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The Emotional Impact of Forgiveness on Autobiographical Memories of Past Wrongdoings

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Victims of wrongdoing sometimes forgive to repair relationships with the wrongdoer. But how does forgiveness do this? Some have argued that forgiveness changes the way the wrongdoing is remembered. We empirically adjudicate two competing accounts of how forgiveness is related to memory. The *episodic fading* account states that forgiveness alters both the episodic *and* the affective characteristics of autobiographical memories of being wronged. By contrast, the *emotional fading* account states that forgiveness mainly alters the affective characteristics of autobiographical memories of being wronged. While the episodic fading account predicts that forgiveness is associated with less vivid and detailed memories of being wronged, the emotional fading account predicts that forgiveness need not be associated with diminished episodic characteristics. Across four studies ($N = 1{,}479$, after exclusions), we found consistent support for the emotional fading account but not for the episodic fading account. In a pilot study and in Study 1, we found that forgiven wrongs were rated as less affectively intense and less negatively valenced compared to unforgiven wrongs, while there was no difference in the episodic characteristics of the memories. We replicated this finding in Study 2 and additionally found that the valence and intensity of forgiven wrongs are different for the victims of wrongdoings compared to perpetrators. Finally, in Study 3, we found once again different ratings of intensity and valence for forgiven relative to not forgiven wrongs and, additionally, we found that the affective characteristics of remembered forgiven wrongs were associated with diminished tendencies toward seeking revenge and avoiding the wrongdoer along with amplified benevolence toward the wrongdoer. In sum, memories of forgiven wrongs consistently differed in their affective, but not their episodic, characteristics relative to memories of wrongdoings that were not forgiven.

Public Significance Statement

Forgiveness is a powerful response to wrongdoing. But what precisely are the psychological processes underlying forgiveness? We examine the idea that forgiveness works by changing how we remember being wronged. Specifically, we find that forgiveness makes the memory of being wronged less emotionally intense and less negatively valenced. As these memories change, people report feeling more benevolent toward wrongdoers and less willing to avoid or seek revenge against them. Forgiveness, however, does not seem to affect how well the content of the past wrongdoing is remembered. Thus, forgiveness seems to operate through a process of emotional change that helps us to feel differently when remembering being wronged.

Keywords: memory, forgiveness, emotion, morality

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continued

People have wronged each other all throughout human history and continue to do so with remarkable frequency (Hofmann et al., 2014). Yet, they also manage to reconcile and forgive each other, even in the face of unspeakable pain (McCullough, 2008). Consider the case of Rafael Posso, in Colombia, a country that has been ravaged by violence stemming from an armed conflict between guerilla, paramilitary, and other armed groups lasting nearly 60 years. Rafael is one of many who has suffered devastation from the conflict. Three of his family members were murdered in 2000 in the massacre of Las Brisas during a paramilitary raid (Centro Nacional de Memoria Histórica, 2016). Telling the story recently, he vividly remembers the image of his dead relatives strapped to saddles after being beheaded. Rafael felt intense and burning rage. He swore to seek revenge. But now, years later, he has forgiven the murderers and no longer harbors resentment. His testimony, like that of many others who have experienced great suffering, reflects an astounding capacity to forgive. A victim of serious wrongdoing, Rafael has—if we take him at his word—forgiven the perpetrators.

When asked about it, Rafael says that he now feels differently about the massacre: sadness is what he now experiences, not rage; he now seeks closure, not revenge. But he also claims that these changes are not due to his forgetting what happened. On the contrary, to this day, he vividly remembers the exact events that unfolded that fateful day, forcefully endorsing a common refrain among the Colombian victims of the armed conflict: "We forgive, but we don't forget" (Centro Nacional de Memoria Histórica, 2016, p. 393). Rafael's experience points to an important but underdiscussed phenomenon associated with the psychological experience of forgiveness: When a victim forgives the perpetrator of a wrongdoing, they likely still remember the experienced event, yet remembering it does not elicit the same emotional experience it once did.

The Role of Memory in Forgiveness

What are the processes underlying the change one experiences when remembering past wrongs whose perpetrators one has forgiven? This question lies at the core of the very concept of forgiveness, which moral philosophers have long understood as a process that essentially involves emotional change and the relinquishing of hostile attitudes toward wrongdoers. These emotional accounts of forgiveness, as they are often called, can be traced back to Bishop Joseph Butler's (1726) sermons on forgiveness and resentment, where he held that forgiveness consists in the forswearing or overcoming of feelings of resentment (Hughes, 1993; Murphy & Hampton, 1988). Recent developments in the psychology and the philosophy of memory and forgiveness suggest at least two possible accounts to understand the psychological processes underlying this affective change. One proposal suggests that forgiveness' emotional change is underwritten by mechanisms of *episodic fading* (Blustein, 2014; Boleyn-Fitzgerald, 2002; Noreen et al., 2014). According to this account, episodic autobiographical memories (i.e., memories of spatiotemporally specific episodes from one's personal past) of wrongdoings one has not forgiven are more frequently and actively remembered than memories of forgiven wrongs. The repetitive rehearsal of episodic autobiographical memories of not forgiven wrongs in turn prevents the remembered episodic details from fading away and losing their vivacity. However, when we forgive, we ruminate on and recollect the event less often, and thus the episodic details of the remembered past wrongdoing fade away, becoming less vivid and less detailed. As a result of this episodic fading, the affect and the intensity of the emotions elicited by a fading mnemonic representation will, in turn, decrease. The critical empirical prediction of this *episodic fading* account of forgiveness is that forgiven wrongs should be remembered less clearly, with less detail, and with lower vivacity relative to wrongs that have not been forgiven.

In contrast to the *episodic fading* account, a more recent proposal holds that forgiveness is accompanied *only* by changes in the emotional aspects of the remembered wrong rather than in the mnemonic representation (Amaya, 2019). This *emotional fading* account suggests that forgiveness selectively helps to modify the affective reactions to our remembered wrongs—by, for instance, emotionally reappraising them—while leaving the episodic components of the memory unscathed. The psychological viability of this view is supported not only by research showing the emotional malleability of reactivated episodic autobiographical memories (Haubrich & Nader, 2018) but also by recent findings revealing cognitive and neural differences in their episodic and affective components—extant evidence of their tight association notwithstanding (McGaugh, 2018). It has been shown, for instance, that while the episodic components of an autobiographical memory depend on the external context—such as the location in which the remembered event took place or the precise arrangement of the people or objects in a scene—the emotional aspects depend instead on one's internal context (e.g., thoughts and affective reactions) and that these differences in encoding conditions are supported by different neural circuits (Williams et al., 2022). The decoupling of episodic and emotional aspects of autobiographical memories is further supported by studies showing how sleep, for instance, can increase recognition accuracy while decreasing affect and arousal when retrieving emotional stimuli (Lipinska & Thomas, 2019). As such, the *emotional fading* account of forgiveness predicts that forgiving a past wrongdoing does not necessarily affect the vivacity or how well the episodic details of the event are remembered; instead, it might influence only the affect experienced during retrieval.

Extant empirical evidence, however, is insufficient to adjudicate between these two different empirical predictions of emotional accounts of forgiveness. Indeed, despite much psychological

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research on clinical and therapeutic aspects of forgiveness (Worthington & Wade, 2020), very little is known about the precise cognitive mechanisms that underlie the process of forgiving (Lichtenfeld et al., 2015) and less so about the role of memory in facilitating affective change for forgiven wrongdoings and perpetrators. For instance, a recent review on the positive aspects of forgetting (Fawcett & Hulbert, 2020) lists only three studies directly exploring either the effect of forgiving on subsequent memory or the effect of memory on subsequent forgiving. In the first study, Noreen et al. (2014) asked participants to imagine being the victim of a hypothetical wrongdoing and whether they would have forgiven the imagined perpetrator. Then, using a variant of a think/no-think task, they found that participants that would have forgiven the imagined perpetrator remembered fewer details of the hypothetical wrong if they were asked to intentionally forget it (i.e., no-think condition) as opposed to just think about it. In a related study (Sell, 2016), participants read stories of wrongdoings broken down into sentences, after each of which they were instructed to either try to remember it or to forget it. Sell found that participants were more likely to forgive the perpetrator if they were instructed to intentionally forget the details of the story than if they were instructed to remember them. Finally, a third study (Lichtenfeld et al., 2015) asked participants to read two hypothetical wrongdoings followed by 20 words describing the imagined perpetrator, half of which were relevant to the wrongdoing. Participants were then asked to engage in decisional forgiveness (i.e., the unemotional intention to not seek revenge and restore the relationship), emotional forgiveness (i.e., the attempt to forgive via emotionally empathizing with the perpetrator), or received no manipulation. The researchers found that, after a distraction task, participants who engaged in emotional forgiveness remembered fewer wrongdoing-relevant words in the emotional forgiveness condition relative to the decisional forgiveness and baseline conditions.

Limitations of Previous Studies on Memory and Forgiveness

Although informative, these studies are importantly limited. For one, in these experiments, *all* the wrongdoings are hypothetical. As such, participants are asked to remember details of mental simulations of events they imagined, not events they actually experienced. In fact, Noreen et al. (2014) report that "no participants indicated having experienced similar incidents to any of the hypothetical scenarios depicted" (p. 1297). Unfortunately, there is ample evidence detailing differences in our memories of imagined versus experienced episodes. Several studies have shown, for instance, that memories of imagined scenarios are experienced with fewer and less vivid sensory, spatial, contextual, and emotional qualities than memories of events that were actually experienced (De Brigard & Giovanello, 2012; Johnson, 1991). Conversely, relative to remembering actually experienced episodes, memories for imagined scenarios tend to be experienced with more information about the cognitive operations that accompanied the encoding process, such as the goals one was engaged in when first imagining the episode or whether one was simply day-dreaming or mind wandering (Johnson, 1988, 2006). Moreover, intentional forgetting may work differently for fictitious events participants are asked to imagine anew in an experimental setting, relative to actual autobiographical events from the participants' past; in fact, there is little evidence to the effect that think/no-think manipulations are equally effective when it comes to actual autobiographical memories (De Brigard, 2024; Otgaar et al., 2020). As a result, given how different memories of imagined versus experienced events are, it is unclear whether any of the results mentioned above carry over to autobiographical memories of actual past experiences.

A second limitation pertains to the small size of the experimental samples. The study by Noreen et al. (2014) included only 30 participants, for instance, and the study by Lichtenfeld et al. (2015) had a sample size of 42. Since such low samples limit the scope of the conclusions that can be drawn from these results (Rad et al., 2018), further studies need to be conducted with larger sample sizes. A third limitation of the abovementioned studies is that, in the experiments in which memory measures are treated as independent variables, the manipulations only involved intentional forgetting. The problem is that intentional forgetting is a rather circumscribed, limited, and controlled strategy to modify the retention of information in memory (Anderson & Green, 2001), and it has been shown to differ from other mechanisms of forgetting, such as recognition-induced forgetting (i.e., when remembering one item can inhibit the recognition of a related one), which instead of being under the participant's volitional control is elicited by the unintentional activation of associated information (Scotti & Maxcey, 2021). Thus, it is unclear whether memory effects found with a laboratory-based intentional forgetting manipulation generalize to the experience of remembering past autobiographical events that have been subject to the less controlled processes of memory decay and fading over time.

This last point, in fact, relates to a final limitation of the studies mentioned above: in all cases, the retention interval between the manipulation and the final measures—whether retrieval rate or forgiveness inclination—was rather short, spanning from a few minutes to just a few days. But this feature differs in two critical ways from ordinary instances of forgiving. First, the most up-to-date evidence we have from clinical psychology strongly suggests that forgiveness in everyday life is a protracted process, even in therapeutic contexts. In fact, recent meta-analyses indicate that to achieve even a small benefit from well-validated therapeutic interventions to promote forgiveness, individuals need many sessions spanned over several weeks (Wade et al., 2014; Wade & Tittler, 2021). Therefore, it is unlikely, or at least unclear, whether the interventions used in the reviewed studies could have effects beyond the short time intervals in which they were tested. Second, given that ordinary forgiveness typically takes time, and given many well-documented results showing significant differences in the accuracy and phenomenology of past autobiographical memories as a function of the length of the retention interval (Inda et al., 2011), it is unlikely, or at least unclear, whether the effects found in the studies just discussed generalize to actual cases of memories for real autobiographical experiences of past wrongs in which the perpetrator was or was not forgiven by the victim.

The Present Studies

Taken together, then, the extant experimental evidence on the relationship between memory and forgiveness is insufficient to adjudicate between the empirical predictions of the *episodic fading* and the *emotional fading* accounts of forgiveness. To help adjudicate between these two views, and to further explore the

relationship between memory and forgiveness, we report here the results of one pilot study and three experimental studies exploring the differences in the recollective experience of past wrongdoings in which the victim either forgave or did not forgive the perpetrator. In the first two studies (Pilot and Study 1), we asked participants to remember past wrongdoings in which they either forgave or did not forgive their perpetrators. We used the Memory Characteristics Questionnaire (MCQ; Johnson, 1988)—a well-known instrument to capture the phenomenology of episodic autobiographical recollection—to identify differences in the phenomenological characteristics of forgiven versus not forgiven remembered wrongs. With this approach, the *episodic fading* account predicts lower ratings for *both* episodic (e.g., sensory, contextual, temporal, and spatial details) and affective (e.g., emotional tone, valence, and intensity at retrieval) characteristics for forgiven wrongs, whereas the *emotional fading* account predicts lower ratings *only* for affective characteristics. As such, for these first two studies, we hypothesized that reductions in both episodic and affective characteristics at retrieval for forgiven relative to not forgiven wrongdoings would speak in favor of the *episodic fading* account, whereas reductions in affective characteristics only, with no difference in episodic aspects, would lend credence to the *emotional fading* account.

