach significance, $F(1, 99) = 3.81$, $p = .054$, $\eta_p^2 = .037$, indicating no stronger relationship between expectations of success and immediacy of conciliatory behavior for participants who mentally contrasted than for those who applied the other modes of thought. However, for participants who mentally contrasted, the relation between expectations of success and immediacy of conciliatory behavior was different from 0, $b = -0.87$ ($SE = 0.25$), $p < .001$, 95% CI [− 1.37, − 0.05]. For participants who used other modes of thought, the relation between expectations of success and immediacy of

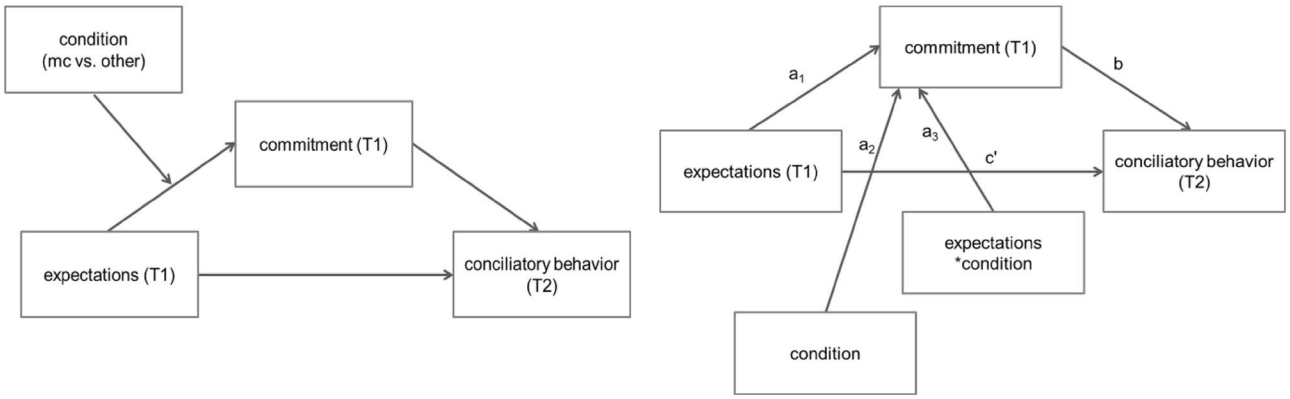

Fig. 1 The conceptual moderated mediation model (left) and the statistical moderated mediation model (right) estimating the association between expectations of success and conciliatory behavior via goal commitment, moderated by condition (MC vs. other) in Study 1

conciliatory behavior to reconcile was not different from 0, $b = -0.29$ ($SE = 0.17$), $p = .096$, 95% CI [− 0.63, 0.05].[3]

Mental contrasting: expectancy-dependent commitment predicts immediacy of conciliatory behavior

To test our prediction that for participants who mentally contrasted, expectancy-dependent commitment is associated with immediacy of conciliatory behavior reported after 8 days, we conducted a moderated mediation analysis (Hayes 2013; Model 7 with 1000 bootstrapped samples for bias-corrected confidence intervals). The model of the tested associations is shown in Fig. 1. We specified expectations of success as the predictor, immediacy of conciliatory behavior (measured after 8 days) as the outcome variable and commitment as the mediator. Mode of thought was specified as the moderator, qualifying the association between expectations of success and commitment. As expected, the moderated mediation was significant $b = .38$, 95% CI [0.122, 0.679] (a_3b-path, Fig. 1). The mediation was true for participants who used mental contrasting, $b = -.68$, 95% CI [− 1.056, − 0.340], but also for participants who used other modes of thought, $b = -.30$, 95% CI [− 0.569, − 0.133]. That is, for participants who spontaneously engaged in mental contrasting, expectations of success indirectly predicted immediacy of conciliatory behavior mediated by their commitment. The higher their expectations, the stronger the commitment and the quicker they showed conciliatory behavior. Participants who spontaneously engaged in other modes of thought showed a weaker association between expectation of success and commitment than participants who spontaneously engaged in mental contrasting. Also, for the other modes of thought, expectations of success did not significantly predict immediacy of conciliatory behavior, $p = .068$. See Table 1 for regression coefficients of all paths of the statistical model.

Mental contrasting: expectancy-dependent immediacy of conciliatory behavior predicts successful reconciliation

To test our prediction that for participants who mentally contrast, expectancy-dependent immediacy of conciliatory behavior is associated with successful reconciliation, we conducted a moderated mediation analysis (Hayes 2013; Model 7 with 1000 bootstrapped samples for bias-corrected confidence intervals). The model of the tested associations is the same as in Fig. 1, only that this time, we specified expectations of success as the predictor, successful reconciliation as the outcome variable and immediacy of conciliatory behavior as the mediator. Mode of thought was specified as the moderator, qualifying the association between expectations of success and immediacy of conciliatory behavior.

