

# I'm Not the Person I Used to Be: The Self and Autobiographical Memories of Immoral Actions

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People maintain a positive identity in at least two ways: They evaluate themselves more favorably than other people, and they judge themselves to be better now than they were in the past. Both strategies rely on autobiographical memories. The authors investigate the role of autobiographical memories of lying and emotional harm in maintaining a positive identity. For memories of lying to or emotionally harming others, participants judge their own actions as less morally wrong and less negative than those in which other people lied to or emotionally harmed them. Furthermore, people judge those actions that happened further in the past to be more morally wrong than those that happened more recently. Finally, for periods of the past when they believed that they were very different people than they are now, participants judge their actions to be more morally wrong and more negative than those actions from periods of their pasts when they believed that they were very similar to who they are now. The authors discuss these findings in relation to theories about the function of autobiographical memory and moral cognition in constructing and perceiving the self over time.

**Keywords:** moral, autobiographical memory, temporal self-appraisal theory, lying, emotional harm

People maintain a positive identity by evaluating themselves in more favorable terms than they evaluate other people (Alicke & Sedikides, 2009) and by judging themselves to be better now than they were in the past (Wilson & Ross, 2003). Rapidly accumulating evidence also suggests that morality is essential for the construction and perception of one's identity over time (Strohinger, Newman, & Knobe, in press). Nevertheless, few studies have integrated these diverse research programs to explore how autobiographical memories of moral and immoral actions shape one's identity. To fill this gap in the literature, we investigated how

individuals, when recalling personal, autobiographical memories of actions of moral relevance, compare themselves to other people and to their past selves.

Disparate lines of research have produced convergent evidence suggesting that people evaluate themselves in more positive terms than they evaluate others (Alicke & Sedikides, 2009; Taylor & Brown, 1988, 1994). In particular, biases and distortions in the way people remember the past may help to maximize the positivity and minimize the negativity of their self-assessments relative to others (Conway, Singer, & Tagini, 2004; D'Armentau & Van der Linden, 2008). People are more likely to recall and vividly re-experience positive information about themselves than they are to recall such information about others (D'Armentau & Van der Linden, 2008; Rogers, Kuiper, & Kirker, 1977). Complementary evidence has shown that people believe they are more virtuous, intelligent, talented, and compassionate than the average person (Alicke & Govorun, 2005; Alicke & Sedikides, 2009; Batson & Collins, 2011). Critically, compared to beliefs in other domains such as intelligence, competence, or ambition, desirable moral traits (e.g., honesty) are associated with the largest difference between judgments of self and the average person (Alicke, Dunning, & Krueger, 2005; Alicke, Vredenburg, Hiatt, & Govorun, 2001; Tappin & McKay, in press). Thus, a sense of moral superiority obtained through evaluating oneself in more favorable terms than others is a particularly strong bias that helps people maintain a positive personal identity (Tappin & McKay, in press).

People not only compare themselves with others to maintain a positive view of self; they also compare their present selves with their past selves. Some evidence even suggests that people more frequently compare themselves with their past selves than with other people (Wilson & Ross, 2000). At least one theory, temporal self-appraisal theory, explains why we compare our present selves with past selves. According to this theory, assessments of the subjective distance between past experiences and the present ones

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facilitate the self-enhancement and self-protection functions of autobiographical memory (Ross & Wilson, 2002; Wilson & Ross, 2001, 2003). People often compare themselves to past selves because they perceive themselves as improving over time, regardless of whether the perceived improvement is accurate (Ross & Wilson, 2000; Ryff, 1991). Notably, evaluations of former selves, compared to the current self, become increasingly unfavorable over time, and people are most critical of subjectively distant past selves on the traits they believe are most important (Wilson & Ross, 2001, 2003). However, this work on temporal self-appraisal theory has not investigated the role of the perceived morality or immorality of past actions. Comparisons with perceived inferior past selves—specifically through autobiographical recollections of immoral actions in the distant past—may be particularly important for the perception of self-improvement and the maintenance of a positive identity.

Despite the importance of morality and memory for the construction and perception of one's identity over time (Strohinger et al., *in press*), autobiographical memories of moral and immoral events have not been extensively studied. Some evidence suggests that memories of immoral actions are particularly susceptible to biases and distortions (Kouchaki & Gino, 2016; Pizarro, Laney, Morris, & Loftus, 2006). Of particular relevance to the present investigation, Escobedo and Adolphs (2010) identified a pronounced bias in recollections of both moral and immoral memories by discovering that memories of events that occurred in the nearer past (nearer memories) tend to be rated as less negative than memories of events that occurred in the more distant past (distant memories). This finding accords with work showing that autobiographical recollections often serve a self-enhancement function (Demiray & Janssen, 2015; Wilson & Ross, 2003). It remains unclear, however, whether less negative memories with moral content correspond to nearer events for both actions committed by oneself and those committed by others to oneself. Relatedly, it is unclear whether more distant memories are judged to be more morally wrong than nearer memories. In addition, it is unclear whether certain kinds of moral transgressions disproportionately produced the effects obtained by Escobedo and Adolphs (2010). Finally, because Escobedo and Adolphs (2010) only assessed the relationship between the affective qualities of memories and the time that they occurred in the past, it remains unclear whether these effects still hold when accounting for subjective, psychological distance from current selves. The current article investigates these unanswered questions.

To this end, we distinguish between actor and recipient autobiographical memories. Actor memories concern actions that the participant committed, and recipient memories concern actions for which the participant was the target. Furthermore, recent work has shown that situations involving emotional harm and dishonesty are among the most commonly experienced moral violations (Hofmann, Wisneski, Brandt, & Skitka, 2014), suggesting that individuals should be more likely to recall multiple memories of lying and emotional harm than memories for other moral violations (e.g., sanctity). As such, Study 1a investigates memories about lying, and Study 1b investigates memories about emotional harm; Study 2 investigates both kinds of memories.

We report results from three studies that collectively build upon research showing that memory biases and distortions enable people to evaluate themselves in more positive terms than they eval-

uate others and their past selves. We investigate whether there are actor-recipient differences in the emotional qualities and perceived moral wrongness of remembered actions involving lying and emotional harm. We also investigate whether the perceived emotional qualities and moral wrongness of these remembered actions differ as a function of temporal distance and of perceived subjective, psychological distance from past selves.