In Study 2, we sought to explore a related aspect of emotional accounts of forgiveness. According to some philosophical accounts of forgiveness, when a victim forgives the perpetrator of a wrongdoing, they release them from a moral debt (Nelkin, 2013; Swinburne, 1989; Warmke, 2016). In so doing, victims enable a change in their affective reactions toward both the perpetrator and the remembered past wrongdoing. What is unclear, though, is whether that change in emotion also occurs due to being forgiven. Thus, using a similar approach as in the Pilot and Study 1, in Study 2, we explored differences in the recollective experience of past forgiven and not forgiven wrongs in which participants were either victims or perpetrators. As before, we hypothesized that reductions in both episodic and affective components of the recollective experiences would support the *episodic fading* account, whereas reductions of exclusively affective components at retrieval would instead speak in favor of the *emotional fading* account.

As mentioned, a critical aspect of emotional views of forgiveness is that forgiving essentially involves the relinquishing of certain reactive attitudes toward wrongdoers. More precisely, it involves the forswearing or overcoming of feelings such as resentment, avoidance, and revenge-seeking (Hughes, 1993; Murphy & Hampton, 1988). What is unclear, however, is what psychological processes are implicated in this affective change. Since according to the *episodic fading* account, the emotional change of forgiveness piggybacks on the fading of episodic details of remembered wrongdoings, then it follows that both changes in the remembered emotional characteristics as well as changes in the emotions felt during recollection would be associated with changes in one's reactive attitudes. By contrast, the *emotional fading* account predicts no differences in the remembered characteristics, so only emotions at the time of retrieval would be associated with changes in reactive attitudes. Thus, in Study 3, we explored the association between the affective components of the episodic recollection, both as they pertain to the remembered wrongdoing as well as the act of remembering itself, and the reactive attitudes of revenge, benevolence, and avoidance, as measured by the Transgression-Related Interpersonal Motivations Inventory (TRIM; McCullough et al., 1998).

Transparency and Openness

Study 1 was preregistered at OSF and the preregistration can be found at https://tinyurl.com/4vc4tcym. Study 3 was also preregistered at OSF and the preregistration can be found at https://tinyurl.com/mta8tjse. All anonymized data and scripts for all the experiments reported in this article are available on OSF at https://osf.io/eqrzx/. Any deviations from our preregistrations are indicated in the text. We also explain how we determined sample sizes and which criteria were used for excluding data in each of the experiments reported in this article. All our experiments were approved by the Institutional Review Board at Duke University.

Pilot Study

We first conducted a pilot study for two reasons. First, we wanted to assess whether the MCQ (Johnson, 1988) was appropriate for identifying differences in the recollective experience of forgiven versus not forgiven remembered wrongs. The MCQ measures phenomenological characteristics of autobiographical memories, including their episodic detail, vivacity, valence, intensity, etc. Second, given the novelty of this paradigm, we wanted to have an initial study for calculating sample size in subsequent experiments. Participants were asked to recall times when they were the victims of wrongdoing and either forgave the perpetrator or not. Then, they completed the MCQ. The *episodic fading* account predicts lower ratings for *both* episodic (e.g., sensory, contextual, temporal, and spatial details) and affective (e.g., emotional tone, valence, and intensity at retrieval) characteristics, whereas the *emotional fading* account predicts lower ratings for affective characteristics only.

Method

Participants

Two hundred seven individuals participated voluntarily through the online platform Amazon's Mechanical Turk for monetary compensation. Twenty-one participants were excluded for failing the memory manipulation check (see below for details), and two additional participants were excluded for failing the attention check at the end but not the memory manipulation check (see below for details). So, data for the remaining 184 participants were analyzed (M_{age} = 36.05 years, SD = 10.31 years, age range = 20–68 years; 86 females, 97 males, one other). We collected data until a minimum of 200 participants completed the study, and we analyzed these data only after meeting the sample size target. A sensitivity power analysis showed that the final sample size of 184 participants provides sufficient power (.80) to detect small-to-medium-sized effects for independent t tests (d = .42, two-tailed).

Materials and Procedure

In a between-subjects design, participants were randomly assigned to one of two conditions: *forgiveness* or *no forgiveness*. In the forgiveness condition, participants were asked to recall a personal past event that occurred within the past 10 years where someone else harmed them emotionally or physically and for which they had

forgiven the perpetrator. In the no forgiveness condition, participants were asked to recall a personal past event that occurred within the past 10 years where someone else harmed them emotionally or physically and for which they had *not* forgiven the perpetrator. Participants were instructed to write four to six sentences describing the remembered event. They were told not to use real names or places to ensure confidentiality. Next, they were asked to estimate when the event occurred by month and year (e.g., June 2017). Then, participants were asked to answer the following question "Did you end up forgiving the other person who harmed you emotionally or physically?" and were given the options "Yes," "Maybe," and "No." This question was included as a memory manipulation check, such that only participants who answered "Yes" in the forgiveness condition were included in analyses, and only participants who answered "No" in the no forgiveness condition were included in analyses.

Following this manipulation check, participants were asked to rate how morally wrong they thought the perpetrator's behavior was (1 = *not at all morally wrong*; 7 = *very morally wrong*). Next, participants received the MCQ (Johnson, 1988). The original questionnaire includes 39 questions, but we removed two items: item 24 ("In this event I was: a spectator/a participant"), since participants were instructed to remember events in which they were victims, so this question was potentially confusing, and item 39, which asks about the date of occurrence of the event, since it was asked already at the beginning of the study. All endpoints differed across items, but all items were measured on a 7-point Likert scale (see Supplemental Material for the exact version of the MCQ used).

The study ended with an attention check question: "Do you feel that you paid attention, avoided distractions, and took the survey seriously?" Participants selected one of five answers: (1) no, I was distracted; (2) no, I had trouble paying attention; (3) no, I didn't take the study seriously; (4) no, something else affected my participation negatively; or (5) yes. Participants were assured that their responses would not affect their reward for participating or their eligibility for future studies. Only those participants who selected (5) were included in the analyses. This same attention check has been used in the recent published work (e.g., Stanley et al., 2020; Stanley & Kay, 2022).

Results

We first computed a multivariate analysis of variance (MANOVA) with memory condition (*forgiveness* vs. *no forgiveness*) on all 37 MCQ items. The effect of memory condition in the MANOVA did not reach the threshold for statistical significance, $F(37, 146) = 1.48$, $p = .053$, $\eta_p^2 = .27$. We then computed independent samples t tests for each individual MCQ item. There were significant differences between forgiveness and no forgiveness conditions on five of the 37 items. Specifically, participants in the no forgiveness condition reported being able to better remember how they felt when the event occurred than participants in the forgiveness condition, $M_{diff} = .44$, $t(182) = 3.02$, $p = .003$, 95% CI [0.15, 0.74], $d = .45$. In addition, participants in the no forgiveness condition reported feeling significantly more negative affect now, $M_{diff} = .58$, $t(182) = 2.83$, $p = .005$, 95% CI [0.18, 0.99], $d = .42$ with significantly greater emotional intensity, $M_{diff} = .76$, $t(182) = 3.08$, $p = .002$, 95% CI [0.27, 1.25], $d = .45$ than participants in the forgiveness condition.

Beyond these effects on affect and intensity now, participants in the no forgiveness condition also reported that, looking back on it now, the event had more serious implications relative to participants in the forgiveness condition, $M_{diff} = .85$, $t(182) = 3.23$, $p = .001$, 95% CI [0.33, 1.37], $d = .48$. Participants also reported significantly clearer memory of the spatial arrangement of people in the remembered events in the no forgiveness condition than in the forgiveness condition, $M_{diff} = .43$, $t(182) = 2.05$, $p = .042$, 95% CI [0.02, 0.84], $d = .30$. There were no significant effects for any other MCQ item (all $ps > .05$). Finally, we found that participants in the no forgiveness condition thought that the remembered wrongdoing was more morally wrong ($M = 6.06$, $SD = 1.27$) than in the forgiveness condition, $M = 5.42$, $SD = 1.57$; $M_{diff} = .64$, $t(182) = 3.06$, $p = .003$, CI [0.23, 1.06], $d = .45$. All other descriptive and inferential statistics are presented in Supplemental Table ST1.

Discussion

The results from this pilot study provide initial support for the *emotional fading* over the *episodic fading* account of forgiveness. Specifically, this exploratory pilot study suggested that participants that were asked to remember wrongdoings for which they had not forgiven the perpetrators were better able to remember how they felt at the time, the valence of the memory at the time of retrieval was significantly more negative, more intense, and was experienced as having more consequences for their lives now, relative to participants who recalled wrongdoings in which they had forgiven the perpetrator. Critically, there were no differences in how they felt about the event when it occurred, nor in terms of the intensity of the event then; the affective differences pertained to items assessing their affective reactions at the time of retrieval. On the other hand, there were no differences in any of the episodic components of the memories for the forgiven versus unforgiven wrongdoings—except, perhaps, for ratings about the spatial arrangement of people. This effect, however, was very small, owing to our sample size being insufficient to uncover it, were it to exist. Notice that both the *episodic fading* and the *emotional fading* accounts predict that memories of forgiven wrongs are less emotionally intense and are associated with diminished negative affect compared to memories of not forgiven wrongs. However, only the *episodic fading* account predicts differences in the episodic details of the remembered autobiographical memories. Thus, the results of this pilot study suggestively support the *emotional fading* relative to the *episodic fading* account.

In addition to differences in the MCQ, which was our main interest in this study, we also found that participants judged forgiven wrongs as less morally wrong than wrongs that were not forgiven—a somewhat expected finding that we will discuss later. Nevertheless, it is important to note that although suggestive, this was only an exploratory pilot study which, as indicated by our sensitivity power analysis, may have been underpowered to identify small-to-medium-sized effects, were there to be any, given our experimental design. As a result, knowing that the MCQ could potentially identify phenomenological differences of interest, we conducted a properly powered preregistered replication of the pilot study in order to verify that these effects were indeed present.

Study 1

The results of the exploratory pilot study offer more support for the *emotional fading* account than for the *episodic fading* account.

However, to ensure that those findings are robust, we conducted a preregistered replication with a larger sample size. Study 1 reports those results.

Materials and Method

Participants

Three hundred ten U.S. residents voluntarily participated in this study through Prolific for monetary compensation. Forty-one participants were excluded for failing the memory manipulation check, and one additional participant was excluded for failing the attention check at the end but not the memory manipulation check. So, data for the remaining 268 participants were analyzed (M_{age} = 38.42 years, SD = 13.65 years, age range = 18–84 years, 138 females, 125 males, five other). The exclusion criteria in Study 1 were the same as in the pilot study, and we preregistered these criteria for Study 1. We collected data until a minimum of 310 participants completed the study, and we analyzed these data only after meeting the sample size target. We aimed to increase the sample size from the pilot study by 50%. A sensitivity power analysis showed that the final sample size of 268 participants provides sufficient power (.80) to detect small-to-medium-sized effects for independent t tests (d = .34, two-tailed).

Materials and Procedure

The materials and procedure in Study 1 were the same as in the pilot study.