As expected, the moderated mediation was significant $b = -.26$, 95% CI [− 0.553, − 0.084] (a_3b-path). The mediation was stronger for participants who used mental contrasting $b = .41$, 95% CI [0.212, 0.691] than for participants who used other modes of thought $b = .15$, 95% CI [0.004, 0.316]. That is, for participants who spontaneously engaged in mental contrasting, expectations of success indirectly predicted

[3] We repeated the analyses with both the main effect of incentive value and the interaction between incentive value and condition. Whereas the main effect of incentive value on commitment was significant, the interaction between incentive value and condition was not significant for commitment, $F(1, 99) = 1.13$, $p = .148$.

Similarly, for immediacy of action, the main effect of incentive value was significant, and here, the interaction between incentive value and condition was also significant, $F(1, 97) = 3.99$, $p = .049$. For both analyses, adding the interaction term of incentive value and condition did not change the significance of the hypothesized expectations * condition interaction.

Table 1 Study 1: conditional process model with immediacy of conciliatory behavior as dependent variable

Predictor	Estimate	*SE*	*t*	*p*
Commitment (mediator)				
Constant	4.842	0.173	28.059	< 0.05
Expectations	0.671	0.103	6.514	< 0.05
Condition	0.082	0.222	0.370	0.712
Expectations × condition	− 0.372	0.126	− 2.957	< 0.05
Immediacy of conciliatory behavior (dependent variable)				
Constant	10.437	1.169	8.932	< 0.05
Commitment	− 1.011	0.230	− 4.390	< 0.05
Expectations	− 0.313	0.170	− 1.843	0.068

Conditional effects at condition = 0 and 1

Condition	Bootstrap indirect effect	Bootstrap SE	95% CI bias corrected
0 (Mental contrasting)	− 0.678	0.186	(− 1.056, − 0.340)
1 (Other)	− 0.302	0.108	(− 0.569, − 0.133)

The relation of expectations of success and conciliatory behavior mediated by commitment and moderated by condition. Unstandardized regression coefficients are reported. Full model $R^2 = .565$. Bootstrap sample size = 1000

Table 2 Study 1: conditional process model with successful reconciliation as dependent variable

Predictor	Estimate	*SE*	*t*	*p*
Immediacy of conciliatory behavior (mediator)				
Constant	4.796	0.429	11.186	< 0.05
Expectations	− 1.181	0.256	− 4.619	< 0.05
Condition	1.270	0.551	2.304	< 0.05
Expectations × condition	0.758	0.312	2.429	< 0.05
			Z	
Successful reconciliation (dependent variable)				
Constant	1.307	0.471	2.775	< 0.05
Immediacy of conciliatory behavior	− 0.347	0.086	− 4.019	< 0.05
Expectations	0.215	0.149	1.437	0.151

Conditional effects at condition = 0 and 1

Condition	Bootstrap indirect effect	Bootstrap SE	95% CI bias corrected
0 (Mental contrasting)	0.410	0.126	(0.212, 0.691)
1 (Other)	0.147	0.078	(0.004, 0.316)

The relation of expectations of success and successful reconciliation mediated by the immediacy conciliatory behavior and moderated by condition. Unstandardized regression coefficients are reported. Full model − 2LL = .345. Bootstrap sample size = 1000

reconciliation, and this relation was mediated by immediacy of conciliatory behavior. The higher their expectations, the quicker they showed conciliatory behavior and the more often they reported having solved their interpersonal concern (reconciling with the victim). Participants who spontaneously engaged in other modes of thought showed a weaker association between expectation of success and successful reconciliation via conciliatory behavior than participants who spontaneously engaged in mental contrasting. Expectations of success had no direct effect on successful reconciliation, $p = .151$. See Table 2 for regression coefficients of all paths of the statistical model.

Discussion Study 1

In Study 1, we showed that spontaneously applied mental contrasting predicts sensible conciliatory behavior. Perpetrators reported an unresolved interpersonal transgression and named the most important concern that arose from their

transgression. We assessed the mode of thought perpetrators spontaneously engaged in while they thought about this concern. Perpetrators who mentally contrasted reported a stronger expectancy-dependent commitment to reconcile and stronger expectancy-dependent immediacy of conciliatory behavior than perpetrators who used other modes of thought (i.e., indulging, dwelling, or reverse contrasting), although this latter finding did not reach statistical significance. Further, for mental contrasting participants, the expectancy-dependent commitment to reconcile predicted immediacy of conciliatory behavior reported 8 days later. That is, perpetrators using mental contrasting and having high expectations of success formed a strong commitment to reconcile and performed conciliatory behavior right away. With low expectations of success, they formed only weak commitment to reconcile and delayed the performance of conciliatory behavior or did not perform it at all. This predictive relation was weaker if perpetrators thought about their concern in an indulging, dwelling or reverse contrasting mode of thought.

Furthermore, for mental contrasting participants, expectancy-dependent immediacy of conciliatory behavior predicted successful reconciliation with the victim. That is, perpetrators using mental contrasting and having high expectations of success performed conciliatory behavior right away and reported having successfully reconciled with the victim. With low expectations of success, they delayed the performance of conciliatory behavior and did not report having successfully reconciled with the victim. This predictive relation was weaker if perpetrators thought about their concern in indulging, dwelling or reverse contrasting modes of thought.

