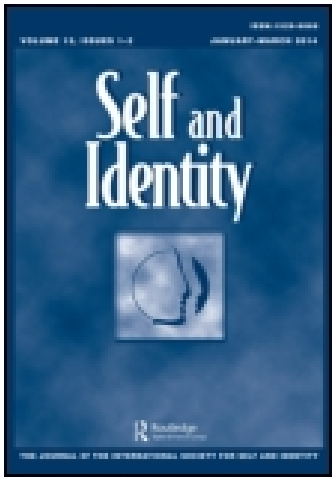

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Affective Responses to Self-Defining Autobiographical Events

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Affective Responses to Self-Defining Autobiographical Events

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Five studies examined the role of the self in affective responses to memories of a person's own life events. Participants (total $N = 237$) included university students or community members from three countries (Ireland, UK, and USA). Participants described and then rated multiple autobiographical events ($n > 2600$) via diary keeping and retrospective recall. Positive events retained affective intensity across the time lag from event occurrence to event recall, whereas negative events did not. Across all studies, the relationship between event valence and affect associated with events at recall occurred through the extent to which participants perceived their past events as self-defining. In Study 4, this indirect effect strengthened across five sessions that spanned 1 month. In Study 5, this indirect effect did not depend on self-concept clarity, but it did so in an alternative model. The findings illustrate the vital role the self plays in affective responses to personal event memories, and implicate self-enhancement/self-protection motives in the production of such responses. The self may facilitate a process of negative affect down-regulation for negative events, which is self-protective, and may facilitate a process of positive affect up-regulation for positive events, which is self-enhancing.

Keywords: Autobiographical memory; Fading affect bias; Self-protective memory; Emotion regulation; Self-regulation.

Autobiographical reminiscing can be an emotional experience. Memories of some events may cause an individual to experience negative affect via sadness or anger, while memories for other events may lead to positive affect via elation or pride. Given the claim that "bad is stronger than good" (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001), one might expect that affect would be particularly strong when individuals recall negative life events. However, in their review, Baumeister et al. suggested that memory might not strongly adhere to the "bad is stronger than good" rule, so that negativity may not dominate memory for things past. Indeed, an accumulating mass of evidence suggests that, with respect to memory, good can be stronger than bad. For example, the intensity of positive affect prompted by recall of positive personal life events generally exceeds the intensity of negative affect prompted by recall of negative personal life events

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(Cason, 1932; Holmes, 1970), a phenomenon that is termed the fading affect bias (FAB; Walker, Vogl, & Thompson, 1997). This bias is related to time: Negative affect fades faster from event occurrence to event recall than positive affect does (Gibbons, Lee, & Walker, 2011; Ritchie & Batteson, 2013; Skowronski, 2011).

Mundane theoretical mechanisms and methodological artifacts cannot explain the FAB. For example, a person's dispositional mood moderates the FAB but cannot fully account for it (Ritchie, Skowronski, Hartnett, Wells, & Walker, 2009, Study 3). Similarly, individuals can predict how their own affect will change across time, but such predictions cannot account for the FAB (Ritchie et al., 2009, Study 4). Furthermore, confounds between event valence and affect activation level cannot explain the FAB, which occurs regardless of whether recall-prompted affect is classified as arousing or weak (Ritchie et al., 2009, Study 2). Similarly, the FAB cannot be explained by confounds between event valence and extremity of the initial emotions prompted by events, or by better recall of positive events than negative events (Ritchie & Skowronski, 2008; Ritchie et al., 2006; Skowronski, Gibbons, Vogl, & Walker, 2004; Walker, Skowronski, & Thompson, 2003; Walker, Skowronski, Gibbons, Vogl, & Thompson, 2003; Walker, Skowronski, Gibbons, Vogl, & Ritchie, 2009).

Perceived Event Affect in the Context of the Self

If such mechanisms do not explain the FAB, then what does? The emergence of the FAB in the emotions that accompany event recall fits with perspectives suggesting that an individual's motivations, emotions, and cognitive processes interact across time to retain self-relevant positive affect and to minimize self-relevant negative affect (Alicke & Sedikides, 2011a; Sedikides & Strube, 1997; Taylor, 1991). We argue that autobiographical memories play a prominent role in such a system. Individuals self-regulate by attempting to manipulate and control their affective states (Charles & Carstensen, 2007; Martin, Abend, Sedikides, & Green, 1997; Silvia & Eddington, 2012; Wranik, Barrett, & Salovey, 2007). Given the powerful mood-altering properties of autobiographical memories (Bryant & Veroff, 2007; Gebauer, Broemer, Haddock, & von Hecker, 2008; Josephson, Singer, & Salovey, 1996; Kensinger & Leclerc, 2009; Kross, Davidson, Weber, & Ochsner, 2009; Philippe, Lecours, & Beaulieu-Pelletier, 2009; Raes, Hermans, Williams, & Eelen, 2006; Wildschut, Sedikides, Arndt, & Routledge, 2006), selective reminiscence is one tool that individuals can use for effective emotion regulation. The self-concept may play a central role in this process (Alicke & Sedikides, 2009; Sedikides & Green, 2000, 2009; Sedikides & Gregg, 2008): Individuals can summon memories of personal events and associated feelings to regulate the self and its hedonic tone (Singer & Salovey, 1993).

Theories that link autobiographical memory to the self reinforce this idea. According to the Self-Memory System view (Conway, 2005; Conway & Pleydell-Pearce, 2000), individuals possess a current working self and an autobiographical knowledge base (i.e., stored personal experiences). At times, these two systems interact. For example, knowledge culled from autobiographical memory helps to preserve a sense of self-continuity over time. This can happen when the working self searches the personal memory base for relevant past experiences that help to ascribe meaning to the present (Conway, Singer, & Tagini, 2004; see also Bluck, Alea, Habermas, & Rubin, 2005). Such attempts at self-continuity help a person to minimize perceived discrepancies between past selves and present selves, alleviating or preventing discomfort (Chandler, Lalonde, Sokol, & Hallett, 2003; Sedikides, Wildschut, Gaertner, Routledge, & Arndt, 2008). This is one way in which perceived self-continuity may impact on emotion regulation (Pasupathi, 2003). Moreover, given that the working self influences both what is accessed from

long-term memory and how such information is *related to current self-appraisals*, the working self is likely crucial to the responses that one has to recalled autobiographical memories.