Results

Table 1 provides descriptive and inferential statistics for each item in the MCQ as a function of the experimental condition. We first computed a MANOVA with memory condition (*forgiveness*

Table 1
Descriptive (Means and Standard Deviations) and Inferential Statistics (Independent Samples t Tests) for Each Memory Characteristics Questionnaire Item in Study 1

Item	Forgiveness	No forgiveness	t	p/p_{bonf}	d
Dim	5.86 (1.19)	6.00 (1.20)	0.97	.33/1.00	.12
Color	5.24 (1.76)	5.35 (1.81)	0.52	.61/1.00	.06
Visual detail	5.26 (1.58)	5.26 (1.56)	0.02	.98/1.00	<.01
Sound	4.45 (2.03)	4.04 (2.13)	1.63	.10/1.00	.20
Smell	1.94 (1.42)	2.01 (1.48)	0.36	.72/1.00	.04
Touch	3.26 (2.24)	3.14 (2.22)	0.42	.68/1.00	.05
Taste	1.77 (1.42)	1.46 (0.92)	9,496[a]	.29/1.00	.06
Vivid	5.74 (1.11)	5.98 (1.18)	1.66	.10/1.00	.20
Detail	5.63 (1.22)	5.72 (1.33)	0.55	.58/1.00	.07
Comprehensible	5.90 (1.23)	5.83 (1.25)	0.44	.66/1.00	.05
Complex	4.05 (1.78)	3.90 (1.71)	0.71	.48/1.00	.09
Realistic	6.06 (1.29)	6.07 (1.18)	0.05	.96/1.00	<.01
Location	6.14 (1.31)	6.15 (1.22)	0.05	.96/1.00	<.01
Setting	6.15 (1.12)	5.99 (1.23)	1.09	.28/1.00	.13
Object arrangement	5.12 (1.68)	5.10 (1.50)	0.09	.93/1.00	.01
People arrangement	5.35 (1.58)	5.44 (1.41)	0.51	.61/1.00	.06
Time	5.44 (1.55)	5.54 (1.45)	0.52	.60/1.00	.06
Year	5.84 (1.27)	5.72 (1.53)	0.75	.46/1.00	.09
Season	5.60 (1.54)	5.46 (1.60)	0.72	.47/1.00	.09
Day	4.57 (2.08)	4.69 (1.90)	0.48	.63/1.00	.06
Hour	4.15 (2.02)	4.08 (1.97)	0.29	.77/1.00	.04
Long	4.21 (1.68)	4.14 (1.69)	0.31	.76/1.00	.04
Tone	2.30 (1.44)	1.68 (1.21)	11,637[a]	<.001/<.001	.30
Implications then	5.33 (1.64)	5.47 (1.55)	0.71	.48/1.00	.09
Implications now	4.52 (1.95)	5.39 (1.86)	3.72	<.001/.008	.46
Felt	6.33 (0.94)	6.38 (1.06)	0.37	.72/1.00	.04
Valence then	1.81 (1.40)	1.58 (1.25)	1.39	.17/1.00	.17
Intensity then	5.91 (1.22)	6.17 (1.31)	1.63	.11/1.00	.20
Valence now	3.04 (1.57)	2.20 (1.50)	4.46	<.001/<.001	.55
Intensity now	4.23 (1.60)	4.98 (1.70)	3.72	<.001/.009	.45
Thoughts	5.45 (1.51)	5.43 (1.53)	0.15	.88/1.00	.02
Reveal	4.46 (1.57)	4.52 (1.51)	0.31	.76/1.00	.04
Before	3.97 (2.01)	4.03 (1.77)	0.26	.80/1.00	.03
After	4.72 (1.87)	5.00 (1.75)	1.25	.21/1.00	.15
Accuracy	5.33 (1.85)	5.57 (1.78)	1.08	.28/1.00	.13
Often thought about	4.24 (1.73)	4.59 (1.88)	1.58	.11/1.00	.19
Often talked about	3.45 (1.86)	3.49 (1.81)	.15	.88/1.00	.02

Note. Independent samples t tests are reported, except in cases in which there is a violation of the equal variances assumption as assessed by Levine's test, in which case Mann–Whitney U statistic is reported—which deviates from our preregistered analyses. Effect sizes are calculated as Cohen's d, except in cases where Mann–Whitney U was employed in which case Rank biserial correlations are reported instead. Both Bonferroni-corrected and uncorrected p values are reported. Standard deviations are presented in parenthesis.
[a] Indicates cases.

vs. *no forgiveness*) on all 37 MCQ items. There was a significant effect of condition in the MANOVA, $F(37, 230) = 1.86$, $p = .003$, $\eta_p^2 = .23$. We then computed independent samples t tests for each individual MCQ item. There were significant differences between forgiveness and no forgiveness conditions on four of the 37 items. As in the pilot study, participants in the no forgiveness condition reported feeling significantly more negative affect now, $M_{diff} = .84$, $t(266) = 4.46$, $p_{bonf} < .001$, 95% CI [0.47, 1.21], $d = .55$, with significantly greater emotional intensity, $M_{diff} = .75$, $t(266) = 3.72$, $p_{bonf} < .009$, 95% CI [0.35, 1.15], $d = .45$, than participants in the forgiveness condition. Likewise, and replicating the finding from the pilot study, participants in the no forgiveness condition also reported that, looking back, the event had more serious implications relative to participants in the forgiveness condition, $M_{diff} = .87$, $t(266) = 3.72$, $p_{bonf} < .008$, 95% CI [0.41, 1.33], $d = .46$. Finally, participants in the no forgiveness condition reported that the overall tone of the remembered event was more negative than participants in the forgiveness condition ($M_{diff} = .62$, $U = 11{,}637$, $p_{bonf} < .001$, *Rank biserial correlation* = .30). There were no significant effects for any other MCQ item (all $ps > .05$; Table 1). Additionally, and replicating the finding from the pilot study, we found that participants in the no forgiveness condition thought that the remembered wrongdoing was more morally wrong ($M = 6.06$, $SD = 1.33$) than in the forgiveness condition, $M = 5.08$, $SD = 1.66$; $M_{diff} = .98$, $t(266) = 5.29$, $p_{bonf} < .001$, CI [0.61, 1.34], $d = .65$.

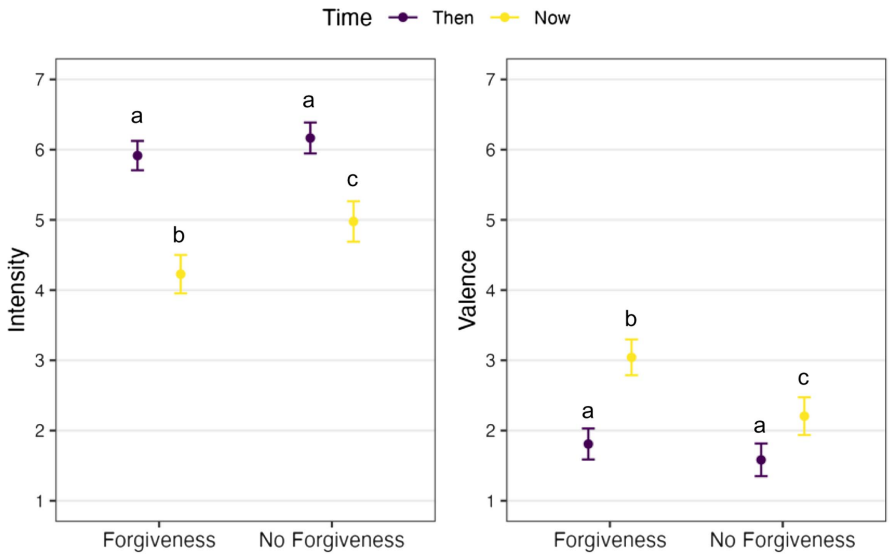
Finally, following a reviewer's suggestion, we performed 2 (Condition: *forgiveness, no forgiveness*) × 2 (Time: *Then, Now*) analyses of variance (ANOVAs) for the ratings of *valence* and *intensity* to verify that the differences were specific to how participants felt at retrieval (i.e., "now"), rather than how they remember it felt when the event occurred (i.e., "then"). For the ratings of valence, we found effects of Condition, $F(1, 266) = 12.28$, $p < .001$, $\eta_p^2 = .044$, and Time, $F(1, 266) = 109.12$, $p < .001$, $\eta_p^2 = .291$, and a Condition × Time interaction, $F(1, 266) = 11.86$, $p < .001$, $\eta_p^2 = .043$. For the ratings of intensity, we found effects of Condition, $F(1, 266) = 12.03$, $p < .001$, $\eta_p^2 = .043$; Time, $F(1, 266) = 181.22$, $p < .001$, $\eta_p^2 = .405$; and a Condition × Time interaction, $F(1, 266) = 5.45$, $p = .020$, $\eta_p^2 = .020$ (Figure 1). Test of simple effects revealed that when asked to reflect on the intensity of the event now, participants in the forgiveness condition reported lower ratings relative to those in the not forgiveness condition, $M_{diff} = .75$, $t(266) = 3.719$, $p_{bonf} < .001$, 95% CI [0.35, 1.15], $d = .97$. Similarly, participants in the forgiveness condition reported higher ratings of valence now relative to those in the no forgiveness condition, $M_{diff} = .84$, $t(266) = 4.456$, $p_{bonf} < .001$, 95% CI [0.47, 1.21], $d = .64$. However, there were no differences in intensity then or valence then between forgiveness and no forgiveness conditions (both $ps > .05$).

Discussion

The results of Study 1 replicated four main findings of the pilot study. First, participants in the forgiveness condition reported feeling significantly less negative affect at the time of retrieval relative to participants who had not forgiven the perpetrators. Second, participants who had forgiven the perpetrator of a remembered wrongdoing reported feeling less emotional intensity at the time of retrieval relative to participants in the no forgiveness condition. Third, participants in the no forgiveness condition reported that, looking back, the remembered wrongdoings had more serious implications for their life relative to what participants in the forgiveness condition reported. Finally, beyond the results from the MCQ, remembered wrongdoings in the no forgiveness condition were rated as more morally wrong relative to those remembered by participants who managed to forgive their perpetrators. Of note, a

Figure 1

Mean Ratings of Intensity and Valence Then (Purple) Versus Now (Yellow) as a Function of Forgiveness for Study 1



Note. Different lowercase letters indicate significant ($p < .05$) Bonferroni-corrected differences. Error bars indicate 95% confidence intervals. See the online article for the color version of this figure.

final exploratory analysis testing the interaction of condition and time confirmed that the effects of forgiveness were confined to how participants felt at retrieval and not to how they remembered they felt when the event occurred.

Additionally, there were two differences between the results of the pilot study and Study 1. First, in Study 1, we found that the overall tone of the memory at the time of retrieval was more negative for participants in the no forgiveness condition relative to those in the forgiveness condition. Second, we did not replicate the difference in the spatial arrangement of people, which we suspected given the smaller sample size in the pilot study. As a result, in Study 1, we found no significant effects for any MCQ items indexing episodic components of the recollection, only for details pertaining to the affective reactions of the memory at retrieval.

According to the *episodic fading* account, the emotional change forgiveness brings about is due to the fading of the episodic components of the remembered wrongdoing. If this account was correct, we would have expected to see reductions in MCQ items targeting episodic details—such as sensory details about color, sound, smell, as well as composition details, such as arrangement of objects, people, or clarity of day—in parallel with reductions in affective components at the time of retrieval. However, Study 1 failed to find differences in the episodic components of the remembered wrongdoings regardless of whether participants forgave their perpetrator or not. Instead, differences were found only in the three MCQ items that index the emotional and affective aspects of the remembered event at the time of retrieval. We take this finding to be consistent with the *emotional fading* account instead, as it suggests that forgiveness is associated mainly with the modification of affective rather than episodic components of the remembered experience.

Study 2

Some have argued that when a victim forgives someone who wrongs them, they thereby release them from a moral debt (Nelkin, 2013; Swinburne, 1989; Warmke, 2016). Emotional accounts of forgiveness have predominantly focused on how victims change their affective reactions toward the perpetrator and toward the past wrongdoing when releasing them from a moral obligation to atone or retribute. However, an open question is whether such a change in emotion also occurs as a result of being forgiven (Shoemaker, 2021). In other words, if a victim relinquishing a perpetrator from a moral obligation or debt toward them helps to modify the emotional reactions elicited by the recollection of the past wrongdoing, it is possible that a similar change in emotion may occur in the perpetrators as a result of being forgiven. Thus, to explore this question, in Study 2, we manipulated the participant's role in the wrongdoing. Two questions were thus explored in Study 2. The first one was to see whether the emotional changes we saw in Study 1 extend to the perpetrator's role, or if they are confined to the forgiving victim. The second question was to, once again, test whether changes in emotion accompany changes in the episodic components of the remembered wrong (as the *episodic fading* view predicts), or whether they are specific to affective reactions at retrieval (as would be anticipated by the *emotional fading* account of forgiveness).

Method

Participants

Six hundred thirty-seven individuals voluntarily participated in this study through Amazon's Mechanical Turk (AMT) for monetary compensation. Thirty-eight participants were excluded for failing the memory manipulation check, and three additional participants were excluded for failing the attention check at the end but not the memory manipulation check. One additional participant was excluded for entering nonsensical information in the age question. So, data for the remaining 595 participants were analyzed (M_{age} = 36.73 years, SD = 10.52 years, age range = 20–76 years, 278 females, 315 males, two other). The exclusion criteria in Study 2 were the same as in the pilot study and in Study 1. We collected data until a minimum of 637 participants completed the study, and we analyzed these data only after meeting the sample size target. A sensitivity power analysis showed that the final sample size of 595 participants provides sufficient power (.82) to detect small-to-medium-sized effects for analyses of covariance (f = .22, two-tailed).

Materials and Procedure

In a 2 (Condition: *forgiveness*, *no forgiveness*) × 2 (Role: *perpetrator*, *victim*) between-subjects design, participants were randomly assigned to one of four conditions: (a) In the *victim forgiveness* condition, participants were asked to remember a wrongdoing from their past 10 years in which someone harmed them either physically or emotionally but for which they had forgiven the perpetrator; (b) in the *victim no forgiveness* condition, participants were asked to remember a similar wrongdoing but for which they had not forgiven the perpetrator; (c) in the *perpetrator forgiveness* condition, participants were asked to remember an event from the past 10 years in which they harmed someone either physically or emotionally but the victim forgave them; and (d) in the *perpetrator no forgiveness* condition, participants were asked to remember a similar wrongdoing in which they were the perpetrator but the victim did not forgive them. Participants were instructed to write four to six sentences describing the remembered event. They were told not to use real names or places to ensure confidentiality. Next, they were asked to estimate when the event occurred by month and year (e.g., June 2017). Then participants were asked to answer the following question "Did you end up forgiving the other person who harmed you emotionally or physically?" and were given the options "Yes," "Maybe," and "No." This question was included as a manipulation check, so only participants who answered "Yes" in the forgiveness condition were included, and only participants who answered "No" in the no forgiveness condition were included. Next, participants received the same version of the MCQ as in Study 1. Finally, participants were asked to rate how morally wrong they thought the wrongdoing was, and then the same attention check as in the previous studies was used.