The results of Study 1 suggest that spontaneous mental contrasting is an effective mode of thought for perpetrators in the aftermath of an interpersonal transgression. They are in line with findings from previous studies (Sevincer and Oettingen 2013; Sevincer et al. 2015) which show that spontaneous mental contrasting relates to effective self-regulation of pursuing a desired future. Compared to the studies by Sevincer and colleagues in which only 10–27% participants spontaneously engaged in mental contrasting, in the present research, a relatively high percentage of people spontaneously engaged in mental contrasting (39%). This result might speak to the findings by Kappes et al. (2011) who showed that sad mood facilitates the spontaneous use of mental contrasting, presumably because sad mood signals a need to solve a problem at hand. Thinking about an unresolved, important interpersonal concern that elicits feelings of guilt might facilitate the spontaneous use of a problem-solving strategy, such as mental contrasting. This interpretation is in line with recent findings by Sevincer et al. (2015), showing that the spontaneous use of mental contrasting tends to be heightened when an impending task implies a strong demand to act.

In Study 1, we showed that mentally contrasting the benefits of reconciliation with the obstacles standing in the way of a successful reconciliation predicted wise conciliatory behavior: when expectations to successfully reconcile were high, participants were strongly committed to reconcile and showed immediate conciliatory behavior, whereas when expectations to successfully reconcile were low, participants were only weakly committed and postponed their conciliatory behavior. In Study 2, we wanted to extend those findings regarding several aspects: first, whereas in Study 1 we had used a correlational design measuring participants' spontaneous mode of self-regulatory thought, in Study 2, to probe causality, we employed an experimental design and induced (vs. measured) participants' modes of self-regulatory thought. Second, whereas in Study 1 we had invited single participants to the study who self-reported on their conciliatory behavior, in Study 2, we wanted to assess actual conciliatory behavior in the lab. Specifically, we invited romantic couples into our lab and video recorded their discussion about an interpersonal transgression within their relationship. We aimed to test if the conciliatory behavior of the perpetrator would be recognized by the victim of the transgression, and would thereby predict successful reconciliation.

Study 2: reconciliation in romantic relationships

In Study 2, we invited romantic couples into the lab and observed their interactions while they discussed an interpersonal concern in their relationships. Couples were first asked to identify an unresolved incident in their relationship and to indicate their expectations of successfully reconciling this incident with their partner. This time, we manipulated the perpetrators' mode of thought (mental contrasting vs. indulging). After perpetrators either mentally contrasted or indulged about successfully resolving the incident, the couples were led to discuss the incident in front of a video camera. As dependent variable, we observed the conciliatory behavior of both partners from both the perpetrators' and the victims' perspectives. Furthermore, two independent raters watched the videotaped discussion and rated the degree of the conciliatory behavior of both parties (e.g., "He/she spoke gently to his/her partner"). Additionally, we assessed self-reported reconciliation (e.g., "My partner and I successfully resolved the concern") as perceived by both the perpetrator and the victim directly following the discussion as well as 2 weeks later, to capture the longer-term effects on reconciliation.

We hypothesized that perpetrators in the mental contrasting condition would show conciliatory behavior more in line with their expectations of success than perpetrators in the

indulging condition. That is, perpetrators in the mental contrasting condition should perform conciliatory behaviors if they have high expectations of successfully approaching the victim, but they should refrain from approaching the victim in a conciliatory way if they have low expectations of success. Thus, mental contrasting should lead participants to show sensible conciliatory behavior. Further, we hypothesized that the perpetrator's sensible conciliatory behavior would be recognized by the victim of the transgression. Specifically, the victims' self-report of successful reconciliation should depend on the perpetrators' conciliatory behavior, even when statistically controlling for the interdependence of perpetrators' and victims' conciliatory behaviors (due to the partners' shared experience and history). Finally, we hypothesized that perpetrators' expectancy-dependent conciliatory behavior predicts the dyads' reconciliation right after the experiment as well as 2 weeks later.

Method Study 2

Participants

Fifty-one couples were recruited for participation via advertisements on a university campus and an online job exchange. To participate, couples had to be in a relationship for at least 1 year and currently live together. Each couple received 30 Euro for their participation. Participants' mean age was 25.80 years ($SD = 5.11$). On average, they had been in their current relationship for 3.91 years ($SD = 2.35$) and were living together for 2.02 years ($SD = 2.21$).

Procedure and measures

By signing the informed consent, participants agreed that they would be videotaped while interacting with their partners during the study. Separated from each other, both partners had to write down three incidents from the last 4 months in which their partner had broken the rules of the relationship. Participants were informed that the experimenter would randomly choose one of the six incidents for the videotaped discussion. The instructions participants received were based on Hannon et al. (2010).

> All of us have expectations about how our partners should treat us. No matter how well behaved your partner may be in general, from time to time he or she is likely to "break the rules." For example, your partner may tell a friend something that you think should have remained private; your partner may do something that is hurtful behind your back; your partner may flirt with another person, or your partner may otherwise violate the rules that govern your relationship.