However, whereas both theory and data suggest a link between affect experienced at event recall and the self, few studies have examined such relations systematically. An exception is Ritchie et al. (2006), who directly examined the relationship between the self-relevant characteristics of events and event memory-prompted affect. Perceived event self-importance moderated the FAB: The FAB was smaller for events that participants viewed more important to the self than for events that participants viewed as unimportant to the self. This pattern was largely due to heightened negative affect prompted by recall of important negative autobiographical events. The relevance of the self to personal event affect was also suggested by the finding that the FAB was especially small when autobiographical events were either psychologically open (i.e., pertinent to the working self; Beike & Wirth-Beaumont, 2005) or perceived to be caused by the individual.

The Primary Theoretical Goals of Our Research

In the studies that are reported in this article, we seek to add critical support to the idea that the importance of an event to the working self is linked to the affect prompted by event recall. However, we attempt to take the link between the FAB and event self-importance in a new direction, probing the nature of the importance–FAB link. A key question that we try to address is whether it is the perceived self-importance of events that influences affect prompted at event recall, or whether it is the affect intensity prompted at event recall that influences the perceived importance of events to the working self. Our attempt to answer this question requires that we use mediational analysis techniques to explore these alternative causal pathways. We do so in all five of the reported studies.

Models of Perceived Affect in Relation to Self-Defining Events

We tested two plausible models that each explains the conceptual and statistical linkage between autobiographical event valence, the self-defining importance of such events, and the affect intensity that such events prompt at event's recall.

Model 1: Event Valence Predicts Affect Intensity through Event Self-Importance

One way to approach the links among these three variables (event valence, an event's self-defining importance, and affect intensity at an event's recall) is to consider that the relationship between event valence and affect intensity at event's recall is mediated by perceived event self-importance. This notion follows from the Self-Memory System model (Conway, 2005; Conway & Pleydell-Pearce, 2000), which suggests that cognitive and motivational mechanisms underlying the regulation of personal event affect play a role in how autobiographical memories influence current self-appraisals (Alicke & Sedikides, 2011b; Sedikides & Alicke, 2012; Sedikides, Wildschut, Arndt, & Routledge, 2008). These suggestions imply that recalled events are accompanied by event self-appraisals, which in turn influence the intensity of affect experienced at event recall.

From this perspective, the affect prompted by autobiographical events changes over time, in part, because a person has both time and new experiences that may induce event reconstruction and reappraisal. Thus, relationships between autobiographical affect and the self can be viewed as part of the regulatory process of cognitive change (Ochsner & Gross, 2004). Cognitive change "allows a person to modify the meaning of particular cues

once those cues have gained access to the appraisal process" (2004, p. 231). Furthermore, a recalled personal event may sometimes act as a cue for the working self. In addition, some recalled events are of more value and are more important to the working self than others (Wood & Conway, 2006). We hypothesize that self-appraisals can play a key role in the perceived current self-importance of these recalled events.

What is the exact role of the self in the appraisal process? When a person thinks of a negative autobiographical event, the person can reappraise the negativity associated with the event (e.g., a cue) in light of their current goals (e.g., relative meaning). If a person appraises past-related negativity as meaningless to current self-goals, the affect appraised at recall will likely be minimal—it will be perceived by the person to have faded. If, however, a person appraises negativity as meaningful to the working self, the affect felt at recall will likely be perceived as persistent (not faded). Thus, a person's current goals may help to regulate the impact of past-related affect on the affect felt in the present. Moreover, a reappraisal process may foster the recalibration of past-related affect in the service of the self (Bluck et al., 2005).

Such cognitive change also applies to how a person responds to affect associated with positive autobiographical events. If a person appraises past-related positivity as relevant to their current goals, the memory may continue to prompt positive affect, and the person will likely perceive such affect not to have faded from event occurrence. In this fashion, the appraisal process can support the maintenance of positive memory-prompted emotions.

This view that event valence predicts affect intensity through event self-importance also fits with the valenced core affect model (Barrett, 2006a, 2006b). This model suggests that the valuation of personal life events as positive or negative provides a foundation for the experience of emotions across many contexts, including autobiographical memory. Thus, the valenced core affect model implies that the FAB may reflect a person's attempt to find meaning in one's present life via affect appraisals, including the categorization of feelings as positive or negative. The valenced core affect model certainly does not suggest that all events will be categorized as positive or as negative; however, many of them can be. Moreover, whereas events that provoke relatively little affect in the present may add some meaning to a person's life, the valenced core affect model implies that it is more likely that a person would ascribe meaning to events that provoke above-average affect in the present, regardless of the discrete emotion in question.

Model 2: Event Valence Predicts Event Self-Importance Through Affect Intensity

An alternative model is based on self-protective memory (Pinter, Green, Sedikides, & Gregg, 2011; Sedikides & Green, 2009; Sedikides & Gregg, 2003). According to this model, changes in perceived event affect intensity could influence perceptions of an event's importance to a person's current goals. Hence, affect intensity will mediate the relationship between event valence and perceived event self-importance.

The rationale for this model is as follows. Research suggests that bad is often stronger than good, especially in immediate experience (Baumeister et al., 2001). However, in long-term memory, the reverse is often true (Green, Sedikides, & Gregg, 2008; Sedikides & Green, 2000; Walker et al., 1997): Negative affect fades rapidly, and positive affect fades slowly. Individuals may use emotion as a cue for how much value to place on the event. Thus, for a recalled negative event, faded affect may prompt devaluation of the event's self-importance. In comparison, the strong positive affect that accompanies a recalled positive event might prompt judgments that such events are self-important. Thus, positive events will provoke more perceived importance to the self across time

than negative events do, because, in part, the former elicit more affect at recall across time than the latter.

Methodological Considerations

Data Analytic Considerations

Observational Data and Mediation Testing

We used mediational analysis techniques to explore the alternative causal pathways that we have proposed. Spencer, Zanna, and Fong (2005) urge caution when testing mediational models that use observational data such as those we collected. However, even Spencer et al. suggested that sometime one has little alternative. For example, they note that sometimes constructs are relatively easy to measure, but are difficult to manipulate experimentally. In such cases, researchers may have no option except to collect observational data and use it in their modeling efforts. Nonetheless, we wholeheartedly agree with Spencer et al.'s (2005) request for caution. Our evaluations of our results reflect such caution. For example, in those cases in which an analysis indicates that a mediator is statistically significant, we do not conclude that the variable is "a mediator" but instead state that the variable is a "plausible mediator." Why? Because we concur with Spencer et al. (2005) when they argue that conclusively establishing the proper temporal sequencing of variables in a causal model requires manipulation of the variables of interest, and in our studies the variables of interest are only measured.