Results

Table 2 provides descriptive statistics for each item in the MCQ as a function of the experimental condition. We first computed a 2 (Condition: *forgiveness*, *no forgiveness*) × 2 (Role: *Victim,*

Table 2
Descriptive Statistics (Means and Standard Deviations) for Each Memory Characteristics Questionnaire Item in Study 2

Role	Perpetrator		Victim	
Item	Forgiveness (n = 143)	No forgiveness (n = 139)	Forgiveness (n = 163)	No forgiveness (n = 150)
Dim	5.63 (1.23)	5.44 (1.40)	5.94 (1.16)	6.00 (1.21)
Color	5.70 (1.67)	5.24 (1.76)	5.77 (1.49)	5.71 (1.58)
Visual detail	5.29 (1.46)	5.09 (1.68)	5.26 (1.47)	5.35 (1.66)
Sound	4.13 (1.96)	4.12 (2.07)	4.10 (2.14)	4.22 (2.19)
Smell	1.87 (1.34)	1.68 (1.12)	1.75 (1.42)	1.78 (1.47)
Touch	3.02 (2.02)	2.78 (1.97)	3.01 (2.08)	3.17 (2.22)
Taste	1.76 (1.40)	1.85 (1.54)	1.60 (1.24)	1.67 (1.37)
Vivid	5.75 (1.12)	5.57 (1.31)	5.89 (1.27)	6.01 (1.11)
Detail	5.52 (1.27)	5.42 (1.47)	5.74 (1.28)	5.79 (1.27)
Comprehensible	5.78 (1.21)	5.68 (1.36)	5.98 (1.10)	5.95 (1.14)
Complex	3.85 (1.84)	3.85 (1.60)	4.11 (1.81)	4.36 (1.83)
Realistic	6.26 (1.04)	5.89 (1.26)	6.25 (1.15)	6.29 (1.12)
Location	6.04 (1.16)	5.81 (1.47)	6.01 (1.39)	6.05 (1.43)
Setting	5.88 (1.18)	5.66 (1.25)	5.97 (1.19)	5.90 (1.21)
Object arrangement	5.01 (1.48)	4.84 (1.66)	4.85 (1.62)	5.12 (1.75)
People arrangement	5.18 (1.38)	5.04 (1.72)	5.40 (1.57)	5.51 (1.49)
Time	5.43 (1.46)	5.40 (1.60)	5.64 (1.40)	5.67 (1.51)
Year	5.59 (1.51)	5.36 (1.59)	5.66 (1.45)	5.69 (1.53)
Season	5.26 (1.56)	5.25 (1.72)	5.53 (1.61)	5.71 (1.51)
Day	5.03 (1.58)	4.82 (1.96)	5.24 (1.62)	5.36 (1.69)
Hour	4.85 (1.68)	4.60 (1.90)	4.86 (1.76)	4.92 (1.91)
Long	3.66 (1.59)	4.01 (1.65)	4.17 (1.89)	4.20 (1.88)
Tone	2.49 (1.37)	2.40 (1.49)	2.17 (1.44)	1.68 (1.11)
Implications then	4.82 (1.79)	4.31 (2.04)	5.44 (1.73)	5.61 (1.60)
Implications now	4.13 (1.99)	5.06 (1.74)	4.94 (1.85)	5.28 (1.79)
Felt	5.98 (1.17)	5.99 (1.26)	6.35 (0.98)	6.43 (0.92)
Valence then	2.28 (1.35)	2.29 (1.43)	1.75 (1.21)	1.66 (1.22)
Intensity then	5.80 (1.26)	5.65 (1.46)	6.10 (1.18)	6.52 (0.76)
Valence now	2.73 (1.30)	2.45 (1.34)	2.58 (1.54)	1.95 (1.28)
Intensity now	4.65 (1.55)	4.87 (1.54)	4.72 (1.70)	5.38 (1.53)
Thoughts	5.36 (1.40)	5.37 (1.33)	5.87 (1.26)	5.88 (1.24)
Reveal	4.39 (1.59)	4.55 (1.64)	4.28 (1.73)	4.27 (1.60)
Before	4.31 (1.84)	4.35 (1.89)	4.34 (1.99)	4.53 (1.83)
After	4.85 (1.75)	4.55 (1.87)	5.22 (1.72)	5.27 (1.82)
Accuracy	5.10 (1.97)	5.32 (1.71)	5.50 (1.89)	5.51 (1.98)
Often thought about	3.97 (1.80)	4.23 (1.67)	4.79 (1.81)	4.94 (1.69)
Often talked about	2.97 (1.61)	2.98 (1.72)	3.80 (1.89)	3.59 (1.93)

Note. Means and standard errors are presented according to role (victim vs. perpetrator) and condition (forgiveness vs. no forgiveness).

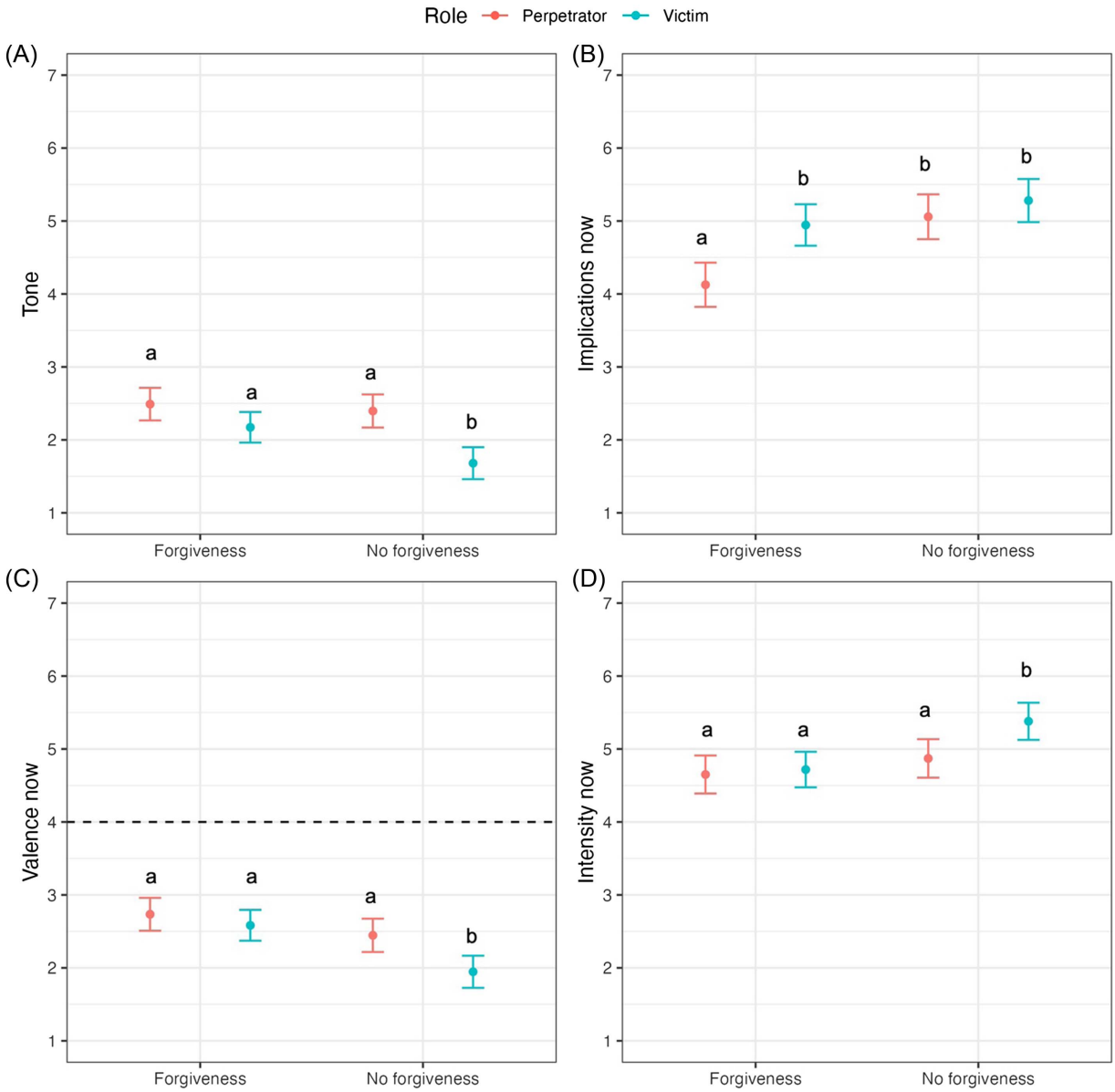
Perpetrator) MANOVA on all 37 MCQ items. There were significant effects of Condition, $F(37, 555) = 2.17, p < .001, \eta_p^2 = .13$, and Role, $F(37, 555) = 4.08, p < .001, \eta_p^2 = .21$, qualified by a significant Condition × Role interaction, $F(37, 555) = 1.54, p = .023, \eta_p^2 = .09$. To clarify these effects, as well as the interaction, we followed up with 2 (Condition: *forgiveness, no forgiveness*) × 2 (Role: *Victim, Perpetrator*) ANOVAs for each MCQ item.

Since our main interest is to test, not only whether the effects of Condition (forgiveness vs. no forgiveness) detected in Study 1 replicate for the victim role but also whether they may emerge for the perpetrator role, we begin by reporting the results of the ANOVAs for the four items of interest identified from Study 1: tone, implications now, valence now, and intensity now (Figure 2). First, for the rating of *tone*, we found an effect of Condition, $F(1, 591) = 6.86, p = .009, \eta_p^2 = .01$, and of Role, $F(1, 591) = 21.36, p < .001, \eta_p^2 = .03$, but no interaction, $F(1, 591) = 3.17, p = .076, \eta_p^2 = .01$. Post hoc comparisons revealed that the *tone* of the remembered wrongdoing was more negative in the no forgiveness condition, $M_{diff} = .29$, $t(591) = 2.62, p_{bonf} = .009$, 95% CI [0.07, 0.51], $d = .21$, relative to the forgiveness condition and also more negative for the victim relative to the perpetrator role, $M_{diff} = .51$, $t(591) = 4.62, p_{bonf} < .001$, 95% CI [0.30, 0.74], $d = .37$. Second, for the rating of *implications now*, we found effects of Condition, $F(1, 591) = 17.49, p < .001, \eta_p^2 = .03$, and Role, $F(1, 591) = 11.81, p < .001, \eta_p^2 = .02$, and a Condition × Role interaction, $F(1, 591) = 3.88, p = .049, \eta_p^2 = .01$. Test of simple effects revealed that when asked to reflect on the implications that the remembered event had for them now, participants in the victim role who forgave the perpetrator gave higher ratings relative to those in the perpetrator role that were forgiven, $M_{diff} = .81$, $t(591) = 3.88, p_{bonf} < .001$, 95% CI [0.28, 1.36], $d = .43$. Higher ratings for implications now were also reported by perpetrators who were not forgiven relative to those who were forgiven, $M_{diff} = .93$, $t(591) = 4.24, p_{bonf} < .001$, 95% CI [0.37, 1.50], $d = .50$, as well as for victims that did not forgive relative to perpetrators that were forgiven, $M_{diff} = 1.15$, $t(591) = 5.36, p_{bonf} < .001$, 95% CI [0.60, 1.71], $d = .63$.

Third, for the rating of *valence now*, we found effects of Condition, $F(1, 591) = 16.77, p < .001, \eta_p^2 = .03$, and Role, $F(1, 591) = 8.32, p = .004, \eta_p^2 = .01$, but no interaction, $F(1, 591) = 2.38, p = .124, \eta_p^2 < .01$. Post hoc comparisons showed that when asked

Figure 2

Estimated Marginal Means for Tone (A), Implications Now (B), Valence Now (C), and Intensity Now (D) of Memories for Forgiven and Not Forgiven Wrongdoings for Perpetrators (Red) and Victims (Turquoise)



Note. Different lowercase letters indicate significant ($p < .05$) Bonferroni-corrected differences when testing pairwise comparisons between all conditions. Please refer to the main text for statistical differences across conditions and roles. Error bars indicate 95% confidence intervals. See the online article for the color version of this figure.