After each partner identified and described three incidents in which he or she was the victim and the partner was the perpetrator, they were asked to indicate how upsetting the incident was ("How upsetting was it?") and how resolved the incident was ("How resolved is it?") on a Likert scale ranging from 1 (*not at all*) to 8 (*very*). On average, participants reported their incidents to be moderately upsetting ($M = 3.98$, $SD = 2.06$). Further, the reported incidents were, on average, moderately resolved ($M = 5.84$, $SD = 1.87$).

We randomly chose an incident from one of the partners that he or she had rated as moderately upsetting and not fully resolved. All participants reported at least one incident that met these requirements. The description of the chosen incident was read to each partner separately, and they had to agree to discuss the chosen incident with their partner before we continued.

Incentive value and expectations of success

Following, we assessed the incentive value and the expectations of resolving the interpersonal concern. Both partners answered the following three questions on Likert scales ranging from 1 (*not at all*) to 7 (*very*): "How important is it to you to resolve the interpersonal concern with your partner?" (Incentive value), "How likely do you think it is that the interpersonal concern with your partner is resolvable?" and "How likely do you think it is that you can resolve the interpersonal concern with your partner?" (Expectations of success; Cronbach's $\alpha = .89$). On average, participants reported high expectations ($M = 5.77$, $SD = 1.43$) and moderate to high incentive value ($M = 4.62$, $SD = 1.02$) to resolve the interpersonal concern.

Manipulation of the self-regulation strategy

The perpetrator was randomly assigned to one of two self-regulation strategies: mental contrasting ($n = 25$) or indulging ($n = 26$). Participants in both conditions received instructions to identify the most positive aspect they associated with having resolved the interpersonal concern ("What would be the most positive aspect if you had resolved the interpersonal concern with your partner? Please write down your most positive aspect in one or two words") and to elaborate on this aspect ("Imagine your most positive aspect as vividly as possible. Give your thoughts free reign and take as much time and space as you need to describe the scenario"). Participants in the mental contrasting condition were then asked to identify the most important obstacle standing in the way of resolving the interpersonal concern ("Sometimes things do not work out as we would like them to. Which obstacle on your side stands in the way of resolving the interpersonal concern with your partner? Please name your most important obstacle"), and to elaborate on this obstacle ("Imagine

the obstacle as vividly as possible. Give your thoughts free rein and take as much time and space as you need to describe the scenario"). Participants in the indulging condition were asked to identify another positive future aspect ("What would be the second most positive aspect if you had resolved the interpersonal concern with your partner? Please write down the second most positive aspect in one or two words"), and to elaborate on this second positive aspect ("Imagine your second most positive aspect as vividly as possible. Give your thoughts free rein and take as much time and space as you need to describe the scenario"). While the perpetrator performed the assigned self-regulation strategy, the victim was occupied with an irrelevant filler task (d2 test of attention; Brickenkamp 2002).

Conciliatory behavior

Both partners were then guided into another room and placed on opposite sides of a table. They were instructed to discuss the chosen incident for 8 min. The experimenter left the room, and the interaction was videotaped.

Behavioral observation of conciliatory behavior After the videotaped interaction, both partners watched the videotaped discussion separately. The video was paused every 2 min and participants rated their conciliatory behavior and their partner's conciliatory behavior within the previous 2 min. Based on Hannon et al. (2010), we assessed victims' and perpetrators' conciliatory behavior with six statements, each rated on a Likert scale ranging from 1 (*strongly disagree*) to 8 (*strongly agree*). The six statements were "I behaved in a cold manner with my partner" (reverse coded), "I spoke gently/sympathetically to my partner," "I wanted to keep as much distance between us as possible" (reverse coded), "I tried to comfort my partner", "I raised my voice toward my partner" (reverse coded), "I wanted to cut off the interaction" (reverse coded). For the rating of the partner's behavior, the same items were used with the subject and object reversed. Two independent raters unaware of the hypotheses used the same items to assess victims' and perpetrators' behavior from the videotapes. In sum, the conciliatory behavior of each participant (victims and perpetrators) was rated by four people from three different perspectives: from their own perspective, their partner's perspective, and from the perspective of the two independent raters.

Data preparation For the assessment of conciliatory behavior, three of the statements were excluded from analyses because they showed very little variance (scores ranged from 0 to 0.3 on a scale from 0 to 8) from all three perspectives (self-rating, partner-rating, and independent-rating). These items were (1) comforting the partner, (2) raising the voice towards the partner and (3) wanting to cut off the interaction. The adapted scales for conciliatory behavior included the items measuring (1) behaving in a cold manner, (2) speaking sympathetically, and (3) keeping distance. The scales' internal consistencies ranged from Cronbach's $\alpha = .60$ to .80 within the 2-min sequences, and Cronbach's $\alpha = .92$ to .96 for the total 8 min. These consistencies were not further increased or decreased if the three excluded items were included. The two independent ratings of conciliatory behavior showed good inter-rater reliability ($rs > .94$ for each of the 2-min sequences). Therefore, we used the average of the two ratings for all further analysis.