On the Exact Tests Used to Assess Mediation

A second issue in mediation testing concerns the exact mediation tests to be used. Baron and Kenny (1986) described one of the most frequently cited and used approaches to testing for evidence of an indirect effect (i.e., mediation). Here, an analyst must demonstrate that an independent variable (x) predicts an outcome (y), that x predicts the hypothesized intervening variable (m), and that m predicts y, controlling for x. The direct effect (x to y) is path c. When m is entered into the model, c is hypothesized to decrease, denoted as c'. Full mediation occurs when c' is zero and statistically null, partial mediation when c' is smaller than c but remains statistically significant. Researchers attempt to demonstrate that an effect of x on y occurred through m; however, such an indirect effect must be inferred from $c-c'$.

This "causal step" approach, however, may be somewhat problematic, as it is limited by the precondition that each path must achieve statistical significance prior to testing the indirect effect (Hayes, 2009). An alternative approach involves quantifying the indirect effect by multiplying the effect of x on m (path a) by the effect of m on y (path b), thus, calculating $a \times b$ (Hayes, 2013, 2009; Preacher & Hayes, 2004). One advantage of this approach is that it allows assessment of evidence of a process, even if the direct effect (path c) may not have been statistically significant initially.

This alternative approach also redresses a limitation of the Sobel test, often used as a part of the causal steps approach. The Sobel test assumes that an indirect effect's ($a \times b$) sampling distribution is normal; however, it frequently is not (Hayes, 2009). The bootstrapping (i.e., resampling) techniques used in the Preacher and Hayes (2004) approach do not assume that $a \times b$ is normal. In the Preacher and Hayes approach, one establishes a confidence interval (CI) for the indirect effect. This acts as a significance test. When the established estimate range does not contain 0, the indirect effect is considered statistically significant. For example, if an indirect effect for a model is estimated to be .11, and the 95% CI range is bounded by .01 on the low end and .21 on the high end, the

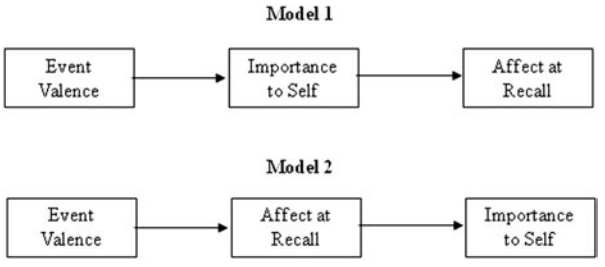

FIGURE 1 Primary model of the relationship between event valence and perceived affect at recall through self-defining event importance (Model 1, upper panel), and alternative model of the relationship between event valence and self-defining event importance through perceived affect at recall (Model 2, lower panel) in all studies.

indirect effect would be statistically significant. However, if the lower bound is −.01 and the upper bound is .21, the same .11 indirect effect would not be statistically significant.

In Studies 1–3, we specified and tested two mediation models via the Process macro for IBM SPSS, model #4 (Hayes, 2013). In all the models we tested across our five studies, we estimated the indirect effect produced by the data obtained from 1000 re-samples and we evaluated it using a 95% CI. In each study, we examined two process models: The primary Model 1 and the alternative Model 2 (Figure 1). For each model, we reported (1) the corresponding unstandardized indirect effect estimates, (2) the standard error for each indirect effect, (3) the lower and upper bound estimates that establish a 95% CI around the estimate of each indirect effect (the significance test), and (4) each model's R^2.

Later in this article, we will return to the details of each of the five studies that we report. For now, we restate that, across all of our studies, our analyses use the Preacher and Hayes (2004) and Hayes (2013) approach to explore whether the extent to which a given model evidences psychological processes.

Covariates and Control Variables

In all five studies, each participant recalled, described, and rated more than one event, producing a clustered data structure (i.e., events nested within persons). Thus, in all of our analyses we included a nominal-level person variable. The reported effects control for individual differences.

In addition, in a deviation from typical FAB research that examines affect change (i.e., the difference between affect at event occurrence and affect at event recall), we mostly focused on the affect experienced at event recall. This is sensible, given that past findings indicate that the most theoretically relevant statistical action in difference scores almost always originate in ratings prompted by event recall, not in ratings prompted by event occurrence (Skowronski, Walker, Henderson, & Bond, in press). Yet, we were also concerned with affect at event recall in the context of affect at event occurrence. Hence, in many analyses (Studies 1–3 and 5), we included affect at event occurrence as a control variable. Finally, event age is related to affect at event recall (Skowronski et al., in press). Where we assessed event age (Studies 3 and 5), we included it as a control variable.

The Importance of the Multi-Method Approach

One methodological challenge in studying autobiographical memory is that memories cannot be randomly assigned to participants (Thompson, Skowronski, Larsen, & Betz, 1996). Instead, memories must be elicited from participants. Hence, there is always a

possibility that methodology-induced collection biases might influence the memories that are used in a given study; such biases might influence a study's results. For example, when engaging in a retrospective recall procedure, participants may try to "hide" embarrassing, threatening, or painful negative events. In comparison, they may have no qualms about reporting positive events that produced joy or elation. The FAB, then, may emerge in studies that rely on retrospective recall, because individuals do not retrieve or report suitably equivalent positive events and negative events.

The challenges of potential event collection biases can only be addressed by using multiple methods. To the extent that results converge across studies that use multiple methods, confidence in the relations under investigation is increased. Indeed, an emphasis on multiple memory-collection methods has characterized much of the FAB research (Skowronski et al., in press). We applied this multi-method approach to the current studies. In Study 1, participants kept a diary for 2 weeks, provided ratings on the same day the events had occurred, and gave ratings again 2 weeks later. In Study 2, participants reported and rated events that had occurred from within the past 48 h, and re-rated each event 2 weeks later. In Studies 3 and 5, participants reported autobiographical events in a free-recall retrospective memory paradigm that did not constrain the ages of the events recalled. In Study 4, participants reported events that had occurred within 24 h of the time of initial assessment, and they re-rated their events on four subsequent occasions. In Studies 3 and 5, perceived affect at an event's occurrence, perceived affect at an event's recall, and importance of an event to the participant's sense of self were each rated in a single session.

The need for convergence is reflected in other methodological variations that occurred across studies. In Studies 1, 3, and 4, event valence was manipulated within subjects (standard in FAB research), whereas, in Studies 2 and 5, event valence was manipulated between subjects (Landau & Gunter, 2009).