## Study 1

Study 1 is divided into two parts and investigates the emotional and moral content of autobiographical memories involving lying (Study 1a) and emotional harm (Study 1b) from actor and recipient perspectives. We make four specific predictions in Study 1. First, consistent with previous results showing that people are motivated to evaluate themselves in more positive terms than they evaluate others (Alicke & Sedikides, 2009; Taylor & Brown, 1994), we predict that remembered actions in which the participant is the actor (i.e., actor perspective) will be rated as less morally wrong and less negative than remembered events in which the participant is the recipient of the action (i.e., recipient perspective). Our additional predictions build upon previous research on temporal self-appraisal theory (Wilson & Ross, 2003), autobiographical memories with moral content (Escobedo & Adolphs, 2010), and the critical role of morality in constructing and perceiving the self (Strohinger et al., *in press*). Second, we predict that more temporally distant remembered actions will be rated as more negative than temporally nearer remembered actions when the participant is the actor but not the recipient of the action. Third, we predict that more temporally distant remembered actions will be judged to be more morally wrong than temporally nearer remembered actions when the participant is the actor but not the recipient of the action. Given that people compare themselves to their past selves to perceive self-improvement and maintain a positive self-image, actions in more distant memories from the actor perspective may be judged as more morally wrong than actions in nearer memories. Fourth, we predict that the more people believe they have changed since the event occurred, the more likely they are to judge their actions during that time in the past as more morally wrong in the actor perspective but not in the recipient perspective.

### Study 1a

In Study 1a, participants recalled specific events from their personal pasts that involved lying from actor and recipient perspectives.

#### Method.

**Participants.** A total of 51 adults voluntarily participated in this study. Sample sizes in Study 1a and 1b were determined in order to obtain a similar number of participants and autobiographical memories to those acquired by Escobedo and Adolphs (2010) for their analyses. Three participants were excluded due to failures in following instructions. Data were analyzed with the remaining 48 participants ( $M_{\text{age}} = 24.50$ ,  $SD = 2.75$ , age range = 20–30; 30 females), and each participant was tested individually. All participants were fluent English speakers. Written informed consent was obtained from each participant in accordance with protocol approved by the Duke University Campus Institutional Review Board.

**Procedure.** Participants were seated in a room alone in front of a computer, on which they typed all of their responses. The setting was private, and participants were assured that their responses would be confidential. Each participant was given 30 min to recall as many specific, autobiographical events as possible in which he or she lied to another person (i.e., the actor perspective) and another 30 min to recall as many events as possible in which he or she discovered that another person lied to him/her (i.e., the recipient perspective). The order in which participants completed actor and recipient perspectives was counterbalanced across subjects. Participants were told that all memories must be of events that have occurred within the past 10 years, must be of one particular episode specific in time and place, and must have been personally experienced.

For each memory, participants described the event in two to six sentences and listed the time and place of the event. Table 1 provides several examples of memories recalled by participants. To record when the event took place relative to now, participants were provided with the following options from which they were instructed to choose exactly one: within the past day, within the past week, within the past month, within the past year, within the past two years, within the past three years, within the past four years, within the past 5 years, within the past 6 years, within the past 7 years, within the past 8 years, within the past 9 years, within the past 10 years. Then, participants provided the following ratings for the actions in each memory in this order: overall, how well do you remember the event? (1 = *hardly*, 7 = *very well*); how well do you remember how you felt during the event? (1 = *not at all*, 7 = *very well*); how morally right or morally wrong was the action performed? (1 = *very morally wrong*, 7 = *very morally right*); what were your emotions associated with the event (i.e., valence)? (1 = *very negative*, 7 = *very positive*); what was the intensity of the emotion you felt during the event? (1 = *not at all intense*, 7 = *very intense*); and to what extent do you believe you are the same person now compared to the person you were around the time that the remembered event occurred (1 = *very similar*, 7 = *very different*). Although these data were not analyzed, we included measures of memory vivacity, detail, and ease of imagining to further ensure that participants were remembering specific episodes of relatively short duration from the past. We have reported all measures, conditions, and data exclusions. Upon completion of the study, participants were monetarily compensated for their time.

**Statistical analyses.** All data were analyzed using R with the lme4 software package (Bates, Maechler, Bolker, & Walker, 2015). Data were fit to linear mixed-effects regression (LMER) models with subject always modeled as a random effect. Random

slopes and intercepts were included in each model. Fixed effects and outcome variables differed between models depending upon the hypothesis being tested. Significance for models with continuous outcome variables was assessed using the Kenward-Roger corrected *F* test with the pbkrtest package (Halekoh & Hojsgaard, 2014), and 95% confidence intervals were computed using parametric bootstrapping. To assess the relationship between temporal distance (i.e., time relative to the present when the event in the memory occurred) and our other variables of interest within the LMER framework, the time variable was coded as follows: 0 = within the past day, 1 = between the past week, 2 = within the past month, 3 = within the past year, 4 = within the past 2 years, 5 = within the past 3 years, 6 = within the past 4 years, 7 = within the past 5 years, 8 = within the past 6 years, 9 = within the past 7 years, 10 = within the past 8 years, 11 = within the past 9 years, 12 = within the past 10 years. We created these time bins in such a way to closely resemble the methods from Escobedo and Adolphs (2010).

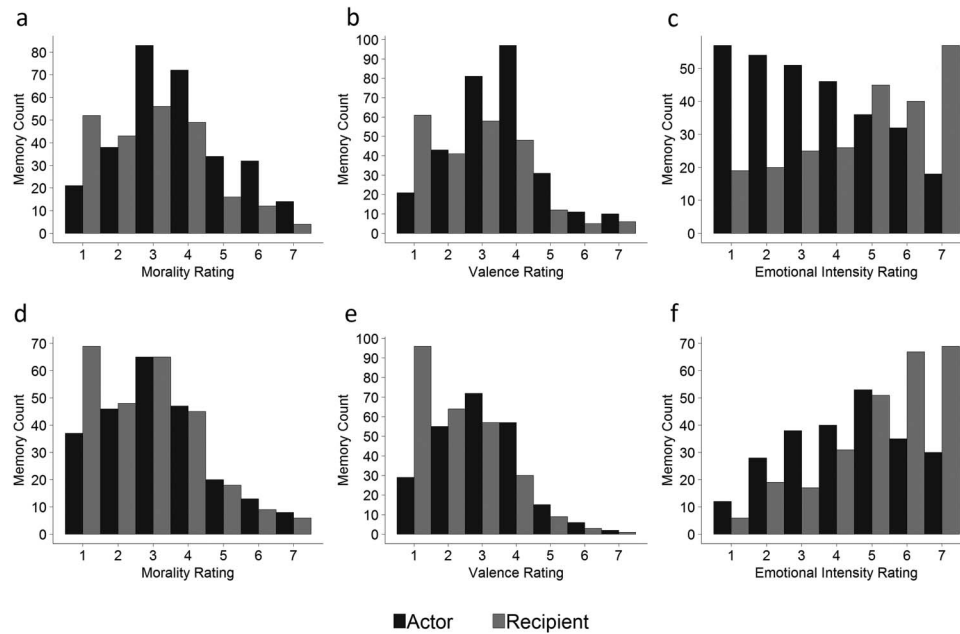
**Results and discussion.** On average, participants generated 6.13 memories ( $SD = 2.19$ ) in the actor perspective and 4.83 memories ( $SD = 1.85$ ) in the recipient perspective. Across all participants, a total of 294 memories were generated in the actor perspective, and a total of 232 memories were generated in the recipient perspective.