Reconciliation Reconciliation was assessed two times and from two perspectives (i.e., from the perpetrators' and victim' perspectives). It was assessed right after participants watched the videotape and 2 weeks later via an online survey. Both perpetrators and victims were asked to indicate on a Likert scale ranging from 1 (*not at all*) to 8 (*very*) how much they agreed with these four statements: "My partner and I successfully resolved the concern", "I am satisfied with the course of the discussion", "I am satisfied with the result of the discussion", and "The concern is completely resolved" (Cronbach's $\alpha_{T1} = .93$ and $\alpha_{T2} = .89$).

Results Study 2

Descriptive analyses

Of the 51 dyads, one dyad did not follow the instructions (i.e., they did not elaborate on the interpersonal conflict) and was therefore excluded. From the remaining 100 participants, 7 perpetrators and 3 victims did not answer the online follow-up survey containing the second measure of reconciliation. We excluded these participants from the analyses that relate to the measure of reconciliation at Time 2 but kept them in the analysis for Time 1. A paired samples *t* test showed that victims and perpetrators differed only in their incentive value to resolve the concern, with a higher incentive value for perpetrators ($M = 5.66$, $SD = 1.41$) than for victims ($M = 4.86$, $SD = 1.74$), $t(49) = 2.60$, $p = .012$. The ratings of victims' and perpetrators' conciliatory behaviors were fairly consistent across the three different perspectives, with self-ratings, partner-ratings, and independent person-ratings being highly correlated ($rs = .50–.75$, $ps < .001$). Therefore, we collapsed the ratings from all three perspectives into two single indices of conciliatory behavior, one for the

perpetrators' conciliatory behavior and one for the victims' conciliatory behavior.

Expectancy-dependent conciliatory behavior

We hypothesized that the link between perpetrators' expectations of success and their conciliatory behavior would be stronger in the mental contrasting than in the indulging condition. We applied a general linear model with conciliatory behavior as the dependent variable and entered incentive value, expectations of success, condition and the interaction term of expectations of success and condition as predictors. We found a main effect for incentive value, $F(1, 45) = 13.08$, $p = .001$, $\eta_p^2 = .23$. There were no significant main effects for condition, $F(1, 45) = 3.81$, $p = .057$, $\eta_p^2 = .078$, or expectations of success, $F(1, 45) = 3.53$, $p = .067$, $\eta_p^2 = .07$. The predicted interaction effect of expectations and condition, $F(1, 45) = 3.98$, $p = .052$, $\eta_p^2 = .08$ also did not reach significance. However, in the mental contrasting condition, the relation between expectations of success and conciliatory behavior was different from zero, $b = 0.35$ ($SE = 0.14$), $p = .015$, 95% CI [0.07, 0.62]. There was no significant relation between expectations of success and conciliatory behavior in the indulging condition, $b = -0.005$ ($SE = 0.12$), $p = .968$, 95% CI [− 0.24, 0.23].[4]

Conciliatory behavior and reconciliation

We further wanted to test if the perpetrators' conciliatory behavior is recognized by the victim. We hypothesized that the reconciliation of victim and perpetrator would mainly depend on perpetrators' conciliatory behavior: the more conciliatory behavior perpetrators show, the more reconciliation victims and perpetrators should report. To test this hypothesis, we applied an Actor–Partner Interdependence Model (Kenny et al. 2006) that takes the non-independence of the data into account. Our data should be dependent for several reasons. The dyads we investigated had been in a relationship for more than 3 years on average, which means they share a common history and are likely to share similar attitudes and values. Furthermore, the couples discussed an unresolved incident in which both had been involved. Third, the discussion of the incident was interactive. Therefore, the observed conciliatory behavior and the self-reported reconciliation of both members of a dyad should be influenced by the relationship history and the present behavior of the partner.

[4] We repeated the analyses with both the main effect of incentive value and the interaction between incentive value and condition. Whereas the main effect of incentive value on conciliatory behavior was significant, the interaction between incentive value and condition was not significant for conciliatory behavior, $F(1, 44) = 0.65$, $p = .423$.

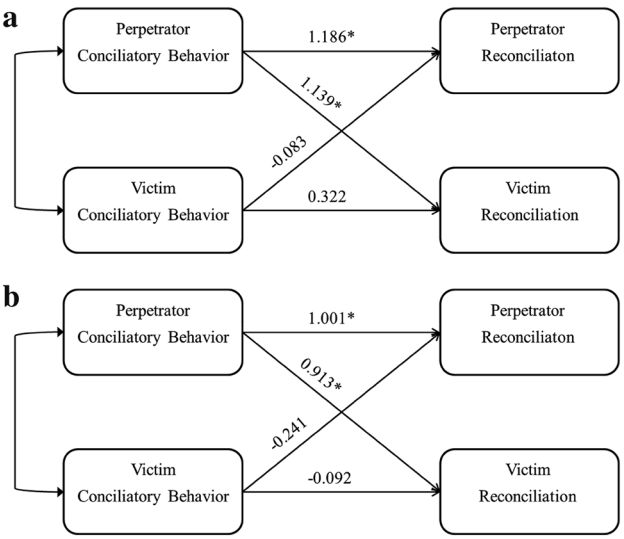

Fig. 2 Study 2: Actor–Partner Interdependence Model linking perpetrator and victim conciliatory behavior to perpetrator and victim reports of reconciliation at Time 1 (Panel **a**) and Time 2 (Panel **b**). Numbers represent unstandardized b-values. *$p < .05$