This concern for convergence across methods also applies to the measurement of the affect prompted by events. Researchers have reported FAB effects in self-report studies that have used variants of a bipolar scale (seven points; *very negative* to *neutral* to *very positive*) and variants of a unipolar scale (six points; *slightly un-/pleasant* to *exceptionally un-/pleasant*). Indeed, the FAB emerges across a variety of affect conceptualizations and affect measurement tools (Skowronski, Walker, Henderson, & Bond, in press). Moreover, studies that have explored both moderators of the FAB (Gibbons et al., 2013; Ritchie & Skowronski, 2008; Ritchie et al., 2006, 2009; Skowronski et al., 2004) and mediators of the FAB (Ritchie & Batteson, 2013) have used similarly varied and structurally different affect scales. We did so, as well. Some studies in this article (Studies 1–4) used bipolar self-report scales to assess the affect prompted by events, but Study 5 used a unipolar self-report scale.

Also due to our concern with convergent validity, we assessed event-prompted affect in studies that used both diary methods and in studies that used retrospective recall methods. In the diary studies (Studies 1, 2, and 4), we assessed initial event affect temporally near to the actual experience in which the rated affect had occurred (Studies 1, 2, and 4), asking participants to report the extent to which the event made them feel "un-/pleasantness now." We also assessed affect at later event recall, using a similar affect item phrased as "un-/pleasantness now." In the retrospective memory studies (Studies 3 and 5), we assessed affect by prompting participants to make two affect judgments within the same session: A retrospective judgment about how an event felt when it occurred, and a contemporary judgment about how the event prompts participants to feel as the event is presently recalled.

Finally, the theme of convergence is also repeated across studies in the assessments of the self-relevance of events. Studies 1–4 included variants of the item "How important is this event/behavior to how you think about or define yourself?" In Study 5, the content of our six self-importance items, the Event Self-Importance Index (ESII), converged with

items on the Centrality of Events Scale (CES). For instance, the CES item, "I feel that this event has become a central part of my life story", is similar to our ESII item, "this memory contributes to my sense of self." Additional items from each measure overlap in meaning; however, the two scales differ primarily in their usage. The CES has a clinical emphasis; the ESII has a social emphasis.

Study 1

In Study 1, we cued events using a diary-keeping session. We assessed the valence and intensity of affect produced by an event both at the entry of an event into the diary and at a later session, when the event was recalled. In each session, participants provided ratings on perceived self-importance of the events. Given previous FAB findings, we expected event valence to correlate positively with perceived affect intensity: Positive events should provoke more pleasantness at their recall than negative events provoke unpleasantness at their recall. Moreover, we expected event valence to correlate positively with event self-definition: Participants should perceive positive (compared with negative) events as more self-defining. Importantly, we tested the extent to which the relations among these variables fit Models 1 and 2.

Method

Participants

The sample (56 participants; 41 women) comprised predominantly Caucasian American students enrolled in psychology classes at Northern Illinois University (USA). Their ages ranged from 19 to 41 years ($M = 22$, SD $= 3.82$).

Procedure

Volunteers were directed to a class-related website. Their instructor made the research materials available for them to download from the website. On their own time and in a context of their choosing, participants read the instructions and engaged in the event recording task. Using a spreadsheet, for 2 weeks participants recorded two events daily. Subsequently, each participant submitted their spreadsheet files to a research assistant (RA) via email. An additional 2 weeks passed. An RA then emailed participants their events and instructed each to read and re-rate each event. In this and all subsequent studies, after returning their event diaries and ratings via email, participants received electronic debriefing and were awarded course credit.

Materials

We assessed event valence such that, on each day of the study, participants recorded "something pleasant that happened today" and "something unpleasant that happened today." We assessed event self-definition at Times 1 and 2 with the following item: "How important is this event to how you think about or define yourself?" (1, *not at all*; 6, *extremely*). We used the Time 2 ratings in the analyses. Participants rated their perceived event affect at Time 1 with the item: "How un-/pleasant did you feel when this event occurred earlier today?" After the 2-week interval, at Time 2, they rated each event on the item: "How pleasant or unpleasant does thinking about this event make you feel now?" They made both ratings on an 11-point scale (−5, *extremely unpleasant*; 0 *neutral*; 5 *extremely pleasant*).

TABLE 1 Means (SE) for the Perceived Affect and the Self-Importance of Events at Recall, Adjusted for the Perceived Affect at Events' Occurrence and Event Age Estimates

		Perceived affect		Self-importance	
Study	Session	Negative	Positive	Negative	Positive
1	Occurrence	3.56 (.04)	3.92 (.04)[a]	2.12 (.07)	2.34 (.08)[c]
	Recall	1.70 (.07)	1.98 (.07)[b]	2.05 (.08)	2.26 (.08)[c]
2	Occurrence	5.09 (.18)	5.08 (.19)	2.36 (.38)	3.02 (.40)
	Recall	3.55 (.44)	3.86 (.32)	1.95 (.31)	3.45 (.32)[c]
3[d]	Occurrence	2.28 (.07)	2.51 (.07)[b]	–	–
	Recall	2.09 (.06)	2.14 (.06)	2.75 (.11)	3.30 (.12)[c]
4	Occurrence	3.17 (.17)	3.82 (.17)[a]	1.78 (.35)	2.04 (.37)
	Recall 1	2.79 (.16)	3.46 (.15)[a]	1.97 (.18)	2.02 (.18)
	Recall 2	2.40 (.24)	3.26 (.24)[a]	2.05 (.23)	2.00 (.23)
	Recall 3	2.59 (.22)	2.97 (.22)[c]	1.83 (.21)	2.27 (.20)[c]
	Recall 4	2.66 (.22)	2.99 (.21)[c]	1.95 (.20)	2.15 (.20)
5[d]	Occurrence	5.14 (.09)	5.11 (.09)	–	–
	Recall	2.68 (.14)	3.88 (.14)[c]	3.47 (.13)	3.40 (.13)

Notes: Each significant negative versus positive comparison denoted with superscript letters (a–c): [a]$p < .0005$, [b]$p < .005$, and [c]$p < .05$. Both affect ratings were taken during a single session denoted with a superscript letter d.