**Morality and emotion differ with perspective.** Our first prediction was that remembered events in which the participant is the actor will be rated as less morally wrong and less negative than remembered events in which the participant is the recipient of the action. A LMER of perspective (binary factor: actor, recipient) on moral wrongness revealed a significant effect of perspective— $b = -.789$ ,  $SE = .131$ ,  $F(1, 46.069) = 20.451$ ,  $p < .0001$ , 95% CI  $[-1.50, -.527]$ —such that actions in memories in the recipient perspective were rated as more morally wrong than those in memories in the actor perspective (Figure 1a). A second LMER of perspective on valence revealed a significant effect of perspective— $b = -.743$ ,  $SE = .122$ ,  $F(1, 46.946) = 18.590$ ,  $p < .0001$ , 95% CI  $[-.978, -.516]$ —such that memories in the recipient perspective were more negative than memories in the actor perspective (Figure 1b). A final LMER of perspective on emotional intensity revealed a significant effect of perspective— $b = 1.343$ ,  $SE = .161$ ,  $F(1, 43.813) = 63.310$ ,  $p < .0001$ , 95% CI  $[.995, 1.649]$ —such that memories in the recipient perspective were more emotionally intense than memories in the actor perspective (Figure 1c). Even after controlling for differences in how well each event was remembered and how well participants remembered how they felt during each event, perspective was still significantly related to

Table 1

Examples of Memories of Lying From Both Actor and Recipient Perspectives Provided by Participants

| Perspective | Recalled event                                                                                                                                                                                                                                                         |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor       | I told my (now ex) boyfriend that I had stopped talking to another guy that I had dated in the past. I had actually made a secret, private email account to message him. My boyfriend had a history of going through my phone, so I hid the messages.                  |
| Actor       | I told a guy I was dating that I turned down an acceptance to a prestigious university even though I had actually never applied in the first place.                                                                                                                    |
| Recipient   | I was told by my boss that I had been doing a very good job working on one of the experimental projects that I am on. When I talked to the other graduate students in the lab, I found out that she was actually complaining that I was not working fast enough on it. |
| Recipient   | A friend and I were texting about hanging out. She said she was free to come over on a Saturday morning to spend some time together. It turned out that she wasn't available when I followed up with her later in the week.                                            |



**Figure 1.** Frequency statistics for ratings of morality, valence, and emotional intensity split by actor and recipient perspectives. For memories of lying from Study 1a, frequencies by number of memories recalled across all participants (y-axis) are depicted for each possible rated value of morality (a), valence (b), and emotional intensity (c) measures. For memories of emotional harm from Study 1b, frequencies by number of memories (y-axis) are depicted for each possible rated value of morality (d), valence (e), and emotional intensity (f) measures.

moral wrongness ( $p < .0001$ ), valence ( $p < .0001$ ) and emotional intensity ( $p < .0001$ ). Table 2 depicts overall means for moral wrongness, valence, and emotional intensity ratings split by actor and recipient perspectives.

Supporting our first prediction, these results suggest that remembered actions that involve lying are perceived as more morally wrong, more negative, and more emotionally intense in the recipient perspective than in the actor perspective.

**Temporal distance and emotion.** Our second prediction was that more temporally distant remembered actions will be rated as more negative than temporally nearer remembered actions when the participant is the actor but not the recipient of the action. An initial LMER of time and perspective on memory valence revealed a significant interaction between time and perspective— $b = .099$ ,  $SE = .038$ ,  $F(1, 452.321) = 6.558$ ,  $p = .011$ , 95% CI [.029, .171]. Another LMER of time and perspective on emotional intensity

revealed no significant interaction between time and perspective— $b = -.038$ ,  $SE = .050$ ,  $F(1, 429.378) = .556$ ,  $p = .456$ , 95% CI [-.136, .059]. To better assess these relationships, separate follow-up LMERs for actor and recipient perspectives were computed.

**Actor.** A LMER of time on memory valence revealed a significant effect of time— $b = -.085$ ,  $SE = .025$ ,  $F(1, 30.515) = 10.199$ ,  $p = .003$ , 95% CI [-.135, -.033]—such that actions in more temporally distant memories in the actor perspective were more negative than temporally nearer memories. Even after controlling for differences in how well each event was remembered and how well participants remembered how they felt during each event, time was significantly related to valence ( $p = .005$ ).

**Recipient.** A LMER of time on memory valence revealed no significant effect of time— $b = -.003$ ,  $SE = .029$ ,  $F(1, 39.459) = .051$ ,  $p = .822$ , 95% CI [-.064, .056]—in the recipient perspective.

Supporting our second prediction, these results suggest that actions in more temporally distant memories that involve lying tend to be more negative than actions in nearer memories in the actor perspective but not in the recipient perspective.

**Temporal distance and morality.** Our third prediction was that more temporally distant remembered actions will be judged to be more morally wrong than temporally nearer remembered actions when the participant is the actor but not the recipient. An initial LMER of time and perspective on moral wrongness revealed a significant interaction between time and perspective— $b = .100$ ,  $SE = .041$ ,  $F(1, 429.532) = 5.888$ ,  $p = .016$ , 95% CI

Table 2

*Summary of Overall Means for Morality, Valence, and Emotional Intensity Ratings Split by Actor and Recipient Perspectives for Memories of Lying and Emotional Harm*

| Variable            | Memories of lying |           | Memories of emotional harm |           |
|---------------------|-------------------|-----------|----------------------------|-----------|
|                     | Actor             | Recipient | Actor                      | Recipient |
| Morality rating     | 3.721             | 2.940     | 3.161                      | 2.792     |
| Valence             | 3.500             | 2.775     | 3.000                      | 2.250     |
| Emotional intensity | 3.401             | 4.750     | 4.352                      | 5.227     |



[.022, .182]. Therefore, separate follow-up LMERs for actor and recipient perspectives were computed.