To formally test the non-independence of our data, we calculated the correlations between victim and perpetrator conciliatory behavior as well as victim and perpetrator reconciliation. We followed the recommendation by Kenny et al. (2006) and calculated partial correlations adjusting for gender. The partial correlations between victim- and perpetrator conciliatory behaviors (from all three perspectives, i.e., perpetrator, victim, and the two independent raters), as well as victim- and perpetrator reconciliation were medium to high, $rs > .48$, $ps < .01$, indicating dependence of the data.

We used a multilevel modeling approach with a two-intercept model to estimate the Actor–Partner Interdependence Model. Carried out with one independent variable (conciliatory behavior), one dependent variable (reconciliation), and the two distinguishable members of a dyad (victim and perpetrator), the Actor–Partner Interdependence Model estimates four effects. Two effects are actor-effects, representing the influence of victim conciliatory behavior on victim reconciliation and perpetrator conciliatory behavior on perpetrator reconciliation. The other two effects are partner-effects; they represent the influence of victim conciliatory behavior on perpetrator reconciliation and perpetrator conciliatory behavior on victim reconciliation.

The results of the Actor–Partner Interdependence Model revealed that only perpetrator conciliatory behavior was predictive of victims' and perpetrators' report of reconciliation (Fig. 2). Victim conciliatory behavior did not affect perpetrators' or victims' reports of reconciliation. Importantly, the effects were maintained over the course of 2 weeks: the conciliatory behavior of the perpetrator was predictive of

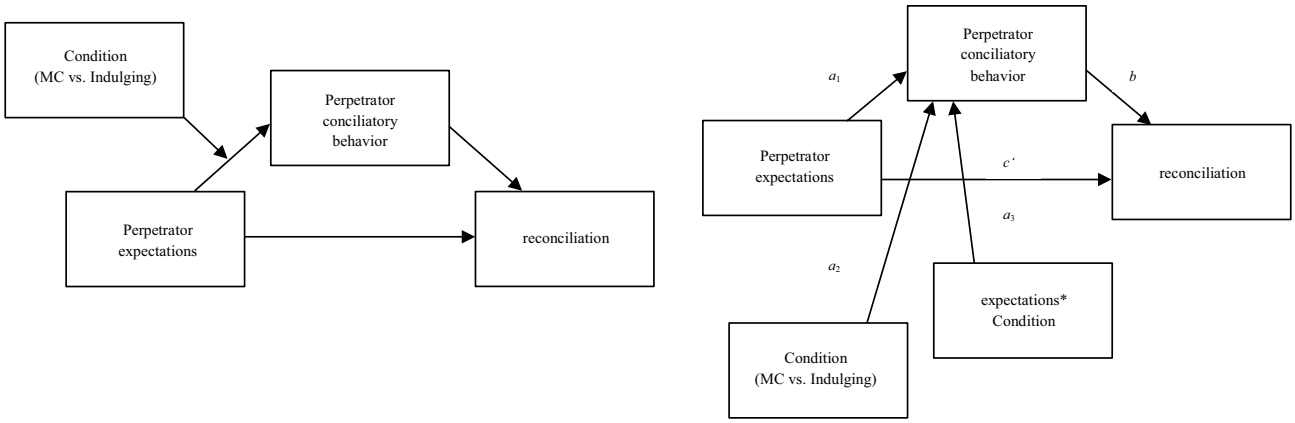

Fig. 3 The conceptual moderated mediation model (left) and the statistical moderated mediation model (right) estimating the association between perpetrators' expectations and reconciliation via perpetrators' conciliatory behavior, moderated by condition (MC vs. indulging) in Study 2

reconciliation right after the discussion of the incidents (T1) as well as 2 weeks later (T2).

Mental contrasting: expectancy-dependent conciliatory behavior predicts reconciliation 2 weeks later

In a first step, we showed with the general linear model that the effect of perpetrator expectations of success on perpetrator conciliatory behavior was moderated by the self-regulatory strategy (mental contrasting vs. indulging). Perpetrators in the mental contrasting condition showed expectancy-dependent conciliatory behavior, whereas perpetrators in the indulging condition were not guided by their expectations of successfully resolving the interpersonal concern. In a second step, using an Actor–Partner Interdependence Model, we showed that perpetrator conciliatory behavior was predictive of the victim and perpetrator reports of reconciliation. The more conciliatory behavior perpetrators performed, the more reconciliation victims and perpetrators reported directly following the discussion and 2 weeks later, indicating that the effects were maintained over time.