Results and Discussion

The results yielded evidence for the FAB (Table 1): The intensity of positive affect prompted by recall of a positive event was significantly greater than the intensity of negative affect prompted by recall of a negative event. The model analyses (which, as noted earlier, control for affect reported at event occurrence) showed that Model 1 fits the data: Event valence plausibly predicted affect at recall through self-importance, $B = 0.13$ (SE = .03), 95% CI = 0.05, 0.20, $R^2 = .28$. The model analyses also showed that Model 2 fits the data: Event valence plausibly predicted event self-importance at recall through affect at recall, $B = 0.18$ (SE = .04), 95% CI = 0.11, 0.27, $R^2 = .19$.

Study 2

In Study 2, participants recorded the extent to which the imagery associated with each event (as opposed to the event itself) was self-defining, and the extent to which that imagery was affectively pleasant or unpleasant. Given the FAB, we expected that at recall, positive images would provoke more affect pleasantness than negative images provoke unpleasantness. Moreover, we expected that image valence would correlate positively with self-definition, such that at recall participants would perceive positive images as more self-defining than negative images. Finally, as in Study 1, we examined the extent to which the relations among these variables fit Models 1 and 2.

Method

Participants

Most (90%) participants were black British undergraduates ($N = 33$; 28 women) enrolled in a psychology course at Middlesex University (UK). Their ages ranged from 18 to 39 years ($M = 21.23$, SD = 4.27).

Procedure

Study volunteers notified their course instructor, who then emailed them instructions and a spreadsheet. Participants recorded in the spreadsheet a dominant image associated with each of either two pleasant or two unpleasant events from "yesterday," and gave their affect ratings (Time 1) for each event image. Two weeks later (Time 2), participants received their event image descriptions via email. They rated each event image on scales that assessed affect intensity at recall and the extent to which an event was self-defining.

Materials and Measures

Instructions to record events began with, "Think of," and were completed by one of two phrases: "a pleasant (or unpleasant) image associated with something that happened yesterday," and "another pleasant (or unpleasant) image associated with something that happened yesterday." Both solicited that event images were of the same valence. We assessed the extent to which participants perceived each event image as self-defining with the following item: "How important is this event to how you think about or define yourself?" (1, *unimportant*; 6 *important*). We assessed perceived event affect with two ratings: "How pleasant did you feel when this event occurred yesterday?" (1, *un-/pleasant*; 6, *un-/ very pleasant*; obtained at Time 1) and "How pleasant does this event image make you feel now?" 2 weeks later (same scale as above; obtained at Time 2).

Results and Discussion

The results yielded evidence for the FAB (Table 1). Though not statistically significant, the intensity of positive affect prompted by recall of images associated with a positive event tended to be somewhat greater than the intensity of negative affect prompted by recall of images associated with a negative event. The model analyses showed that Model 1 fits the data. Event valence plausibly predicted affect at image recall through self-importance, $B = 1.80$ (SE = .49), 95% CI = 0.94, 2.95, $R^2 = .47$. The model analyses also showed that Model 2 fits the data. Event valence plausibly predicted event self-importance at recall through affect at image recall, $B = 0.69$ (SE = .32), 95% CI = 0.18, 1.40, $R^2 = .63$.

Study 3

In Study 3, our data collection strategy changed from recalled "events" (Study 1) and "images associated with events" (Study 2) to recall of specific autobiographical behaviors. This change was sparked, in part, by findings suggesting that individuals recall their actions easily (Bower, 1981; Markus, 1977; Skowronski et al., 2007) and that memory for one's own behavior, like that of events, "...forms a hierarchy of related but distinguishable sets of structures" (Carver & Scheier, 1998, pp. 99 and 100). We expected that this increase in unit specificity (discrete behaviors vs. events) would lend predictive utility to our quest to understand the relationship between self-importance and event affect. Given previous FAB findings, we expected event valence to correlate positively with perceived affect intensity: At their recall, positive behaviors should provoke more pleasantness than negative behaviors provoke unpleasantness. Moreover, we expected behavior valence to correlate positively with event self-definition: At recall, participants should perceive positive behaviors as more self-defining than negative behaviors. Finally, we tested whether the relations among these variables fit Models 1 and 2.

Method

Participants

Participants ($N = 26$; 22 women) included undergraduate students who were enrolled in a psychology course at the University of Southampton (UK). The sample was predominantly Caucasian British. Participants' ages ranged from 18 to 42 years ($M = 20$, SD = 4.84).

Procedure

In response to an advertisement, participants contacted an RA who then emailed each of them instructions and a spreadsheet file to record their behaviors and ratings. They completed the first part of the study independently on their own time in a setting of their choosing, and were reminded by an RA via email to return the completed spreadsheet (via email) 1 week following its receipt. Two months later, the RA emailed participants their behaviors, and the participants then re-rated each behavior. Participants again emailed their completed spreadsheet to the RA.

Materials

Participants recalled and described eight positive and eight negative behaviors that they enacted sometime in the past 2 years. They responded to the following prompt: "An important positive/negative behavior that you did." On both occasions, participants rated the extent to which each behavior was self-defining. We were concerned, in particular, with ratings from Time 2: "When you think of this behavior now, how important is this behavior to how you think about or define yourself?" (1, *unimportant*; 6, *important*). We assessed perceived event-behavior affect with two ratings: "How Negative (3, 2, 1) or Positive (1, 2, 3) did the behavior make you feel when it occurred?" and "When you think of this behavior now, how Negative (3, 2, 1) or Positive (1, 2, 3) does it make you feel?"

Results and Discussion

The results yielded weak evidence for the FAB (Table 1). The intensity of positive affect prompted by recall of behaviors associated with a positive event tended to be greater than the intensity of negative affect prompted by recall of behaviors associated with a negative event, but this difference was not statistically significant. This is one of the few times that we have not obtained the FAB. Whether this is a chance happening or due to the exclusive focus on positive behaviors and negative behaviors is a topic for future investigation. Earlier studies examined whether the FAB was moderated by the judged personal agency of events; however, results from those studies have been unclear (Ritchie et al., 2006).

The model analyses results showed that Model 1 fits the data. Behavior valence plausibly predicted affect at behavior recall through self-importance, $B = 0.17$ (SE = .04), 95% CI = 0.11, 0.23, $R^2 = .41$. The model analyses also showed that Model 2 fits the data. Behavior valence plausibly predicted event self-importance at recall through affect at image recall, $B = 0.16$ (SE = .06), 95% CI = 0.05, 0.27, $R^2 = .41$.