**Actor.** A LMER of time on moral wrongness revealed a significant effect of time— $b = -.110$ ,  $SE = .028$ ,  $F(1, 35.563) = 10.882$ ,  $p = .002$ , 95% CI  $[-.172, -.052]$ —such that actions in more temporally distant memories in the actor perspective were rated as more morally wrong than nearer ones. Even after controlling for differences in how well each event was remembered and how well participants remembered how they felt during each event, time was still significantly related to moral wrongness ( $p = .003$ ).

**Recipient.** A LMER of time on moral wrongness revealed no significant effect of time ( $b = -.020$ ,  $SE = .030$ ,  $F(1, 38.084) = 0.287$ ,  $p = .595$ , 95% CI  $[-.080, .040]$ ) in the recipient perspective.

Supporting our third prediction, these results suggest that actions in more temporally distant memories of lying tend to be rated as more morally wrong than actions in nearer memories in the actor perspective but not in the recipient perspective.

**Personal change and morality.** Our fourth prediction was that the more people believe they have changed since the event occurred, the more likely they are to judge their actions during that time in the past as more morally wrong in the actor perspective but not in the recipient perspective. Because ratings of personal change severely violated the assumption of normality, we binarized the personal change variable with a median split. An initial LMER of personal change (high change or low change) and perspective on moral wrongness ratings revealed a marginally significant interaction between personal change and perspective— $b = .561$ ,  $SE = .292$ ,  $F(1, 481.585) = 3.612$ ,  $p = .057$ , 95% CI  $[.017, 1.126]$ . Therefore, separate follow-up LMER models for actor and recipient perspectives were computed.

**Actor.** A LMER of personal change on moral wrongness revealed a significant effect of personal change— $b = -.855$ ,  $SE = .258$ ,  $F(1, 32.846) = 10.520$ ,  $p = .003$ , 95% CI  $[-1.331, -.339]$ —such that the more people believe they have changed since the event occurred, the more likely they are to judge their actions during that period of time as more morally wrong in the actor perspective. Even after controlling for differences in how well each event was remembered and how well participants remembered how they felt during each event, personal change was still significantly related to moral wrongness ( $p = .004$ ).

**Recipient.** A LMER of personal change on moral wrongness revealed no significant effect of time— $b = -.273$ ,  $SE = .260$ ,

$F(1, 33.190) = 1.083$ ,  $p = .306$ , 95% CI  $[-.786, .276]$ —in the recipient perspective.

Supporting our fourth prediction, the more people believe they have changed since the event occurred, the more likely they are to judge their actions during that time in the past as more morally wrong in the actor perspective but not in the recipient perspective.

## Study 1b

In Study 1b, participants recalled specific events from their personal pasts that involved emotional harm from actor and recipient perspectives.

### Method.

**Participants.** A total of 48 adults voluntarily participated in this study. Four participants were excluded due to failures in following instructions. Data were analyzed with the remaining 44 participants ( $M_{\text{age}} = 22.36$ ,  $SD = 3.29$ , age range = 18–30; 30 females), and each participant was tested individually. All participants were fluent English speakers. Written informed consent was obtained from each participant in accordance with protocol approved by the Duke University Campus Institutional Review Board.

**Procedure.** The procedures used in Study 1b are identical to those in Study 1a with one exception: each participant was cued to recall as many specific, autobiographical memories as possible of *emotional harm* from actor and recipient perspectives. Accordingly, while Study 1a investigated memories of lying, Study 1b investigates memories of emotional harm. Table 3 provides several examples of memories recalled by participants. We have reported all measures, conditions, and data exclusions.

**Statistical analyses.** All data were analyzed using the same software and methods as in Study 1a.

**Results and discussion.** On average, participants generated 5.36 memories ( $SD = 1.64$ ) in the actor perspective and 5.91 memories ( $SD = 1.41$ ) in the recipient perspective. Across all participants, a total of 236 memories were generated in the actor perspective, and a total of 260 memories were generated in the recipient perspective.

**Morality and emotion differ with perspective.** Our first prediction was that remembered events in the actor perspective will be rated as less morally wrong and less negative than those in the recipient perspective. A LMER of perspective (binary factor: actor, recipient) on moral wrongness showed that perspective did not reach significance— $b = -.377$ ,  $SE = .200$ ,  $F(1, 45.153) = 3.555$ ,

Table 3

*Examples of Memories of Emotional Harm from Both Actor and Recipient Perspectives Provided by Participants*

| Perspective | Recalled event                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor       | I did not go to my friend's wedding, even though I was free that day. He really wanted me to be there, but I lied to him and said that I had an unexpected family emergency.                                                                                                                                                                                                                              |
| Actor       | My sister and I forgot that it was Mother's Day, and we spent all day fighting and arguing with each other and our mom. My mom started crying and left the house.                                                                                                                                                                                                                                         |
| Recipient   | A person racially abused me by calling me "Apu" which is a racial slur used for Indians. She did that when I told her that I did not support her candidate for the presidency. She got extremely annoyed and said "Apu, you are moron. Go back to eating cow dung in India".                                                                                                                              |
| Recipient   | I had been taking care of my dad who had been going through chemo therapy for weeks. One day I told my brother that I wasn't going to visit my dad at the hospital that day. My brother got mad at me and screamed at me for changing the schedule. I was hurt because I had been taking care of dad alone for a week, and I just needed break. My brother didn't seem to understand how exhausted I was. |

$p = .066$ , 95% CI  $[-.766, -.005]$ . Actions in the recipient perspective were rated as somewhat more morally wrong than those in the actor perspective (Figure 1d). Another LMER of perspective on valence revealed a significant effect of valence— $b = -.737$ ,  $SE = .139$ ,  $F(1, 46.931) = 28.115$ ,  $p < .0001$ , 95% CI  $[-1.001, -.446]$ —such that remembered actions in the recipient perspective were more negative than those in the actor perspective (Figure 1e). A final LMER of perspective on emotional intensity revealed a significant effect of emotional intensity— $b = .852$ ,  $SE = .172$ ,  $F(1, 44.132) = 24.415$ ,  $p < .0001$ , 95% CI  $[.521, 1.170]$ —such that remembered actions in the recipient perspective were more emotionally intense than those in the actor perspective (Figure 1f). After controlling for differences in how well each event was remembered and how well participants remembered how they felt during each event, perspective was significantly related to moral wrongness ( $p = .047$ ), valence ( $p < .0001$ ), and emotional intensity ( $p = .0002$ ). Table 2 summarizes overall means for morality, valence, and emotional intensity ratings split by actor and recipient perspectives.

Supporting our first prediction, these results suggest that memories of emotional harm are perceived as more morally wrong (after controlling for quality of memory), more negative, and more emotionally intense in the recipient perspective than in the actor perspective.