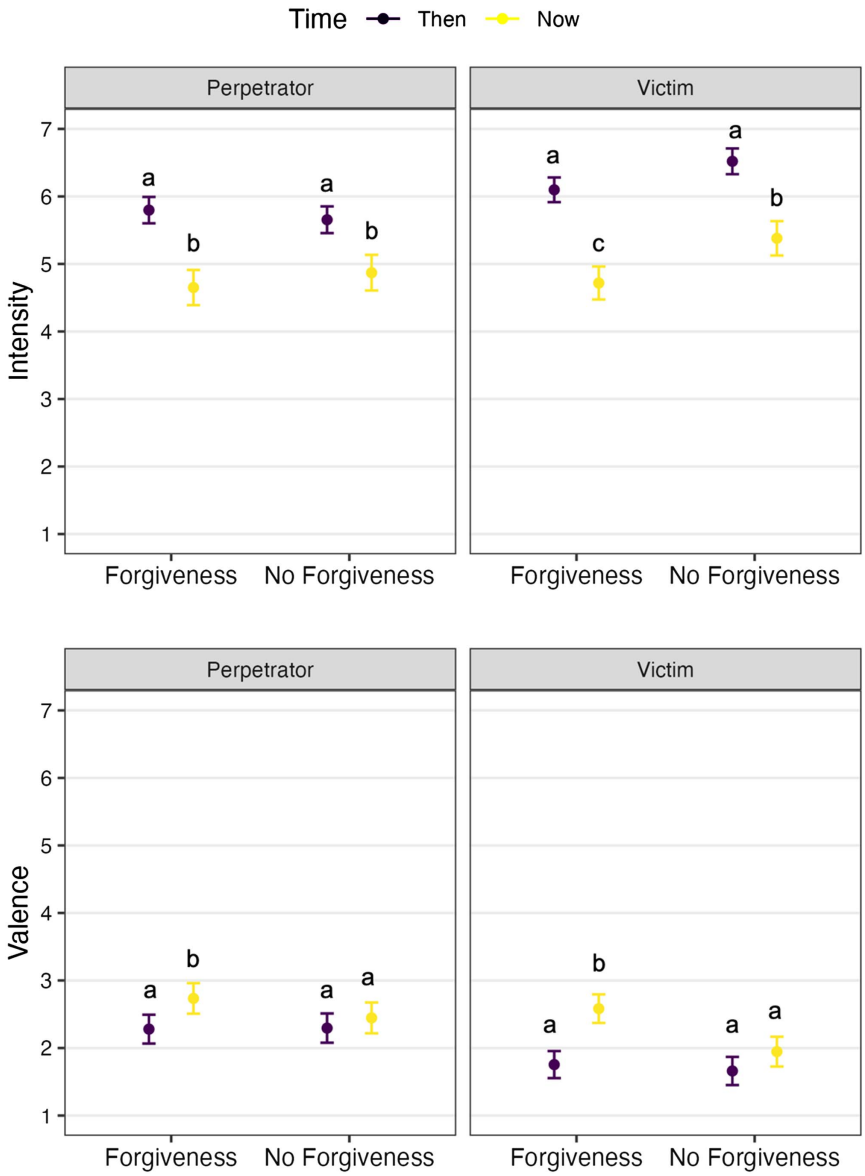
about the valence at the time of retrieval, participants in the no forgiveness condition reported more negative valence than in the forgiveness condition, $M_{diff} = .46$, $t(591) = 4.10$, $p_{bonf} < .001$, 95% CI [0.24, 0.68], $d = .34$, and participants in the victim role reported more negative valence than those in the perpetrator condition, $M_{diff} = .33$, $t(591) = 2.88$, $p_{bonf} = .004$, 95% CI [0.10, 0.55], $d = .23$. Finally, for the rating of *intensity now*, we found effects of Condition, $F(1, 591) = 11.47$, $p < .001$, $\eta_p^2 = .02$, and Role, $F(1, 591) = 4.90$, $p = .027$, $\eta_p^2 = .01$, and no interaction, $F(1, 591) = 2.88$, $p = .090$, $\eta_p^2 = .01$. Post hoc comparisons revealed that participants in the no forgiveness condition reported higher emotional intensity relative to those in the forgiveness condition, $M_{diff} = .45$, $t(591) = 3.39$, $p_{bonf} < .001$, 95% CI [0.19, 0.70], $d = 28$, as well as participants in the victim role relative to those who were perpetrators, $M_{diff} = .29$, $t(591) = 2.21$, $p_{bonf} = .027$, 95% CI [0.03, 0.54], $d = .17$. Critically, no other effects of Condition were identified for any of the other items in the MCQ (additional results are available in Supplemental Material).

For the rating of *moral* wrongness, an ANOVA identified effects of Condition, $F(1, 591) = 9.82$, $p = .002$, $\eta_p^2 = .02$, and Role, $F(1, 591) = 52.55$, $p < .001$, $\eta_p^2 = .08$, but no interaction ($p = .10$). Post hoc comparisons revealed that participants in the no forgiveness condition rated the remembered wrongdoings as more morally wrong than those in the forgiveness condition, $M_{diff} = .41$, $t(591) = 3.13$, $p_{bonf} = .002$, 95% CI [0.15, 0.66], $d = .25$, regardless of whether they were victims (*forgiveness* $M = 5.53$, $SD = 1.57$; *no forgiveness* $M = 6.15$, $SD = 1.11$) or perpetrators (*forgiveness* $M = 4.80$, $SD = 1.83$; *no forgiveness* $M = 4.99$, $SD = 1.74$), whereas participants in the victim role thought of the remembered wrongdoing as more morally wrong than those in the perpetrator condition, $M_{diff} = .94$, $t(591) = 7.15$, $p_{bonf} < .001$, 95% CI [0.69, 1.20], $d = .58$, regardless of whether or not they forgave the perpetrators.

Finally, and following the exploratory analyses conducted in Study 1, we performed 2 (Condition: *forgiveness, no forgiveness*) × 2 (Role: *victim, perpetrator*) × 2 (Time: *Then, Now*) ANOVAs for the ratings of *valence* and *intensity* to verify that the effects were specific to ratings "now" rather than "then" (Figure 3). For the ratings of valence, we found effects of Condition, $F(1, 591) = 7.55$,

Figure 3

Mean Ratings of Intensity and Valence Then (Purple) Versus Now (Yellow) for Perpetrator and Victim as a Function of Forgiveness From Study 2



Note. Different lowercase letters indicate significant ($p < .05$) Bonferroni-corrected differences separated by role. Error bars indicate 95% confidence intervals. See the online article for the color version of this figure.

$p = .006$, $\eta_p^2 = .013$; Role, $F(1, 591) = 24.57$, $p < .001$, $\eta_p^2 = .040$; Time, $F(1, 591) = 49.59$, $p < .001$, $\eta_p^2 = .077$; a Condition × Time interaction, $F(1, 591) = 11.96$, $p < .001$, $\eta_p^2 = .020$; and a Role × Time interaction, $F(1, 591) = 4.34$, $p = .038$, $\eta_p^2 = .007$. There was no interaction of Condition × Role, $F(1, 591) = 1.57$, $p = .211$, $\eta_p^2 = .003$, or of Condition × Role × Time, $F(1, 591) = .95$, $p = .330$, $\eta_p^2 = .002$. To clarify the Condition × Time interaction, we conducted tests of simple effects, which revealed that participants in the forgiveness condition reported less negative valence now relative to those in the no forgiveness condition, $M_{diff} = .46$, $t(591) = 4.096$, $p_{bonf} < .001$, 95% CI [0.10, 0.36], $d = .34$. However, there was no difference in ratings of valence then, $M_{diff} = .04$, $t(591) = .371$, $p_{bonf} = 1.00$, 95% CI [−0.10, 0.14], $d = .03$. For completeness, and to clarify the Role × Time interaction, tests of simple effects revealed that participants in the victim condition reported more negative valence now, $M_{diff} = .33$, $t(591) = 2.884$, $p_{bonf} = .008$, 95% CI [0.04, 0.29], $d = .23$, and then, $M_{diff} = .58$, $t(591) = 5.43$, $p_{bonf} < .001$, 95% CI [0.17, 0.41], $d = .44$, relative to participants in the perpetrator condition.

For the ratings of intensity, we found effects of Condition, $F(1, 591) = 10.23$, $p < .001$, $\eta_p^2 = .017$; Role, $F(1, 591) = 23.04$, $p < .001$, $\eta_p^2 = .038$; Time, $F(1, 591) = 247.39$, $p < .001$, $\eta_p^2 = .295$; a Condition × Time interaction, $F(1, 591) = 4.54$, $p = .034$, $\eta_p^2 = .008$; a Role × Time interaction, $F(1, 591) = 4.34$, $p = .038$, $\eta_p^2 = .007$; a Condition × Role interaction, $F(1, 591) = 7.68$, $p = .006$, $\eta_p^2 = .013$; but no Condition × Role × Time interaction, $F(1, 591) = .19$, $p = .666$, $\eta_p^2 < .001$. To clarify the Condition × Time interaction, we conducted tests of simple effects, showing that participants in the forgiveness condition reported lower ratings of intensity now relative to those in the not forgiveness condition, $M_{diff} = .45$, $t(591) = 3.387$, $p_{bonf} = .002$, 95% CI [0.07, 0.37], $d = .28$. However, there was no difference in ratings of intensity then, $M_{diff} = .14$, $t(591) = 1.431$, $p_{bonf} = .306$, 95% CI [−0.04, 0.18], $d = .12$. For completeness, and to clarify the Role × Time interaction, we conducted tests of simple effects, revealing that participants in the victim condition reported higher ratings of intensity then, $M_{diff} = .58$, $t(591) = 5.975$, $p_{bonf} < .001$, 95% CI [0.18, 0.40], $d = .48$, relative to those in the perpetrator condition. However, there were no differences in the ratings of intensity now, $M_{diff} = .29$, $t(591) = 2.214$, $p_{bonf} = .054$, 95% CI [−0.29, 0.002], $d = .17$. To clarify the Condition × Role interaction, tests of simple effects revealed that participants in the victim condition reported lower ratings of intensity in the forgiveness condition, $M_{diff} = .54$, $t(592) = 4.334$, $p_{bonf} < .001$, 95% CI [0.13, 0.41], $d = .36$, relative to the no forgiveness condition. However, there was no differences in ratings of intensity for those in the perpetrator condition, $M_{diff} = .04$, $t(591) = .295$, $p_{bonf} = 1.00$, 95% CI [−0.13, 0.17], $d = .03$.

Discussion

The purpose of Study 2 was to examine, first, whether the affective change we found in the previous studies replicates for the victim condition and, second, whether we see similar affective differences in perpetrators that have been forgiven. Replicating the findings of Study 1, we found that participants reported less negative tone, fewer implications from the wrongdoing, less negative valence, and less intensity at the time of retrieval in the forgiveness condition relative to the no forgiveness condition, regardless of role. This suggests that the affective change of forgiveness may emerge not only for victims that have forgiven their perpetrators but also for perpetrators that have been forgiven by their victims. Importantly, as revealed by the exploratory follow-up analysis, for both victims and perpetrators, the differences for forgiven versus not forgiven wrongs only occurred for the ratings of valence and intensity now, not then. Additionally, and unsurprisingly, this analysis also revealed that memories of wrongdoings are experienced more negatively and more intensely for victims than for perpetrators, regardless of condition. Of note, although the three-way interaction was not significant, the effect sizes for tone, valence now, and intensity now are larger for the victim condition relative to the perpetrator condition, suggesting that affective differences may be more robust or stable for victims than perpetrators. Indeed, memories for which the subject was a victim and did not forgive the perpetrator were particularly unique in having a more negative tone, feeling more negative now, and having greater intensity now. Critically, we found no difference in any rating pertaining to episodic details of the autobiographical memories as a function of forgiveness. We take these findings to support the *emotional fading*, rather than the *episodic fading* view, while also extending it to show potential affective benefits not only for those who forgive but also for those who are forgiven.

It is important to note, though, that we did find many significant differences across episodic and affective components as a function of role, essentially showing that memories of wrongdoings in which one is the victim are phenomenologically better remembered relative to those in which one is the perpetrator (see Supplemental Material). However, this finding is not unexpected, as evidence suggests not only heightened phenomenological characteristics in memories of victimizing relative to nonvictimizing events (Kensinger, 2009) but also differences in recollective strategies between victims and perpetrators (Stillweli & Baumeister, 1997). Nevertheless, the fact that we do not find similar differences in episodic characteristics between forgiveness conditions suggests, contra the *episodic fading* account, that there may not be. Finally, and replicating the findings from the pilot study and Study 1, we found that remembered wrongs that were not forgiven are thought of as more morally wrong than those that were forgiven, and this finding held regardless of the participant's role.

Study 3

In addition to a change in affect toward the remembered wrongdoing, the emotional view of forgiveness holds that forgiving essentially involves the relinquishing of certain reactive attitudes toward wrongdoers. In particular, forgiveness involves the forswearing or overcoming of feelings of resentment and the desire for revenge (Hughes, 1993; Murphy & Hampton, 1988). As we have seen, the proposed *emotional fading* account of forgiveness holds that, in forgiving, the affective components associated with the memory of the wrongdoing change in a way that render the remembered offenses less negative and less emotionally intense relative to offenses that are not forgiven. What is unclear, though, is whether these changes in affect relate to the hypothesized changes in reactive attitudes toward the wrongdoer.