Study 4

In Study 4, we were concerned with conditional mediation, namely whether one or both of the models apply in some circumstances but not others. Prior research indicates that the FAB needs time to emerge (Gibbons et al., 2011; Ritchie & Batteson, 2013). One or both

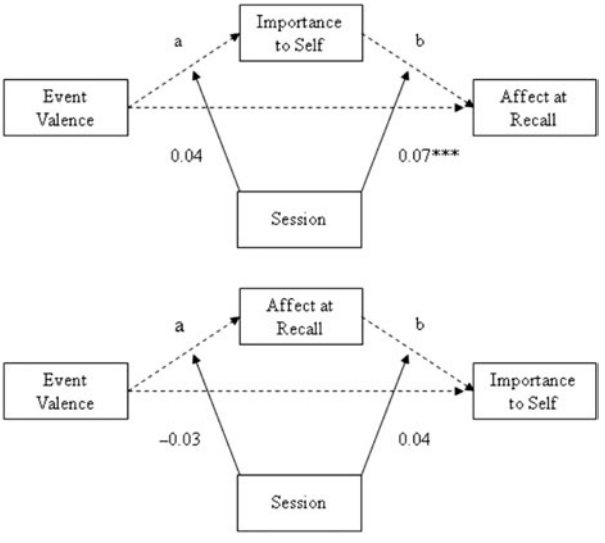

FIGURE 2 Assessment of Model 1 in which the relationship between event valence and perceived affect at recall works through self-defining event importance across time (upper panel), and of Model 2 in which the relationship between event valence and self-defining event importance works through perceived affect at recall across time (lower panel) in Study 4.

of our hypothesized models, then, may apply only after a sufficient passage of time between event occurrence and its recall.

To find out whether the applicability of Model 1 or Model 2 is moderated by time, in Study 4 we obtained ratings of the affect associated with each event memory once a week for each of 4 weeks after an event was first recorded (5 weeks total). We examined viability of both Models 1 and 2, and the viability changed as the lag between event occurrence and event recall increased. The analyses included a five-level variable (which we termed *session*) to represent passage of time (Hayes, 2013; Preacher, Rucker, & Hayes, 2007).

We hypothesized that, if the data evidenced support for one or both of our models, such effects may not occur at initial event reporting (i.e., at Session 1, in which the FAB should be weakest), but instead would manifest from Session 2 through Session 5 (in which the FAB should strengthen). To test this hypothesis, we specified additional parameters and applied them to both models (Figure 2). In Model 1, these were the interaction between session and event valence (denoted as $x \times s$), and the interaction between session and self-importance (denoted as $m \times s$). In Model 2, these were the interaction between session and event valence (denoted as $x \times s$), and the interaction between session and affect at recall (denoted as $m \times s$). We carried out the analysis via the Process macro, model #58 (Hayes, 2013).

Method

Participants

Participants ($N = 22$, 16 female) were mostly students of Irish heritage who were attending the University of Limerick. Their ages ranged from 19 to 42 years ($M = 22.30$,

SD = 4.64). Seventeen participants completed five sessions; three completed four sessions, and two completed three sessions.

Procedure

Volunteers agreed to take part in a 5-week study. An RA sent each participant instructions and a data file template. Participants recorded in the file four ordinary negative events and four ordinary positive events that had occurred within the past 24 h. They also provided ratings (see below) for each event. The first session lasted up to 30 min; participants returned their completed data file to the RA via email.

Subsequent sessions lasted an average of 10 min each. In the first of these, a week after the initial session, participants received a second session file template via email. The template contained each of their eight events, but not their initial ratings. Participants read and re-rated each event, then returned their ratings via email. This procedure occurred for each of three additional weeks. Each session occurred on participants' own time, in contexts of their choosing. Across each of the last four sessions, we changed the event presentation order to minimize context effects.

Materials

At Session 1, the research file prompted each participant to recall then describe each of four positive recent events and each of four negative recent events. After typing a response in a text box, participants rated the item in response to the prompt "How un-/pleasant did this event make you feel when the event occurred?" on an 11-point bipolar scale from 5 (*extremely unpleasant*), through 0 (*neutral*), to 5 (*extremely pleasant*). From Sessions 2 to 5, the item was phrased in the present, "How un-/pleasant does this event make you feel now?", and was rated along the same 11-point scale. Each rating served as the dependent variable in Model 1, and as the mediator in Model 2. Near the events' occurrence, and again during each weekly rating session, participants rated the self-importance of each event at recall: "How important is this event to how you think about or define yourself?" (0, *unimportant*; 6, *important*). We analyzed this item as the hypothesized mediating variable in Model 1, and as the dependent variable in Model 2.

Results and Discussion

We provide descriptive statistics in Table 1. As in all studies, relative to negative events, positive events always prompted higher ratings of affect at recall. This result is typical of the FAB.

Model 1 was statistically plausible. Event valence significantly predicted affect at recall indirectly through self-importance (i.e., $a \times b$ path was significant), $B = 0.27$ (SE = .05), 95% CI = 0.16, 0.36, $R^2 = .33$. However, the results of the conditional mediation analyses suggested that this indirect effect strengthened across time, acting primarily on path b, $B = 0.07$ (SE = .01), 95% CI = 0.04, 0.10, $R^2 = .34$ (Figure 2). Results of subsidiary analyses showed that path b got stronger across sessions (Session 1: $B = 0.15$ (SE = .05), 95% CI = 0.04, 0.26; Session 2: $B = 0.20$ (SE = .05), 95% CI = 0.10, 0.30; Session 3: $B = 0.27$ (SE = .05), 95% CI = 0.16, 0.37; Session 4: $B = 0.33$ (SE = .06), 95% CI = 0.20, 0.46; and Session 5: $B = 0.40$ (SE = .10), 95% CI = 0.22, 0.62). In contrast, the session variable had no impact on path a, $B = 0.04$ (SE = .08), $p > .63$, 95% CI = −0.12, 0.20, $R^2 = .03$.

Model 2 was also statistically plausible. Event valence significantly predicted self-importance through affect at recall, $B = 0.47$ (SE = .06), 95% CI = 0.35, 0.60, $R^2 = .28$. However, the results of the conditional moderation analyses indicated that this indirect

effect was not moderated by the session variable, affecting neither path *a*, $B = -0.03$ (SE = .07), 95% CI = −0.16, 0.10, $R^2 = .11$, nor path *b*, $B = 0.04$ (SE = .02), 95% CI = −0.00, 0.09, $R^2 = .28$ (Figure 2).