**Temporal distance and emotion.** Our second prediction was that more temporally distant remembered actions will be rated as more negative than temporally nearer remembered actions in the actor perspective but not in the recipient perspective. An initial LMER of time and perspective on memory valence revealed no significant interaction between time and perspective— $b = .000$ ,  $SE = .036$ ,  $F(1, 474.154) = .000$ ,  $p = .994$ , 95% CI  $[-.079, .066]$ . Similarly, the LMER of time and perspective on emotional intensity revealed no significant interaction between time and perspective— $b = .021$ ,  $SE = .048$ ,  $F(1, 450.528) = .192$ ,  $p = .662$ , 95% CI  $[-.073, .114]$ . Unlike the results for memories of lying, there were no actor-recipient differences in the relationship between the temporal distance of the remembered actions and their affective qualities.

**Temporal distance and morality.** Our third prediction was that more temporally distant remembered actions will be judged to be more morally wrong than temporally nearer remembered actions when the participant is the actor but not the recipient. An initial LMER of time and perspective on moral wrongness revealed a significant interaction between time and perspective— $b = .097$ ,  $SE = .043$ ,  $F(1, 455.534) = 5.009$ ,  $p = .026$ , 95% CI  $[.010, .189]$ . Therefore, separate follow-up LMER models for actor and recipient perspectives were computed.

**Actor.** A LMER of time on moral wrongness revealed a significant effect of time— $b = -.158$ ,  $SE = .037$ ,  $F(1, 33.924) = 17.875$ ,  $p = .0002$ , 95% CI  $[-.227, -.093]$ —such that actions in more temporally distant memories in the actor perspective were rated as more morally wrong than those in nearer memories. Even after controlling for differences in how well each event was remembered and how well participants remembered how they felt during each event, time was still significantly related to moral wrongness ( $p = .0004$ ).

**Recipient.** A LMER of time on moral wrongness revealed no significant effect of time— $b = -.029$ ,  $SE = .029$ ,  $F(1, 27.221) =$

$.881$ ,  $p = .356$ , 95% CI  $[-.083, .028]$ —in the recipient perspective.

Supporting our third prediction, these results suggest that actions in more temporally distant memories of emotional harm tend to be rated as more morally wrong than actions in nearer memories in the actor perspective but not in the recipient perspective.

**Personal change and morality.** Our fourth prediction was that the more people believe they have changed since the event occurred, the more likely they are to judge their actions during that time in the past as more morally wrong in the actor perspective but not in the recipient perspective. Because ratings of personal change severely violated the assumption of normality, we binarized the personal change variable with a median split. An initial LMER of personal change (high change or low change) and perspective on moral wrongness ratings revealed a significant interaction between personal change and perspective— $b = .564$ ,  $SE = .264$ ,  $F(1, 459.931) = 4.523$ ,  $p = .034$ , 95% CI  $[.038, 1.086]$ . Therefore, separate follow-up LMER models for actor and recipient perspectives were computed.

**Actor.** A LMER of personal change on moral wrongness revealed a significant effect of personal change— $b = -1.025$ ,  $SE = .248$ ,  $F(1, 33.078) = 16.473$ ,  $p = .0003$ , 95% CI  $[-1.499, -.539]$ —such that the more people believe they have changed since the event occurred, the more likely they are to judge their actions as more morally wrong during that period of the past in the actor perspective. Even after controlling for differences in how well each event was remembered and how well participants remembered how they felt during each event, personal change was still significantly related to moral wrongness ( $p = .0005$ ).

**Recipient.** A LMER of personal change on moral wrongness revealed no significant effect of personal change— $b = -.066$ ,  $SE = .188$ ,  $F(1, 34.301) = .118$ ,  $p = .733$ , 95% CI  $[-.477, .268]$ —in the recipient perspective.

Supporting our fourth prediction, the more people believe they have changed since the event occurred, the more likely they are to judge their actions during that time in the past as more morally wrong in the actor perspective but not in the recipient perspective.

## Study 2

In Study 2, we sought to directly assess the effect of perceived differences in the self over time on ratings of morality, valence, and emotional intensity for memories of lying and emotional harm from both actor and recipient perspectives. Although temporal distance serves as a useful proxy for psychological or subjective distance, temporal self-appraisal theory specifically posits that it is the subjective distance between past experiences and the present that underlies the self-enhancement and self-protection functions of autobiographical memory (Ross & Wilson, 2002; Wilson & Ross, 2001, 2003). Accordingly, we cued participants to provide autobiographical memories (a) when they believed they were very different people than they are now (different-self condition) and (b) when they believed they were very similar to or the same as who they are now (similar-self condition). In addition, despite being cued to generate memories of lying and emotional harm in Study 1, participants still rated some actions in these memories as morally right and others as morally neutral. In Study 2, we sought to investigate only memories for morally wrong actions. Hence,

we cued participants to provide autobiographical memories of specifically immoral actions from their personal pasts.

We make two specific predictions in Study 2 that extend research on temporal self-appraisal theory (Wilson & Ross, 2003), expand upon work from Escobedo and Adolphs (2010), and add to a growing literature on the central role of morality in the construction and perception of the self (Strohinger et al., in press). First, we predict that memories of lying and emotional harm from the actor perspective in the different-self condition will be judged as more negative than actor perspective memories in the similar-self condition. Second, we predict that memories of lying and emotional harm from the actor perspective in the different-self condition will be judged as more morally wrong than actor perspective memories in the similar-self condition.

## Method

**Participants.** A total of 105 adults voluntarily participated in this study via AMT for monetary compensation. Participant recruitment was restricted to individuals in the United States with a prior approval rating above 85%. The sample size in Study 2 was chosen in order to obtain a similar number of participants and memories to those acquired by Escobedo and Adolphs (2010). Two participants were excluded because they were unable to recall memories. Three participants were excluded due to failures following instructions. Data were analyzed with the remaining 100 participants ( $M_{\text{age}} = 32.96$ ,  $SD = 8.45$ , age range = 19–65; 38 females). All participants reported being fluent English speakers. Informed consent was obtained from each participant in accordance with protocol approved by the Duke University Campus Institutional Review Board.