We therefore conducted a third study, not only to seek to replicate the affective changes found in Studies 1 and 2 but also to explore the relationship between such affective changes and the expected changes in reactive attitudes toward the perpetrator. In this study,

participants were asked to remember a wrongdoing of which they were the victims and they either forgave or did not forgive the perpetrator. Next, participants rated the three affective measures identified in the previous studies—tone, valence, and intensity at the time of retrieval. We also included measures of valence and intensity at the time of occurrence, which could help to clarify whether differences in remembered affective characteristics, as opposed to the affective characteristics at the time of retrieval, are also related to changes in reactive attitudes. Next, participants completed the TRIM, a widely used Self-Assessment Questionnaire to measure three reactive attitudes toward perpetrators that are thought to be essential to forgiveness: benevolence, avoidance, and revenge (McCullough et al., 1998). Finally, participants were also asked to rate how morally wrong they thought the perpetrator's behavior was, as we wanted to include the rating of morality as a covariate to statistically control for perceived moral wrongness.

With this study, a number of hypotheses were tested. First, we expected to replicate the previously found differences in tone, valence, and intensity at the time of retrieval between forgiven and not forgiven wrongs. However, we did not expect to see differences in valence or intensity at the time of the event as a function of forgiveness. Second, we expected the three main factors of the TRIM to differ between forgiven and not forgiven wrongs. Specifically, and consistent with extant uses of the instrument to measure reactive attitudes associated with forgiveness, we expected to see higher ratings of benevolence and lower ratings of revenge and avoidance for forgiven relative to not forgiven wrongs. Third, we wanted to make sure that these effects are still present when the perceived moral wrongness of the remembered wrongdoing is statistically controlled for. Finally, although more speculatively, we expected that the TRIM scores would more likely correlate with the emotional measures at retrieval, rather than at the time of occurrence.

Method

Participants

Five hundred thirty-one individuals participated voluntarily through the online platform Prolific for monetary compensation. Ninety-four participants were excluded for failing the memory manipulation check (i.e., answering "yes" or "maybe" in the no forgiveness condition, or answering "no" or "maybe" in the forgiveness condition), and five additional participants were excluded for failing the attention check at the end but not the memory manipulation check. So, data for the remaining 432 participants were analyzed (M_{age} = 40.11 years, SD = 13.22 years, age range = 18–76 years; 215 females, 212 males, five nonbinary/other). We collected data until a minimum of 530 participants completed the study, and we analyzed these data only after meeting the sample size target. A sensitivity power analysis showed that the final sample size of 432 participants provides sufficient power (.80) to detect small-to-medium-sized effects for independent t tests (d = .27, two-tailed).

Materials and Procedure

Participants were randomly assigned to one of two conditions: *forgiveness* or *no forgiveness*. In the forgiveness condition, participants were asked to recall a personal past event that occurred within the past 10 years where someone else harmed them emotionally or physically and for which they had forgiven the perpetrator. In the no forgiveness condition, participants were asked to recall a personal past event that occurred within the past 10 years where someone else harmed them emotionally or physically and for which they had *not* forgiven the perpetrator. Participants were instructed to write four to six sentences describing the remembered event. They were told not to use real names or places to ensure confidentiality. Next, they were asked to estimate when the event occurred by month and year (e.g., June 2017). Then participants were asked to answer the following question "Did you end up forgiving the other person who harmed you emotionally or physically?" and were given the options "Yes," "Maybe," and "No." This question was included as a memory manipulation check, so only participants who answered "Yes" in the forgiveness condition were included in analyses, and only participants who answered "No" in the no forgiveness condition were included in analyses.

Next, they received the following five questions from the MCQ (Johnson, 1988), aimed at assessing affective characteristics at the time of occurrence and at the time of retrieval: (a) What is the overall tone of your memory (1 = *very negative*; 7 = *very positive*); (b) How negative or positive were your feelings at the time that the event occurred? (1 = *very negative*; 7 = *very positive*); (c) How intense were your feelings at the time the event occurred? (1 = *not at all intense*; 7 = *very intense*); (d) As you are remembering the event now, how negative or positive are your feelings? (1 = *very negative*; 2 = *very positive*); and (e) As you are remembering the event now, how intense are your feelings (1 = *not at all intense*; 7 = *very intense*). Additionally, participants were asked to rate how morally wrong they thought the perpetrator's behavior was (1 = *not at all morally wrong*; 7 = *very morally wrong*).

Finally, participants completed the TRIM. This inventory, which consists of 18 questions, was developed to assess motivations and reactive attitudes toward perpetrators of wrongdoings (McCullough et al., 1998. See Supplemental Material). Each question is rated using a 7-point slider scale with anchors 1 = *strongly disagree* to 7 = *strongly agree*. Five of these questions assess motivations toward revenge (e.g., "I'm going to get even with him/her"), seven assess feelings of avoidance toward the perpetrator (e.g., "I have withdrawn from him/her"), and six measure feelings of benevolence toward the perpetrator (e.g., "Even though his/her actions hurt me, I have goodwill for him/her"). Internal reliability for each of these three sets of questions was verified using Cronbach's α (*Revenge* α = .91; *Avoidance* α = .95; *Benevolence* α = .93), and then an index for each factor is generated by averaging across responses.

Results

Table 3 provides descriptive and inferential statistics for each item from the MCQ as a function of condition. To evaluate differences across the affective items from the MCQ between participants that either forgave or did not forgive their perpetrators, we first conducted a MANOVA (Condition: *forgiveness*, *no forgiveness*) on all the items, revealing a main effect of Condition, $F(5, 426)$ = 11.00, $p < .001$, $\eta_p^2 = .11$. Next, we computed Bonferroni-corrected, independent samples t tests for each individual MCQ item and found significant differences between forgiveness and no forgiveness for three of them. Specifically, participants in the no forgiveness

Table 3
Descriptive (Means and Standard Deviations) and Inferential Statistics (Independent Samples t Tests) for Each Selected Memory Characteristics Questionnaire Item in Study 3

Item	Forgiveness (n = 232)	No forgiveness (n = 200)	t	p/p_{bonf}	d
Tone	2.34 (1.37)	1.71 (1.12)	5.23	<.001/<.001	.50
Valence then	1.82 (1.26)	1.59 (1.14)	2.00	.046/.229	.19
Intensity then	5.84 (1.49)	5.89 (1.60)	0.39	.693/1.00	.04
Valence now	2.76 (1.38)	2.11 (1.24)	5.13	<.001/<.001	.49
Intensity now	4.11 (1.72)	4.88 (1.57)	4.88	<.001/<.001	.47

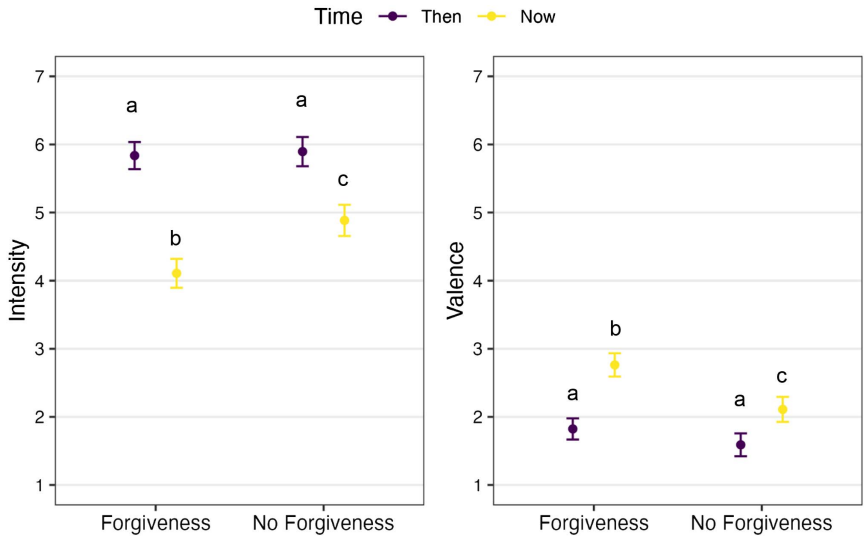
Note. Independent samples t tests are reported. Effect sizes are calculated as Cohen's d. Both uncorrected and Bonferroni-corrected p values are reported.

condition reported more negative *tone*, $M_{diff} = .63$, $t(430) = 5.23$, $p_{bonf} < .001$, 95% CI [0.40, 0.87], $d = .50$; more negative *valence now*, $M_{diff} = .65$, $t(430) = 5.13$, $p_{bonf} < .001$, 95% CI [0.40, 0.90], $d = .49$; and more *intensity now*, $M_{diff} = .78$, $t(430) = 4.88$, $p_{bonf} < .001$, 95% CI [0.46, 1.09], $d = .47$, relative to participants in the forgiveness condition. Finally, as in Studies 1 and 2, we found that participants in the no forgiveness condition thought that the remembered wrongdoing was more morally wrong ($M = 6.08$, $SD = 1.21$) than in the forgiveness condition, $M = 5.48$, $SD = 1.58$; $M_{diff} = .60$, $t(430) = 4.38$, $p_{bonf} < .001$, CI [0.33, 0.87], $d = .42$.

To statistically control for perceived moral wrongness, we next conducted a MANCOVA with condition (*forgiveness, no forgiveness*) as the independent variable and the mean-centered rating of moral wrongness as a covariate. This analysis revealed once again a main effect of Condition, $F(5, 425) = 7.78$, $p < .001$, $\eta_p^2 = .08$. We then conducted five separate analyses of covariance for each MCQ item as a dependent variable and including the rating of moral wrongness as a covariate. These analyses revealed that, when the perceived moral wrongness of the remembered event is statistically controlled for, participants in the no forgiveness condition report a more negative *tone*, $F(1, 424) = 13.46$, $p_{bomf} < .001$, $\eta_p^2 = .03$; more negative *valence now*, $F(1, 424) = 13.57$, $p_{bonf} < .001$, $\eta_p^2 = .03$; and more *intensity now*, $F(1, 424) = 12.73$, $p_{bonf} < .001$, $\eta_p^2 = .03$, relative to those in the forgiveness condition. Critically, when moral wrongness is included as a covariate in the model, there are no differences in the ratings of *valence then*, $F(1, 424) = .67$, $p_{bonf} = .830$, $\eta_p^2 = .001$, or *intensity then*, $F(1, 424) = 2.20$, $p_{bonf} = .276$, $\eta_p^2 = .005$, between participants in the forgiveness and the no forgiveness condition.

Additionally, as with the previous studies, we sought to further assess the emotional difference between the "then" and the "now" ratings by computing 2 (Condition: *forgiveness*, *no forgiveness*) × 2 (Time: *Then, Now*) ANOVAs for the ratings of valence and intensity. For the ratings of *valence*, we found effects of Condition, $F(1, 430) = 17.95$, $p < .001$, $\eta_p^2 = .04$; and Time, $F(1, 430) = 134.60$, $p < .001$, $\eta_p^2 = .238$; and a Condition × Time interaction, $F(1, 430) = 11.13$, $p \leq .001$, $\eta_p^2 = .025$. For the ratings of *intensity*, we found effects of Condition, $F(1, 430) = 11.24$, $p < .001$, $\eta_p^2 = .025$; and Time, $F(1, 430) = 228.18$, $p < .001$, $\eta_p^2 = .347$; and a Condition × Time interaction, $F(1, 430) = 15.71$, $p \leq .001$, $\eta_p^2 = .035$ (Figure 4).

Figure 4
Mean Ratings of Intensity and Valence Then (Purple) Versus Now (Yellow) as a Function of Forgiveness From Study 3



Note. Statistical differences are indicated by different lowercase letters. Error bars indicate 95% confidence intervals. See the online article for the color version of this figure.

Test of simple effects revealed that when asked to reflect on the intensity of the event now, participants in the forgiveness condition report lower ratings relative to those in the not forgiveness condition, $M_{diff} = .77$, $t(430) = 4.88$, $p_{bonf} < .001$, 95% CI [0.36, 1.20], $d = .86$. Similarly, participants in the forgiveness condition report higher ratings of valence now relative to those in the no forgiveness condition, $M_{diff} = .65$, $t(430) = 5.13$, $p_{bonf} < .001$, 95% CI [0.32, 0.99], $d = .58$. However, there were no differences in intensity then or valence then between forgiveness and no forgiveness conditions (both $p > .05$). Thus, as with Studies 1 and 2, we found the same significant Time × Condition interaction for ratings of valence and intensity. That is, in all three studies, emotional differences between the forgiveness and no forgiveness conditions were specific to ratings of valence and intensity *now*, not *then*.

Next, to evaluate differences in the TRIM as a function of forgiveness, we conducted a one-way MANOVA (Condition: *forgiveness*, *no forgiveness*) on the three factors of the TRIM, revealing a main effect of Condition, $F(3, 428) = 93.32$, $p < .001$, $\eta_p^2 = .40$. We next conducted independent sample t tests for each measure. This analysis revealed that participants who forgave the perpetrators were less inclined to harbor feelings of *revenge* toward them relative to those who had not forgiven, $M_{diff} = .93$, $t(430) = 6.73$, $p_{bonf} < .001$, 95% CI [0.66, 1.20], $d = .65$. Likewise, participants who forgave their perpetrators were less inclined to *avoid* them relative to those that did not forgive them, $M_{diff} = 2.35$, $t(430) = 15.07$, $p_{bonf} < .001$, 95% CI [2.04, 2.65], $d = 1.45$. Finally, participants who forgave their perpetrators were more inclined to express feelings of *benevolence* toward them relative to those who had not forgiven the perpetrators, $M_{diff} = 2.25$, $t(430) = 16.06$, $p_{bonf} < .001$, 95% CI [1.97 2.52], $d = 1.55$.