Results from Study 4 diverge with respect to the question of moderated mediation. Model 1, in which the relationship between event valence and the intensity of affect prompted by event recall is mediated by perceived self-importance of events, does not apply at Session 1, but does apply at later sessions. This pattern is consistent with the notion that cognitive reappraisal takes time to develop, and only after such reappraisal is accomplished does event self-importance influence the relationship between event valence and the affect prompted by event recall. In comparison, Model 2's mediation applies regardless of session. Hence, the influence of event valence on perceived event self-importance may not depend on the passage of time since event occurrence.

Study 5

Study 5 also relied on conditional mediation to test whether the applicability of each model depends on participants' self-concept clarity. This construct refers to "the extent to which self-beliefs are clearly and confidently defined" (Campbell et al., 1996, p. 141). Self-concept clarity inversely correlates with indices of psychological distress, such as negative affect, neuroticism, and anxiety, and positively correlates with self-esteem and subjective well-being (Campbell et al., 1996; Lavallee & Campbell, 1995; Ritchie, Sedikides, Wildschut, Arndt, & Gidron, 2011). As such, self-concept clarity qualifies as a cognitive resource likely to aid in self-regulation. If having a clear self-concept is associated with a well-regulated self, a person with a clear self-concept would strive to seek, maintain, and enhance the impact of positive autobiographical information on the self and would strive to avoid, cope with, and diminish the impact of negative autobiographical information on the self.

It follows that fit of the models linking event valence, perceived event self-importance, and event-prompted affect may depend on an individual's self-concept clarity. We tested this conditional indirect effect by including two interaction terms in each model. These were valence × self-concept clarity ($x \times s$) and self-importance × self-concept clarity ($m \times s$) in Model 1, and valence × self-concept clarity ($x \times s$) and affect at recall × self-concept clarity ($m \times s$) in Model 2. We carried out statistical analyses via the Process macro, model #58 (Hayes, 2013).

Method

Participants

Most of the 100 participants were Irish volunteers (57 women) from the University of Limerick and the nearby community. Their ages ranged from 18 to 66 years ($M = 28.33$, SD = 12.45).

Procedure

About half of the participants were randomly assigned to an event valence condition (negative events $n = 52\%$). About half of the participants within each of these valence conditions were randomly assigned to an event importance condition (important $n = 51\%$). On their own time and in a context of their choosing, participants read the instructions, and then each recalled and described four autobiographical events in a research booklet, providing the requested ratings for each event. They returned their completed materials to the RA, and as a token of our appreciation, each was offered a bar of chocolate.

Materials and Measures

Each of the instructions included the following: "Think of an un-/important event that happened to you and that, overall, you felt positively/negatively about at that time." We placed no constraints on the ages of the to-be-recalled events.

We assessed an event's contribution to self-definition via an item composite. The ESII that we constructed comprised six items (1, *not at all*; 6, *extremely*) that assessed perceptions of each event's self-defining relevance: "Please indicate the extent to which . . ." (a) "the memory of this event is of significance to my life," (b) "the event I described is of great importance to me," (c) "this event is relevant to me," (d) "this memory contributes to my sense of self," (e) "the described event is an influential factor in my life," and (f) "I feel that this memory is a key occurrence in my past" ($\alpha = .94$; 95% CI = 0.93, 0.95).

As in prior studies, we assessed affect associated with each event with two items: "When it happened, how did the event make you feel?" and "When you remember the event now, how does remembering the event make you feel?" (1, *slightly un-/pleasant*; 6, *exceptionally un-/pleasant*). Finally, we assessed self-concept clarity with the self-concept clarity scale (Campbell et al., 1996). This is a 12-item scale (1, *strongly disagree*; 6, *strongly agree*) measuring the degree to which individuals have a murky-to-clear sense of who they are. An example item is "In general, I have a clear sense of who I am and what I am." Following standard practice, we reverse-scored 10 of the 12 scale items, with higher scores reflecting greater self-concept clarity ($\alpha = .75$, 95% CI = 0.71, 0.78).

Results and Discussion

We provided descriptive statistics in Table 1. As in all studies, relative to negative events, positive events prompted higher ratings of affect at recall. This pattern is indicative of the FAB.

Model 1 was statistically plausible. Event valence significantly predicted affect at recall indirectly through self-importance (i.e., $a \times b$ path was significant), $B = 0.39$ (SE = .08), 95% CI = 0.24, 0.57, $R^2 = .53$. In addition, this model fits equally well across levels of self-concept clarity. Self-concept clarity moderated neither path a, $B = 0.25$ (SE = .16), $p > .10$, 95% CI = −0.07, 0.59, nor path b, $B = -0.07$ (SE = .04), $p > .10$, 95% CI = −0.17, 0.02 (Figure 3).

Model 2 was also statistically plausible. Event valence significantly predicted self-importance through affect at recall (i.e., $a \times b$ path was significant), $B = 0.84$ (SE = .10), 95% CI = 0.64, 1.05, $R^2 = .39$. However, the fit depended on level of self-concept clarity: 10th percentile SCC $B = 0.62$ (95% CI = 0.32, 1.01); 25th percentile SCC $B = 0.77$ (95% CI = 0.54, 1.02), 50th percentile SCC $B = 0.86$ (95% CI = 0.66, 1.06), 75th percentile SCC $B = 0.90$ (95% CI = 0.67, 1.15), and 90th percentile SCC $B = 0.93$ (95% CI = 0.62, 1.26). This moderation effect occurred across both path a, $B = 0.55$ (SE = .17), $p = .002$, 95% CI = 0.21, 0.89, $R^2 = .39$; and path b, $B = -0.08$ (SE = .03), $p = .03$, 95% CI = −0.15, −0.00, $R^2 = .40$ (Figure 3).