**Procedure.** Participants were asked to recall a total of eight events from their personal pasts and to provide several ratings for each recalled event. They were instructed to provide only memories of actions they believed to be morally wrong. Participants were instructed to provide exactly one memory from each of eight cues: (a) during a period of time in which you felt you were a very different person than the person you are now, recall a specific memory of an event in which you lied to someone else; (b) during a period of time in which you felt you were a very different person than the person you are now, recall a specific memory of an event in which you found out that someone else lied to you; (c) during a period of time in which you felt you were a very different person than the person you are now, recall a specific memory of an event in which you emotionally harmed someone else; (d) during a period of time in which you felt you were a very different person than the person you are now, recall a specific memory of an event in which you were emotionally harmed by someone else; (e) during a period of time in which you felt you were very similar to or the same as the person you are now, recall a specific memory of an event in which you lied to someone else; (f) during a period of time in which you felt you were very similar to or the same as the person you are now, recall a specific memory of an event in which you found out that someone else lied to you; (g) during a period of time in which you felt you were very similar to or the same as the person you are now, recall a specific memory of an event in which you emotionally harmed someone else; and (h) during a period of time in which

you felt you were very similar to or the same as the person you are now, recall a specific memory of an event in which you were emotionally harmed by someone else. The order of the eight cues was presented randomly. Participants were told that all memories must be of events that have occurred when they were older than 10 years of age, must be of one particular episode specific in time and place, and must have been personally experienced.

For each memory, participants described the event in 2–6 sentences and listed the time when the event occurred (month and year). Then, participants provided the following ratings for the actions in each memory in this order: How confident are you that the event occurred when you believe it did? (1 = *not at all confident*, 7 = *very confident*); How morally wrong was the action performed? (1 = *slightly morally wrong*, 7 = *very morally wrong*); What were your emotions associated with the event? (1 = *very negative*, 7 = *very positive*); What was the intensity of the emotion you felt during the event? (1 = *not at all intense*, 7 = *very intense*); and To what extent do you believe you are the same person now compared to the person you were around the time that the remembered event occurred? (1 = *very similar*, 7 = *very different*). We have reported all measures, conditions, and data exclusions. Upon completion of the study, participants were monetarily compensated for their time.

## Results and Discussion

Participant's responses for each dependent variable were not normally distributed. Accordingly, we implemented nonparametric statistical tests for related samples. Sign tests for paired observations were used to assess significance and the direction of effects. To assess effect sizes, we used  $PS_{\text{dep}}$  (Grissom & Kim, 2012), which is the probability that in a randomly sampled pair of scores, the score from one condition (the condition which most frequently has the higher score) will be greater than the score from the other condition (the condition which most frequently has the lower score). Ties were discarded to obtain  $PS_{\text{dep}}$  values. Possible effect sizes ranged from 0.50 to 1.00 with higher values indicating larger effects.

Verifying that participants followed instructions, across all conditions ratings of personal identity change (on the 7-point scale) when instructed to generate memories in the different-self condition were much higher than when instructed to generate memories in the similar-self condition (sign tests: all  $ps < .001$ ). In addition, memories of lying and emotional harm cued in the different-self condition typically occurred in the more temporally distant past than those cued in the similar-self condition (sign tests: all  $ps < .001$ ), and participants were very confident in their assessments of when the events occurred (range of median confidence ratings across all conditions: 6–7).

### Memories of lying.

**Actor.** For memories of lying in the actor perspective, we found a significant difference in moral wrongness ( $Z = 3.604$ ,  $p < .001$ ,  $PS_{\text{dep}} = 0.72$ ) and valence ( $Z = 2.988$ ,  $p = .003$ ,  $PS_{\text{dep}} = 0.69$ ) but not emotional intensity ( $Z = 1.354$ ,  $p = .176$ ,  $PS_{\text{dep}} = 0.59$ ) as a function of perceived similarity to the current sense of self. For memories of events in the different-self condition, participants judged their remembered actions as more morally wrong

and more negative as compared with memories of events in the similar-self condition.

**Recipient.** For memories of lying in the recipient perspective, we found no significant differences in moral wrongness ( $Z = 1.488, p = .137, PS_{dep} = 0.60$ ), valence ( $Z = 1.793, p = .073, PS_{dep} = 0.62$ ), or emotional intensity ( $Z = 1.424, p = .154, PS_{dep} = 0.59$ ) as a function of perceived similarity to the current sense of self.

Supporting our predictions, these results indicate that participants are more likely to rate their own acts of lying as more morally wrong when they felt that they were very different than—as opposed to very similar to—who they are now. Notably, the effect sizes for morality ratings are larger than those for valence; this may suggest that moral judgments of past actions better facilitate the perception of improvement in oneself over time. Figure 2a summarizes the results involving lying from the Sign Tests. Figure 3 depicts frequency statistics for each measure split by condition (different-self vs. similar-self) and perspective.

#### Memories of emotional harm.

**Actor.** For memories of emotional harm in the actor perspective, we found a significant difference in moral wrongness ( $Z = 4.002, p < .001, PS_{dep} = 0.75$ ) and valence ( $Z = 2.757, p = .006, PS_{dep} = 0.69$ ) but not emotional intensity ( $Z = .125, p = .901, PS_{dep} = 0.52$ ) as a function of perceived similarity to the current

sense of self. For memories in the different-self condition, participants perceived those actions as more morally wrong and more negative compared with memories in the similar-self condition.

**Recipient.** For memories of emotional harm in the recipient perspective, we found no significant differences in moral wrongness ( $Z = .889, p = .374, PS_{dep} = 0.56$ ), valence ( $Z = 1.143, p = .253, PS_{dep} = 0.59$ ), or emotional intensity ( $Z = .265, p = .791, PS_{dep} = 0.53$ ) as a function of perceived similarity to the current sense of self.

Supporting our predictions, these results indicate that participants are more likely to rate their own acts of emotional harming as more morally wrong when they felt that they were very different than—as opposed to very similar to—who they are now. As was the case for immoral lies, the effect sizes for morality ratings are larger than those for valence; this may suggest that moral judgments of past actions better facilitate the perception of improvement in oneself over time. Figure 2b summarizes the results involving emotional harm from the Sign Tests. Figure 4 depicts frequency statistics for each measure split by condition and perspective.

### General Discussion

We report three studies investigating whether there are actor-recipient differences in the emotional qualities and perceived moral wrongness of remembered actions from one's personal past and whether the perceived emotional and moral content of these remembered actions differs as a function of temporal distance and perceived changes in the self over time. These studies yielded four main findings. First, remembered actions in the actor perspective were rated as less morally wrong and less negative than remembered actions in the recipient perspective. These findings held for memories of lying and of emotional harm. Second, remembered actions rated as more negative were more temporally distant in the actor perspective than in the recipient perspective—but only for memories of lying. Third, the more temporally distant remembered actions were, the more likely they were to be rated as more morally wrong in the actor perspective but not in the recipient perspective. These findings held both for memories of lying and emotional harm. Fourth, during periods of time when participants felt they were very different than—as opposed to very similar to—who they are now, they judged their own acts of lying and emotional harm as more morally wrong and more negative.