Again, to statistically control for perceived moral wrongness, we conducted a MANCOVA with condition (forgiveness, no forgiveness) as the independent variable and the mean-centered rating of morality as the covariate on each of the three factors of the TRIM. This analysis revealed, once again, a main effect of Condition, $F(3, 427) = 83.39$, $p < .001$, $\eta_p^2 = .37$. Next, we conducted three separate analyses of covariance for each TRIM factor, with the rating of moral wrongness as covariate. These analyses confirmed that, when the perceived moral wrongness of the remembered event is statistically controlled for, participants in the forgiveness condition had lower ratings of *revenge*, $F(1, 424) = 34.75$, $p_{bonf} < .001$, $\eta_p^2 = .08$; higher ratings of *avoidance*, $F(1, 424) = 198.08$, $p_{bonf} < .001$, $\eta_p^2 = .32$; and higher ratings of *benevolence* toward the perpetrator, $F(1, 424) = 225.19$, $p_{bonf} < .001$, $\eta_p^2 = .35$, relative to those in the no forgiveness condition (Figure 5).

Finally, as an exploratory analysis, we sought to investigate the relationship between the affective characteristics of the remembered wrongdoings and the participant's measures of the reactive attitudes associated with forgiveness. To that end, we conducted a partial correlation analysis between the MCQ items and the TRIM factors while including the morality rating as a control variable (Table 4). We found that ratings of *valence then* and *intensity now* were weakly correlated with the measure of revenge; the ratings of *tone*, *valence now*, and *intensity now* were weakly correlated with the measure of avoidance; and the ratings of *tone*, *valence now*, and *intensity now* were weakly to moderately correlated with the measure of benevolence. (Full correlation results are presented in Supplemental Table ST2).

Discussion

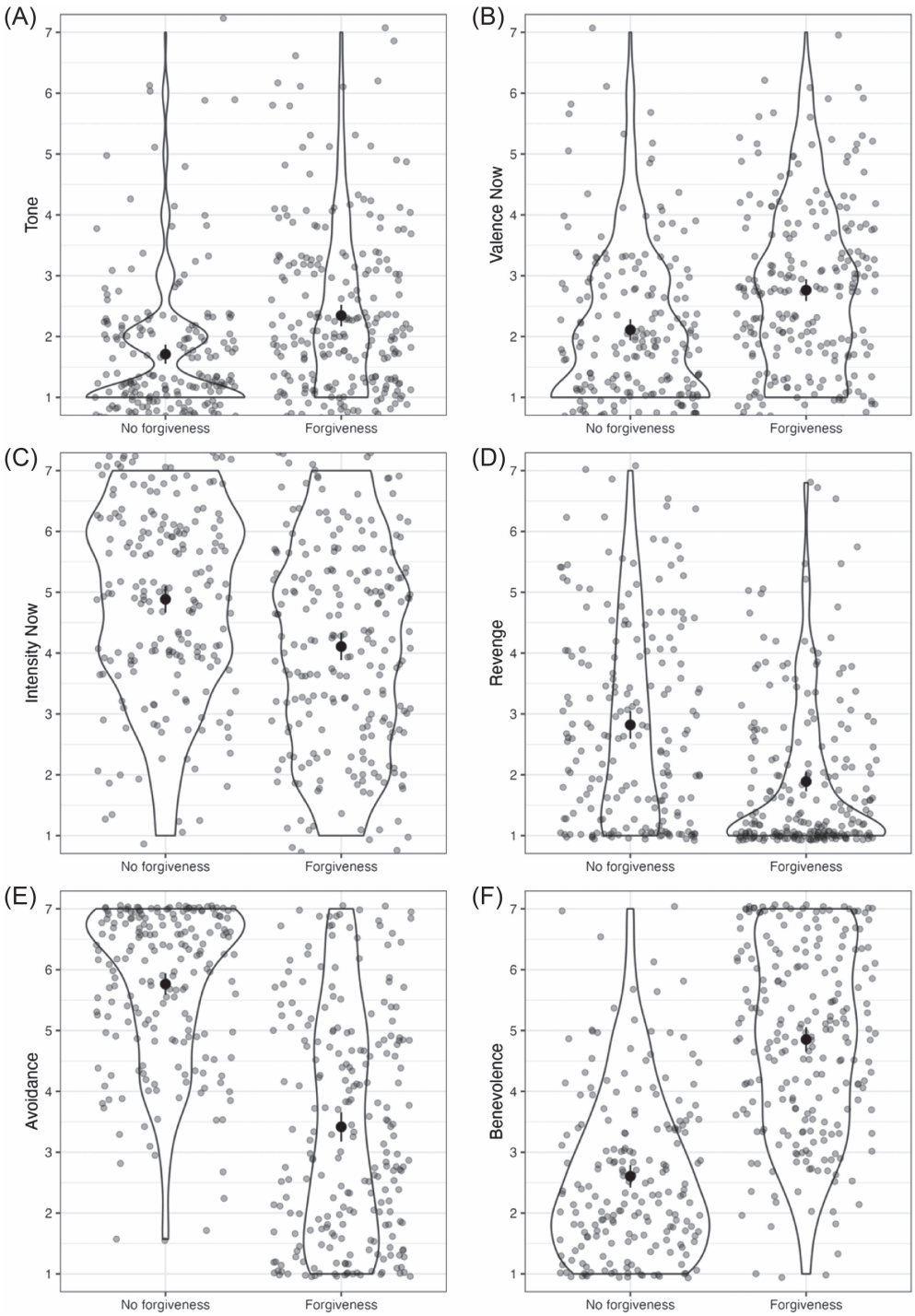
In Study 3, we replicated the findings from Studies 1 and 2 showing differences in the affective characteristics of the remembered wrongs at the time of retrieval (i.e., tone, valence now, and intensity now) as a function of forgiveness. Critically, we found that, when statistically controlling for perceived moral wrongness, participants who forgave the perpetrators rated the overall tone of the memory and the valence at the time of retrieval as less negative, as well as lower intensity when remembering, relative to those who did not forgive the perpetrators. By contrast, we found no difference in the ratings of valence and intensity at the time of occurrence between those who forgave and those who did not. Second, as expected, we found differences in the three reactive attitudes measured by the TRIM—revenge, avoidance, and benevolence—as a function of forgiveness. Consistent with previous findings (McCullough et al., 2009), participants who had forgiven the perpetrators of their remembered wrongdoings reported lower feelings of revenge and avoidance and higher feelings of benevolence, relative to those who had not forgiven them. Critically, these differences are also evident when the perceived moral wrongness of the remembered wrongdoing is statistically controlled for. Finally, we also explored the relationship between the affective characteristics of the memory experience when remembering a past wrongdoing and the reactive attitudes associated with forgiveness. Although speculative, our hypothesis was that the three factors of the TRIM would be correlated with the affective measures associated with retrieval—that is, tone, valence now, and intensity now—but not with the affective measures associated with the memory of the occurrence. This hypothesis was only supported for the factors of avoidance and benevolence. Specifically, we found that tone was weakly negatively correlated with avoidance and weakly positively correlated with benevolence, valence now was weakly negatively correlated with avoidance and moderately correlated with benevolence, and intensity now was weakly positively correlated with revenge and avoidance, and weakly negatively correlated with benevolence. However, we found no correlation between tone and valence now and ratings of revenge, which, contrary to our hypothesis, were weakly correlated with ratings of valence then. Taken together, these results suggest that the differences in affective ratings at the time of retrieval predicted by the *emotional fading* account, as well as the expected differences in reactive attitudes of revenge, avoidance, and benevolence, remain when statistically controlling for the perceived moral wrongness of the remembered wrongdoing, and, also, that such measures are associated with differences in the reactive attitudes of avoidance and benevolence toward the perpetrator but not so with feelings of revenge.

General Discussion

Although people hurt and wrong each other with remarkable frequency in everyday life (Hofmann et al., 2014), they also often manage to forgive each other, which in turn allows them to move on and, sometimes, to reconcile and restore relationships (McCullough, 2008). A long-standing and influential view on the nature of forgiveness holds that, at its core, to forgive involves a change in emotions, which in turn leads to the overcoming of feelings of resentment and desires for revenge (Butler, 1726; Hughes, 1993; Murphy & Hampton, 1988). Emotional accounts of

Figure 5

Differences in Affective Characteristics and Reactive Attitudes at Retrieval From Study 3



Note. Ratings for the three critical Memory Characteristics Questionnaire items of tone (A), valence now (B), and valence now (C) as well as the three Transgression-Related Interpersonal Motivations Inventory factors of revenge (D), avoidance (E), and benevolence (F) as a function of forgiveness. All these differences are significant ($p < .001$) when moral wrongness is statistically controlled for. Data is jittered for better visualization.

Table 4
Partial Correlation Between Selected MCQ Items and TRIM Factors From Study 3

Item	*M*	*SD*	1	2	3	4	5	6	7	8
1. Tone	2.05	1.30	—							
2. Valence then	1.72	1.21	.530***	—						
3. Intensity then	5.86	1.54	−.149**	−.188***	—					
4. Valence now	2.46	1.36	.563***	.412***	−.125**	—				
5. Intensity now	4.47	1.69	−.011	.051	.227***	−.304***	—			
6. Revenge	2.32	1.51	.023	.225***	−.046	−.047	.223***	—		
7. Avoidance	4.50	1.99	−.185***	−.054	.010	−.246***	.118*	.442***	—	
8. Benevolence	3.81	1.83	.223***	.089	.031	.302***	−.147**	−.422***	−.818***	—

Note. Results of the partial correlation analysis from Study 3 for comparing affective characteristics of the memories (Memory Characteristics Questionnaire items) and interpersonal motivations for avoidance, revenge, and benevolence (Transgression-Related Interpersonal Motivations Inventory measures) while controlling for perceived moral wrongness (two-tailed, $df = 429$). MCQ = Memory Characteristics Questionnaire; TRIM = Transgression-Related Interpersonal Motivations Inventory.
* $p < .05$. ** $p < .01$. *** $p < .001$.

forgiveness have been echoed by many influential definitions of forgiveness in the psychological literature. Specifically, most definitions take forgiveness to essentially involve changing a negative feeling toward a transgression and/or perpetrator for a neutral or positive one (Enright et al., 1992; Fernández-Capo et al., 2017; McCullough, 2000), and most also involve a motivational component whereby forgiveness is manifested by the victim's reduction or elimination of negative attitudes, such as revenge and avoidance as well as the generation of positive ones such as compassion and benevolence (Worthington, 2007). However, the precise psychological processes underlying forgiveness' emotional change were unclear in the empirical literature.

In the current article, we experimentally compared two views that could account for this emotional change. On the one hand, there is the *episodic fading* account, according to which wrongdoings that are not forgiven tend to be reactivated and frequently ruminated upon. The frequent reactivation of these memories prevents their episodic contents from fading away and losing their clarity and vivacity. By contrast, memories of forgiven wrongdoings are reactivated and ruminated upon less, so their contents are more likely to lose their clarity and vivacity. Due to this episodic fading, the negative affect and the emotional intensity elicited by the remembered wrongdoing will also decrease, leading to the emotional change we experience when wrongdoings are forgiven (Blustein, 2014; Boleyn-Fitzgerald, 2002; Noreen et al., 2014). On the other hand, the *emotional fading* account (Amaya, 2019) holds that although memory mechanisms may still underpin the emotional change observed for forgiven past wrongdoings, they do so not by impoverishing the episodic components of the memory representation but rather by modifying only its affective aspects. This recent proposal is consistent with empirical evidence showing not only the selective malleability of episodic autobiographical memories (Haubrich & Nader, 2018) but also the decoupling between their episodic and affective components (Lipinska & Thomas, 2019; Williams et al., 2022).

The first studies offered an initial test of these two accounts. An empirical consequence of the *episodic fading* account is that both episodic and affective details of forgiven wrongdoings will be lower relative to not forgiven ones, whereas the *emotional fading* account predicts only a difference in the emotional components associated with the retrieval of the memory, but no difference in other details. The results of Study 1—and particularly those that replicated from the pilot study—were consistent with the *emotional fading* account but not so with the *episodic fading* account. Specifically, using the Memory Characteristics Questionnaire (Johnson, 1988), we found that, relative to participants who forgave the perpetrators, those who have not forgiven reported feeling more negative affect at the time of retrieval, more emotional intensity, a more overall negative tone in their memory, and more serious implications of the remembered wrongdoings for their life. Critically, and contrary to what the *episodic fading* account would have predicted, there were no differences in how participants felt about the event when it occurred, nor in terms of the intensity of the event then; the affective differences pertained only to items assessing their affective reactions at the time of retrieval. Moreover, there were no differences in any of the episodic components of the memories for the forgiven versus unforgiven wrongdoings.