In a final step, we wanted to test whether mental contrasting participants' expectancy-dependent conciliatory behavior predicts the reconciliation reported by the dyads right after the experiment as well as 2 weeks later. We conducted two moderated mediation analyses (Hayes 2013; Model 7). In the first model, we tested the short-term effects of mental contrasting on reconciliation and specified reconciliation at Time 1, right after the experiment, as the dependent variable. In the second model, we tested the long-term effects and specified reconciliation at Time 2, 2 weeks later, as the dependent variable. In both models, we specified perpetrator expectations of success as the predictor, and perpetrators' conciliatory behavior as the mediator. The self-regulation strategy (mental contrasting vs. indulging) was specified as the moderator, qualifying the association between expectations of success and perpetrators' conciliatory behavior (for a depiction of the models see Fig. 3). We statistically controlled for incentive value in both models.

In the first model, the moderated mediation was significant $b = -.44$ ($SE = 0.22$), 95% CI [− 0.89, − 0.04] (a_3b-path). The mediation was significant for participants in the mental contrasting condition, $b = .43$ ($SE = 0.18$), 95% CI [0.10, 0.78], but not for participants in the indulging condition, $b = -.01$ ($SE = 0.16$), 95% CI [− 0.34, 0.32]. That is, for mental contrasting participants, expectations of success had an indirect effect on reconciliation mediated by conciliatory behavior. The higher their expectations, the more conciliatory behavior perpetrators performed and the stronger the reconciliation reported by the dyads at Time 1. See Table 3 for regression coefficients of all paths of the statistical model.

In the second model, the moderated mediation was significant $b = -.30$ ($SE = 0.18$), 95% CI [− 0.70, − 0.01] (a_3b-path). The mediation was significant for participants in the mental contrasting condition, $b = .28$ ($SE = 0.15$), 95% CI [0.04, 0.63], but not for participants in the indulging condition, $b = -.02$ ($SE = 0.10$), 95% CI [− 0.27, 0.13]. That is, for mental contrasting participants, expectations of success had an indirect effect on reconciliation mediated by conciliatory behavior. The higher their expectations, the more conciliatory behavior perpetrators performed and the stronger the reconciliation reported by the dyads at Time 2,

Table 3 Study 2: conditional process model with reconciliation at Time 1

Predictor	Estimate	*SE*	*t*	*p*
Conciliatory behavior (mediator)				
Constant	− 0.442	1.813	− 0.244	.809
Incentive value	0.364	0.101	3.617	< .05
Expectations (perpetrator)	0.698	0.293	2.384	< .05
Condition	2.011	1.031	1.951	.057
Expectations × condition	− 0.351	0.176	− 1.995	.052
Reconciliation T1 (dependent variable)				
Constant	− 4.565	1.451	− 3.147	< .05
Incentive value	0.180	0.211	0.856	.397
Conciliatory behavior (perpetrator)	1.228	0.268	4.583	< .05
Expectations (perpetrator)	0.295	0.172	1.716	.093

Conditional effects at condition = 0 and 1

Condition	Bootstrap indirect effect	Bootstrap SE	95% CI bias corrected
0 (Mental contrasting)	0.425	0.176	(0.099, 0.800)
1 (Indulging)	− 0.006	0.165	(− 0.310, 0.332)

The relation of expectations of success (perpetrator) and reconciliation (dyad) mediated by conciliatory behavior (perpetrator) and moderated by condition. Unstandardized regression coefficients are reported. Full model $R^2 = .342$. Bootstrap sample size = 1000

Table 4 Study 2: conditional process model with reconciliation at Time 2

Predictor	Estimate	*SE*	*t*	*p*
Conciliatory behavior (mediator)				
Constant	− 0.805	2.011	− 0.400	.691
Incentive value	0.355	0.104	3.425	< .05
Expectations (perpetrator)	0.764	0.327	2.338	< .05
Condition	2.250	1.128	1.994	.053
Expectations × condition	− 0.394	0.192	− 2.049	< .05
Reconciliation T2 (dependent variable)				
Constant	0.007	1.147	0.006	.995
Incentive value	0.229	0.163	1.405	167
Conciliatory behavior (perpetrator)	0.762	0.208	3.659	< .05
Expectations (perpetrator)	0.048	0.163	0.351	.727

Conditional effects at condition = 0 and 1

Condition	Bootstrap indirect effect	Bootstrap SE	95% CI bias corrected
0 (Mental contrasting)	0.283	0.145	(0.038, 0.627)
1 (Indulging)	− 0.018	0.102	(− 0.266, 0.131)

The relation of expectations of success (perpetrator) and reconciliation (dyad) mediated by conciliatory behavior (perpetrator) and moderated by condition. Unstandardized regression coefficients are reported. Full model $R^2 = .331$. Bootstrap sample size = 1000

2 weeks later. See Table 4 for regression coefficients of all paths of the statistical model.

In sum, both conditional process analyses supported our model. As predicted, in the mental contrasting condition, perpetrators' expectations of success had an indirect effect on reconciliation reported by the dyads—right after the experiment and 2 weeks later—mediated by the perpetrators' conciliatory behavior.