Consistent with research showing that people evaluate themselves in more positive terms than they evaluate others (Alicke & Sedikides, 2009; Taylor & Brown, 1988, 1994), our results suggest that for autobiographical memories of lying and emotional harm, people recall events that are rated as being less morally wrong, less negative, and less emotionally intense when they, as opposed to someone else, commit the act. Autobiographical memory research has consistently shown that recollections of past events are easily and often distorted (Schacter, Guerin, & St. Jacques, 2011; Schacter & Slotnick, 2004). Moreover, memories of immoral events are often emotionally salient (Escobedo & Adolphs, 2010), and emotional memories tend to be recollected vividly and readily but often inaccurately (Christianson & Loftus, 1991; Heuer & Reisberg, 1990). Given the frequent facilitation of self-enhancement and self-protection through viewing one's actions as more favorable than others' and the frequent distortion of emo-

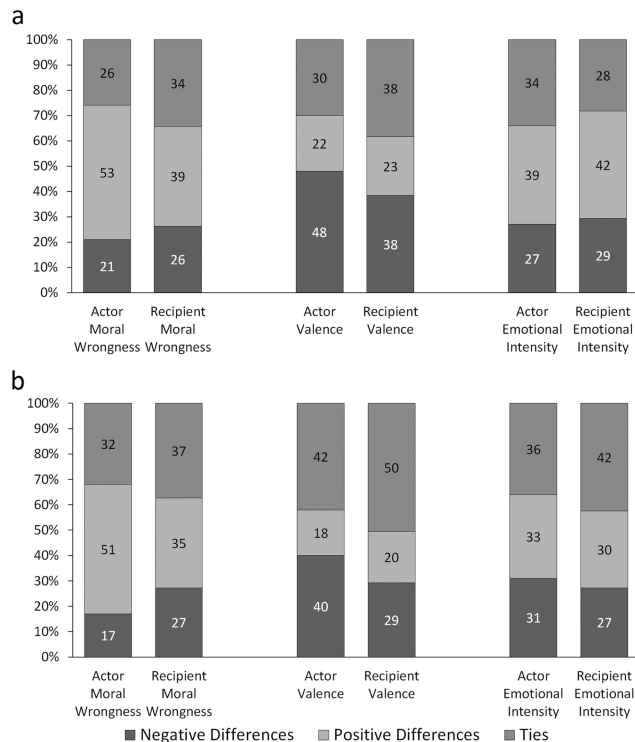
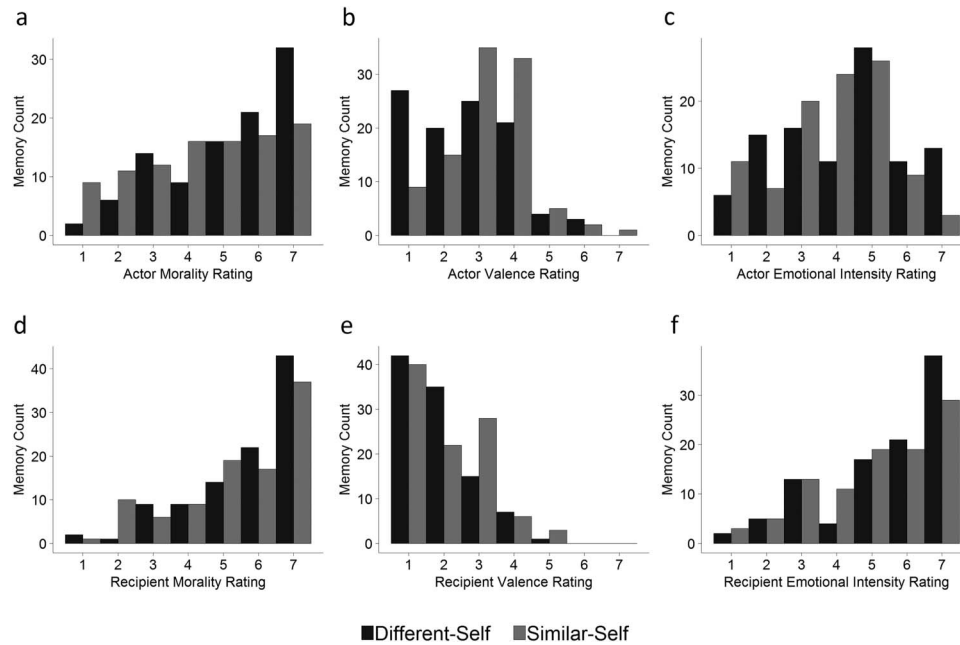


Figure 2. Frequency statistics for morality, valence, and emotional intensity ratings for memories of lying (a) and emotional harm (b) in both actor and recipient perspectives. The percentage of negative differences (i.e., different-self condition minus similar-self condition), positive differences (i.e., similar-self condition minus different-self), and ties (i.e., no difference in ratings between different-self and similar-self conditions) are depicted.





**Figure 3.** For memories of lying, we display frequency statistics for ratings of morality, valence, and emotional intensity split by actor and recipient perspectives and by different-self and similar-self conditions. For memories in the actor perspective, frequencies by number of memories recalled (y-axis) are depicted for each possible rated value of morality (a), valence (b), and emotional intensity (c) measures. For memories in the recipient perspective, frequencies by number of memories recalled (y-axis) are depicted for each possible rated value of morality (d), valence (e), and emotional intensity (f) measures.

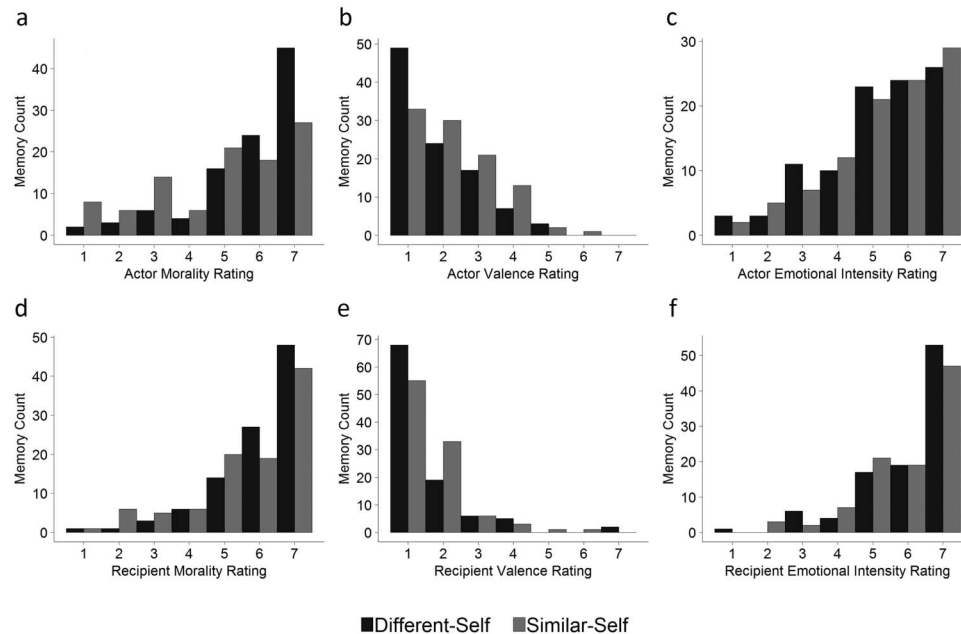
tional memories, our results can be interpreted in two nonexclusive ways: (a) people are motivated to recall specific events that reduce or mitigate a negative self-image or enhance a positive one, or (b) people reconstruct or reinterpret existing memories to reduce or mitigate a negative self-image or enhance a positive one. Further work needs to determine the circumstances under which either of these two possibilities hold.