Previous studies have shown that negative memories tend to elicit lower ratings of episodic characteristics, such as sensory, temporal, and contextual details, relative to positive ones (Kensinger & Schacter, 2008; Schaefer & Philippot, 2005). A possibility that is consistent with the *episodic fading* account is that, in retrospect, forgiven wrongdoings are remembered as having been more positive relative to not forgiven ones. However, our results do not support this hypothesis. In our studies, we did not find any differences in either the episodic or the affective components associated with the memory of the wrongdoing as it happened in the past, suggesting that participants did not change their minds about how negative the event was, nor did forgiveness affect their phenomenological experience of the episodic details of the remembered event. Instead, our results suggest that forgiveness only impacts the emotion felt at the time of retrieval, leaving our mnemonic judgments about the remembered event unscathed.

For some researchers, the emotional change elicited by forgiving occurs in part because when a victim of a wrongdoing forgives the perpetrator, they release them from a moral debt or obligation (Nelkin, 2013; Swinburne, 1989). More recently, others have argued that this relinquishing of obligations and debts is bidirectional (Warmke, 2016), for those that have been wronged may feel as though they have an obligation toward benevolence and, thus, the responsibility to bring themselves to forgive their perpetrators. As a result, we reasoned that if in forgiving one frees the perpetrator from

a moral debt, and such relinquishing of a moral obligation brings about an emotional change in the victim, then it is likely that a similar change in emotion occurs when one's moral debt as a perpetrator has been removed by being forgiven. In Study 2, we explored this issue, and the results showed that both victims and perpetrators reported less negative tone, fewer implications from the wrongdoing, less negative valence, and less intensity at the time of retrieval in the forgiveness condition relative to the not forgiveness condition—although, except for the rating of implications now, the effects were larger for the victims than for the perpetrators. Critically, we found no difference in any rating pertaining to episodic details or to affective components associated with the time of occurrence of the remembered event as a function of forgiveness for either victims or perpetrators. We take these results to support the *emotional fading* rather than the *episodic fading* account, while also extending it to show parallel effects of forgiveness for victims and perpetrators.

Emotional accounts of forgiveness hold that forgiveness consists of an emotional change that brings about a reduction in reactive attitudes toward the perpetrator—particularly a reduction in feelings such as revenge, resentment, and avoidance. Extant empirical evidence supports the view that forgiven wrongdoings are associated with reduced feelings of avoidance and revenge, as well as increased feelings of benevolence, toward the perpetrator (McCullough et al., 1998, 2003, 2009). What is unclear is how the affective components of our autobiographical memories of past wrongdoings are associated with these changes in reactive attitudes. We reasoned that, if the *emotional fading* account is correct, then we should expect to see that only the affective characteristics at retrieval will be predictive of the change in reactive attitudes. By contrast, if the *episodic fading* account is on the right track, both affective components associated with the remembered event at the time of occurrence as well as those elicited at the time of retrieval should predict changes in reactive attitudes. Interestingly, while the results of Study 3 replicated the affective differences at retrieval identified in Studies 1 and 2, their association with reactive attitudes was not exactly as predicted by either of the two accounts. Specifically, while we found that the affective characteristics at the time of retrieval were predictive of participants' ratings of avoidance and benevolence toward the perpetrator—as predicted by the *emotional fading* account—they were not associated with the participants' feelings of revenge toward them. Instead, we found that participants' judgments of valence at the time of occurrence as well as intensity at the time of retrieval were associated with their feelings of revenge toward the perpetrators. It is important to note, however, that unlike the judgments of avoidance and benevolence, the judgments of revenge fell way below the midpoint for both the forgiveness and the no forgiveness conditions. This may be because the nature and severity of the wrongdoings reported by our online sample are such that they do not elicit strong attitudes of revenge regardless of whether the victims had forgiven the perpetrators. While further studies should explore differences in reactive attitudes as a function of type and severity, the results of Study 3 suggest that our affective reactions when remembering past wrongdoings are not equally predictive of our feelings of revenge, avoidance, and benevolence toward their perpetrators.

It is important to note that our results only suggest that forgiveness may help to mollify the affective characteristics of remembered wrongdoings at the time of retrieval, but they say nothing as to why such emotional fading happens. One possibility is that not forgiving the perpetrator of a past wrongdoing may prevent the normal fading of affect associated with negative memories. Extant evidence of what has been known as "fading affect bias" suggests that, as time passes, negative memories tend to become less negatively valenced and less intense (Ritchie et al., 2009; Walker et al., 1997, 2003). Perhaps not forgiven wrongs are ruminated upon more frequently than forgiven ones, as the *episodic fading* account suggests, but whereas this repetitive rumination does not alter the episodic aspects of the memory, it may prevent the normal affective fading to run its course. Work on repetitive counterfactual rumination, for instance, does show that frequently reactivating memories in the contexts of imagining alternative ways in which past negative events could have occurred does interrupt the normal fading of affect (De Brigard et al., 2019). Perhaps a similar process may be occurring with not forgiven wrongs, although then one should expect to see differences in ratings associated with rumination, such as items indexing the frequency with which one thinks or talks about a past event.

Another possibility is that forgiveness may help to mollify the affect associated with the remembering of a past wrongdoing via a process of emotional reappraisal (Amaya, 2019). Current accounts of memory strongly suggest that remembering is a reconstructive process, and that even though memories are usually accurate enough, they are malleable and prone to errors and biases (De Brigard, 2014, 2023; Schacter et al., 2011). One source of this malleability comes from the fact that, when reactivated, the content of episodic memories becomes labile and modifiable by the retrieval context (Haubrich & Nader, 2018). And one way in which the context of retrieval can alter the mnemonic content of an episodic memory is via emotional reappraisal processes, whereby the emotions experienced at the time of retrieval help to modify the valence and emotional intensity associated with the encoded event (Gross, 2013). Such reappraisal, however, need not affect the clarity and vivacity with which the episodic details of the past wrongdoings are remembered; instead, it only influences the affect experienced during retrieval. Thus, when emotional reappraisal strategies are employed, one could effectively mollify the negative emotional aspects of the retrieved content so that, when the event is retrieved at a later time, it is experienced with less negative valence and intensity than before (Powers & LaBar, 2019).

Another possibility, mentioned by an anonymous reviewer in reference to the results from Study 2, is that the processes underwriting the affective change for victims may be different from than those supporting the emotional fading in perpetrators. Perhaps the affective reduction victims experience is due to a process of emotionally reappraising the past wrongdoing, whereas in the case of the perpetrator, the reported emotional change may have been due to the mere fading of affect resulting from having "settled the matter" with the wrongdoer—to use the reviewer's expression—and, thus, no longer ruminating or even thinking much about the event. Our results are insufficient to adjudicate between these two possibilities, however, so further research would be needed to do so.

Now, if the affective changes at the time of retrieval are due to emotional reappraisal mechanisms employed, whether voluntarily or involuntarily, on the part of the forgiver, then it may be possible to boost them to bring about victims to be more likely to forgive the

perpetrators. Although limited, there is some evidence to the effect that emotional reappraisal strategies may increase participants' tendencies toward less reactive and more benevolent attitudes. In one study, participants who exercised an emotional reappraisal strategy based on compassion toward the perpetrator exhibited increased empathy and intentions to forgive relative to those who merely ruminated upon a past offense (Witvliet et al., 2010). Similarly, Larsen et al. (2012) found that a future-oriented emotional reappraisal strategy was more effective in reducing systolic and diastolic blood pressure relative to simply ruminating upon a past wrongdoing. We think that combining effective memory reappraisal strategies to mollify emotional reactions at retrieval could benefit forgiveness therapies.

After all, there is plenty of empirical evidence suggesting that forgiving can have positive effects on both mental and physical well-being (for recent reviews, see Toussaint et al., 2020; Webb & Toussaint, 2019; Witvliet et al., 2020). More precisely, studies have shown that forgiving is associated with lower levels of depression and stress, reduced anger, and better emotion regulation and coping skills. Moreover, studies have shown that forgiving has beneficial cardiovascular effects (Huang & Enright, 2000; Larsen et al., 2012; Lawler et al., 2003) as well as reduced levels of cortisol (McCullough et al., 2007). These results are consistent with the hypothesis that memory mechanisms are responsible for the mollification of the affective response elicited when remembering the wrongdoing. Additionally, our results are also suggestive of the possibility that similar beneficial effects can occur as a result of being forgiven and also that such effects could be underwritten by similar memory reappraisal mechanisms. Once again, further research is needed to explore the role that being forgiven may have in one's reframing of past personal wrongdoings.

Of note, although the main goal of the studies reported here was to compare the phenomenological characteristics of recollective experiences of forgiven versus not forgiven wrongs in the context of the episodic fading and the emotional reappraisal accounts, we also found that forgiven wrongdoings tended to be judged as less morally wrong than not forgiven ones. We initially included the rating of moral wrongness to verify that the remembered events were actually deemed morally wrong by the participants, and we had no hypothesis as to whether or not there would be differences in this rating between forgiven and not forgiven memories. Interestingly, while we did find that the memories of the wrongdoings were overall considered morally wrong across all studies, we also found that forgiven wrongdoings were consistently rated as less morally wrong than not forgiven ones. Since the present studies are retrospective in method (St. Jacques & De Brigard, 2015), it is impossible to know whether the remembered wrongs, at encoding, were perceived by the participants as equally morally wrong. Study 3 tries to mitigate the concern that there may be an inherent difference in perceived moral wrongness between the memories sampled in the forgiven versus the not forgiven conditions by statistically controlling for perceived moral wrongness. Nevertheless, the same differences in affective reactions at retrieval emerged.

Our results still show, however, that remembered wrongdoings that were forgiven were considered less morally wrong than remembered wrongdoings that were not forgiven. Taking again a page from the philosophical work on forgiveness, we think that a possible and attractive interpretation for this result is that in forgiving a wrongdoing, we also revise our retrospective judgment of how morally wrong the action was. It is generally claimed that forgiveness requires not only for the forgiven offense to be morally wrong but also for the wrongdoer to be morally blameworthy for their action (Allais, 2008; Haber, 1991; Murphy, 2003). In an influential proposal, Hieronymi (2001) argued that forgiveness must be uncompromising. That is, the emotional changes that accompanies forgiveness cannot be the result of revising one's judgment about being wronged or about the blameworthiness of the perpetrator. In the event of revising these judgments, Hieronymi claims that one is simply letting go rather than forgiving. While some philosophers have objected to the idea of uncompromising forgiveness, many philosophers—particularly those focused on the ethics of forgiving—have followed Hieronymi in arguing that forgiveness is inconsistent with revising one's judgment about the moral wrongness of the offense. Our results are not entirely incongruent with this suggested picture of forgiveness. Even those who remember forgiven wrongdoings still report the offense as being morally wrong. However, there is something to the idea that forgiveness engenders a degree of moral compromise. The emotional reappraisal of one's memory of forgiven wrongdoings seems to reduce the perceived moral wrongness of the original offense. It is possible that emotional reappraisal drives the revision of wrong judgments. Speculatively, this makes sense if one function of forgiveness is to restore relationships. Recent works suggest that judgments of wrongness are associated with negative character assessments (Murray et al., 2024; Uhlmann et al., 2015). Forgiving might weaken such judgments—without extinguishing them entirely—as a way of preparing people to reconcile and repair their relationships. This is consistent with the well-documented role of emotion in moral judgment (Huebner et al., 2009) and recent work suggesting that differences in moral evaluation may, too, be underpinned by emotional reappraisal strategies (Helion & Ochsner, 2018). Future research is needed to better explore this intriguing possibility.

Limitations and Constraints on Generality

We take the results of the studies reported here as offering support to the *emotional fading* account of forgiveness over the episodic fading one. Nevertheless, they are also importantly limited in a number of ways. First of all, as with many studies of real-life autobiographical memories, our studies are limited by the retrospective nature of the experimental design. Therefore, although suggestive, we cannot interpret the identified differences as *sufficient* evidence for emotional change due to forgiveness. To be sure that forgiveness is indeed the main reason why such emotional change is experienced when remembering forgiven versus not forgiven wrongs, both prospective and longitudinal assessments would be required (St. Jacques & De Brigard, 2015). A second limitation pertains to the population sample, as our data, collected online, comes mainly—if not only—from Western, Educated, Industrialized, Rich, Democratic individuals (Henrich et al., 2010). This limits the generalizability of the results reported here to non-Western, Educated, Industrialized, Rich, Democratic populations, for which future studies would be required. Finally, although we asked participants to report remembered wrongdoings that took

place in the past 10 years, we do not know if elapsed time within that period may have played a role in the results.

A constraint on the generality of our results stems from the fact that the nature of the wrongdoings reported by the participants varie along several dimensions. Since there is little work exploring the phenomenological characteristics of our recollections of forgiven and not forgiven wrongdoings, we decided to let participants sample from any kind of moral wrongdoings they had experienced, rather than trying to constrain the sampling process to a particular kind of moral violation. Nevertheless, it is possible that the affective differences in the recollective experience of forgiven and not forgiven wrongs identified here do not generalize across all kinds of moral violations. However, all these limitations point to intriguing new avenues for exploring the connection between memory and forgiveness.

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