Discussion Study 2

In Study 2, we conceptually replicated the findings from Study 1 in an experimental design which allowed us to draw more causal conclusions. Specifically, we showed that perpetrators in the mental contrasting (vs. indulging) condition engaged in expectancy-dependent conciliatory behavior, which, in turn, predicted the dyads' reconciliation right after the discussion as well as 2 weeks later. Importantly, we also showed that the perpetrator's conciliatory behavior gets acknowledged by the victim. In contrast to Study 1, participants in Study 2 were romantic couples who had committed relationships (for at least 1 year and were living together), and we targeted one of their existing interpersonal concerns. We used objectively assessed behavioral measures of conciliatory behavior based on multi-perspective ratings. We had two sets of reports of reconciliation from perpetrators and victims, right after the experiment and 2 weeks later. It should be noted that, due to experimental constraints, our sample of romantic couples was relatively small. Future studies should replicate the results with a larger sample of dyads.

General discussion

In two studies mental contrasting, both used spontaneously and induced experimentally, led to sensible conciliatory behavior: participants committed and acted in line with their expectations to successfully solve their interpersonal transgression. By taking their expectations into account, they invested a lot and acted quickly if chances to reconcile where high and refrained from acting when expectations were low.

Expectancy-dependent conciliatory behavior

Why is it beneficial to perform conciliatory behavior that is in line with expectations of success? One might argue that in the aftermath of interpersonal transgressions, the perpetrator should perform the conciliatory behavior, no matter what. However, as explained above, conciliatory behavior has to be wholehearted, sincere and well-timed to foster reconciliation. An apology that is too soon or dishonest can harm the victim, the perpetrator, or their relationship. That is why perpetrators should only approach the victim if they expect that they can perform an appropriate conciliatory behavior and that the victim is disposed to receive it. Mental contrasting is a strategy that enables perpetrators to consider their expectations of successful reconciliation and to perform the appropriate conciliatory behavior; if they have high expectations, they perform a strong conciliatory behavior, and if they have low expectations, they refrain from approaching the victim.

Low incentive value

Applying mental contrasting to reconciliation implies that perpetrators have some insight regarding their transgression and that they would like to reconcile. If perpetrators have no such insight, other interventions before mental contrasting may provide individuals with some understanding of their transgression. For example, motivational interviewing might increase a person's motivation to change—which means increasing the incentive value of a changed future (Miller and Rollnick 2002). Over the last two decades, motivational interviewing has been adapted to treat perpetrators in the criminal justice system (Austin et al. 2011; Ginsburg et al. 2002; McMurran 2009). It is utilized in the criminal justice system to (1) foster perpetrators' insight into their transgressions, (2) to increase their desire for behavior change, and (3) to increase their motivation to attend therapies and treatments (Austin et al. 2011; Mann and Rollnick 1996). After motivational interviewing, mental contrasting could then help perpetrators to fulfil their wish to reconcile by highlighting potential obstacles that might stand in the way of successful reconciliation and by providing perpetrators insight on how to overcome those obstacles.

Severity of transgressions and ecological validity

In the present research, most participants reported mild transgressions, such as going to a party instead of shepherding the sick partner, flirting with another person, or using a white lie. The effectiveness of mental contrasting should be further investigated with severe transgressions such as in perpetrators involved in criminal justice cases. The present study was conducted in a laboratory setting, although the couples discussed and resolved real-world individualized transgressions. Discussing the unresolved transgression in front of a video camera might have led participants to show socially desirable behavior. However, this argument should apply to participants of both the experimental and the control group. One other limitation of the present research is that in both studies, the focal predictor (expectations of success) was only measured on a two-item scale and the covariate (incentive value) was measured as a single item. This is a concern because those scales might suffer from unreliability and are likely unable to capture the full spectrum of the construct of interest. Future research should investigate the effects of mental contrasting on conciliatory behavior in the workplace, in the home, and in other everyday settings and should further conceptually replicate the findings using different scales of measurement.

Conclusion

In the aftermath of an interpersonal transgression, conciliatory behavior in the form of seeking or granting forgiveness is key to reconciliation. To mend the relationship and to increase the psychological well-being of both partners, the perpetrator needs to perform wholehearted, sincere, and well-timed conciliatory behaviors (e.g., Jones and Kugler 1993; McCullough et al. 2014; Smith 2008). Sometimes perpetrators struggle with performing such conciliatory behavior. The present research shows that mental contrasting enables perpetrators to wisely self-regulate their conciliatory behavior. Perpetrators who mentally contrast perform prompt and sincere conciliatory behavior if the chances of mending the relationship are high, and they refrain from performing conciliatory behavior if the chances are low. Moreover, their conciliatory behaviors translate into a successful reconciliation. Coming back to the example of Mary and John: based on their relationship in the past, Mary had high expectations that a sincere apology would pave the way for reconciliation. Mental contrasting having successfully made up with her obstacle of feeling ashamed, will enable her to overcome the inner obstacle and approach John with a sincere and meaningful apology.

Compliance with ethical standards

Conflict of interest All authors declares that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the Ethical Standards of the Institutional and/or National Research Committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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