Consistent with Escobedo and Adolphs (2010) regarding the relationship between the affective qualities of memories and their temporal distance, we also found that actor perspective memories of lying that were more negative tended to be more temporally distant than less negative memories (Study 1a). Moreover, assessing subjective, psychological distance between current and past selves, we found that memories of lying in the different-self condition were rated as more negative than memories of lying in the similar-self condition (Study 2). Our results for memories of emotional harm are more nuanced. When participants were cued to provide memories of emotional harm, we found no relationship between valence and temporal distance in the actor perspective (Study 1b). However, when we indexed subjective, psychological distance and specifically cued participants to provide memories involving immoral emotional harm, these memories in the different-self condition were rated as more negative than those in the similar-self condition (Study 2). These differences between our studies are easily explained. When participants were not specifically cued only to provide memories of immoral actions, they sometimes recalled memories of lying and emotional harm that they rated as being morally neutral (see Figure 1). In Study 1b, temporal distance was used as a proxy for subjective, psycholog-

ical distance. The inclusion of these morally neutral memories and the use of temporal distance as a proxy for subjective, psychological distance increases noise, which, in turn, decreases the likelihood of uncovering the predicted effects. In Study 2, we removed this unwanted noise by assessing subjective, psychological distance and by specifically asking participants to recall memories of immoral actions, and we found a significant difference in both valence and moral wrongness between the different-self condition and the similar-self condition.

Like Escobedo and Adolphs (2010), our results are also largely consistent with and expand upon work on temporal self-appraisal theory, which maintains that people view themselves as improving over time in order to enhance or protect the current self (Wilson & Ross, 2003). Work supporting this theory shows that people evaluate their current self more favorably than earlier selves and perceive themselves as having improved over time (Wilson & Ross, 2001, 2003). Our results show that more temporally distant memories were rated as more morally wrong than nearer memories. Similarly, assessing subjective, psychological distance from the current self, we found that remembered actions of lying and emotional harm in the subjectively distant past were rated as more morally wrong than memories in the subjectively nearer past.

One might be tempted to argue that more morally wrong acts are more negative and emotionally intense, and they are encoded more deeply in memory, so they tend to be remembered longer and recollected more easily. Accordingly, one might suggest that our results are simply the product of the differential rate that memories fade over time as a function of their emotional valence and intensity. If this were the case, however, then we would expect that



**Figure 4.** For memories of emotional harm, we display frequency statistics for ratings of morality, valence, and emotional intensity split by actor and recipient perspectives and by different-self and similar-self conditions. For memories in the actor perspective, frequencies by number of memories recalled (y-axis) are depicted for each possible rated value of morality (a), valence (b), and emotional intensity (c) measures. For memories in the recipient perspective, frequencies by number of memories recalled (y-axis) are depicted for each possible rated value of morality (d), valence (e), and emotional intensity (f) measures.

more negative, emotionally intense, and morally wrong memories would be more temporally and subjectively distant from both actor and recipient perspectives. Our data show that there is no relationship between temporal or subjective distance and valence, emotional intensity, or moral wrongness in the recipient perspective. Furthermore, research on the fading affect bias suggests that affect associated with negative memories fades more quickly than affect associated with other kinds of memories (Skowronski, Walker, Henderson, & Bond, 2014). Therefore, it is unlikely that our findings are the product of a more general phenomenon that memories with different emotional qualities are forgotten at different rates over time.

Autobiographical memory and morality are essential in the construction and perception of one's identity over time. Many researchers have found that some parts of the self are more authentic, genuine, or central than others (Strohming et al., in press). Interestingly, when different characteristics and qualities are compared with each other (e.g., perception, memories, preferences, personality), people typically report the greatest identity discontinuity when moral characteristics have been altered or removed (Heiphetz, Strohming, & Young, 2016; Strohming & Nichols, 2014, 2015), suggesting that moral traits are perhaps the most prominent and central part of a person's identity (Chen, Urmitsky, & Bartels, 2016). Our results provide a novel contribution to this burgeoning literature on the role of morality in constructing and perceiving the self by showing that participants judge their moral transgressions during periods of time when they felt very different than—as opposed to very similar to—their current selves as more morally wrong. Doing so likely facilitates a

greater sense of self-improvement over time and the ability to view oneself as moral and good in the present.

## Conclusion

Although what purportedly comprises the self includes core beliefs and events from the personal past, few researchers have investigated recollections of moral transgressions from the personal past or how those recollections interact with their conceptions of the self. In part due to the inherent difficulty in systematically investigating autobiographical memories (St. Jacques & De Brigard, 2015), the majority of moral psychology research has employed designs that present moral content in the form of artificial vignettes created in the laboratory (e.g., Chituc, Henne, Sinnott-Armstrong, & De Brigard, 2016; Clifford, Iyengar, Cabeza, & Sinnott-Armstrong, 2015). Comparatively few studies have investigated prototypical, everyday instances of immorality that have been personally experienced (however, see Escobedo & Adolphs, 2010; FeldmanHall et al., 2012; Hofmann et al., 2014; Knutson et al., 2010). This imbalance is surprising given our prioritization of moral traits and values when judging the overall favorability of others (Goodwin, Piazza, & Rozin, 2014) and the fact that we define personal identity largely in terms of moral characteristics (Strohming & Nichols, 2014). We provide novel contributions by investigating how memories of lying and emotional harm are associated with the maintenance of a positive identity. Moreover, we hope that the studies reported in the current article encourage researchers to continue exploring different ways of integrating

research on autobiographical memory, moral cognition, and personal identity.

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