Study 5 results diverge with respect to moderated mediation. Model 1, in which the relationship between event valence and intensity of affect prompted by event recall is mediated by perceived self-importance of events, applies equally well across levels of self-concept clarity. In contrast, Model 2, where the relationship between event valence and perceived self-importance of events is mediated by intensity of event affect prompted by event recall, depends on a person's level of self-concept clarity. The latter result suggests that those who are higher (than lower) in self-concept clarity are more prone to using the

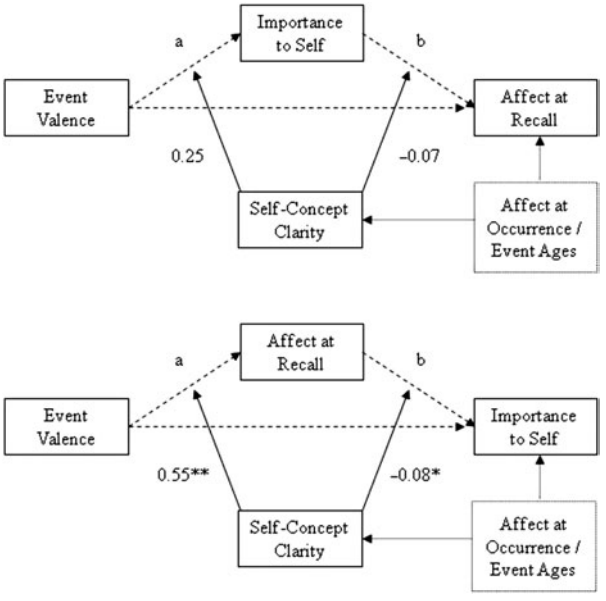

FIGURE 3 Results of analyses of Model 1 (upper panel) and Model 2 (lower panel) assessing the extent to which each model is moderated by an individual's dispositional level of self-concept clarity (Study 5).

valence and intensity of affect prompted by an event's recall as a clue to its self-importance.

General Discussion

People often experience emotions when they recall events. The literature indicates that, at their recall, positive (compared with negative) events prompt more extreme emotional reactions. The reason is that the positive affect associated with positive events persists when those events are later recalled, but the negative affect associated with negative events dissipates. This phenomenon is known as the FAB.

In this research, positive affect at event recall was also judged as more extreme than negative affect at event recall. However, the FAB was not statistically significant in Studies 2 and 3. This may be due to (a) chance, (b) the use of somewhat different events (images prompted by events in Study 2, behaviors in Study 3) than in previous studies, or (c) procedural variation across studies. The results of all five studies converged in documenting that (a) positive (vs. negative) events were associated with higher perceived event self-importance, and (b) perceived self-importance of events was linked to affect prompted by recall of those events (high self-importance = high affect). These studies used methodologically diverse procedures to replicate previous findings (Gibbons et al., 2011; Ritchie et al., 2006, 2009; Walker & Skowronski, 2009).

The most important aim of our research was to gain insight into processes that might link event valence to perceived event self-importance and to intensity of affect prompted by event recall. We tested two models. In Model 1, the link from event valence to intensity of affect experienced at recall is mediated by perceived self-importance of events. In Model 2, the link from event valence to perceived self-importance of events is mediated by perceived intensity of affect experienced at event recall. Results across all five studies fit

both models. Given that our data are observational and the models are fully saturated, we were unable to directly compare the model fits. We encourage future efforts in this direction, but we are not optimistic about their success. In our view, a key reason why both models fit the data is that the relationships between some of our constructs are bi-directional. For example, although it is the case that "what is me is good," it is also likely the case that "what is good is me."

One way in which the two models differed was in the extent to which they applied to alternative circumstances. Study 4 suggested that Model 1 did not apply when there was a short time lag between event occurrence and event recall. Model 1 garnered support from the data at longer time lags. Such results are consistent with the notion that events are subject to cognitive reappraisals, that these reappraisals take time to emerge, and that such reappraisals may only occur in light of changing life circumstances. In contrast, Model 2 applied across all the event-recall lags. The tendency to perceive the good as part of the self may need no time lag to develop or change.

The two models also differed in terms of how well they worked for different individuals. Study 5's results indicated that Model 1 applies across levels of self-concept clarity. The process of cognitive reappraisal works in much the same way for individuals whose self-concept is murky as for those whose self-concept is clear. Here, one might have expected reappraisal processes to be more pronounced in those with clear self-concepts. In comparison, the results supported Model 2 at higher levels of self-concept clarity: The model worked best for individuals with high clarity. Those with high self-concept clarity are particularly likely to experience strong affect at event recall, and to see the events that produce strong affect as reflecting high event self-importance.

Cautionary Notes and Empirical Implications

When statistical analyses indicate that a model fits the data, it may be tempting to become overconfident in the model's validity. We have avoided this temptation. We emphasize, instead, that evidence of an indirect effect only suggests that a model is plausible. Additional research is required to validate the model, and controlled experimentation is needed to demonstrate cause–effect relations among the variables in our two models. For example, to test the hypothesis that individuals evaluate autobiographical events in light of their current self, a researcher would need to manipulate individuals' working self to find out whether event evaluations follow suit. The researcher may manipulate the self (e.g., via priming) so that interpersonal (rather than personal) events be especially important to the working self. If Model 1 holds, then the affect prompted by interpersonal event recall ought to change so that interpersonal events prompt increased affect intensity for interpersonally primed individuals.

Nevertheless, our data analytic strategy has value in that it can identify models that do not fit and can thus be eliminated. That did not happen in our studies. Both Model 1 and 2 fit the data reasonably well, and so both remain as theoretical possibilities that can be explored in future research. Also to be explored in future research is the possibility that both models work at different times and for different persons. This is illustrated by the fact that Model 1 did not work at short time lags but did work across individuals who differed in self-concept clarity, and by the fact that Model 2 worked across time lags but fits the data better for high-clarity than for low-clarity individuals. Such model exploration might be extended to other circumstances and event types (e.g., those that begin or end important life phases, such as the first day on a new job) or event characteristics (e.g., typicality).

Another reason to be cautious about our results concerns method. In studying autobiographical memory, researchers do not have tight control over key design elements.

For example, regardless of method used to obtain events, participants ultimately control the kind of events they report. Thus, there are many confounding variables that may allow alternative explanations for a given outcome. In response to this predicament, autobiographical memory researchers adopt a multi-method approach, which minimizes the possibility that a given result is driven by confounding variables.

We followed this path in several ways. First, our research included participants from several ethnic backgrounds and nationalities. Second, it tested a relatively wide age range of adults. Third, it adopted a multi-method approach. In Study 1, participants kept a diary for 2 weeks, provided ratings on the same day the events had occurred, and gave ratings again 2 weeks later. In Study 2, participants reported and rated events that had occurred 2 days ago, and re-rated each event 2 weeks later. In Study 4, participants reported events that had occurred on the day, or within 24 h, of the time at which an event was recorded and followed each across a month. In Studies 3 and 5, we solicited autobiographical events from participants via retrospection, with a 2-year and no memorial age constraints of recalled events, respectively. They rated their personal events' perceived affect at occurrence and at recall in a single session. Fourth, our research used a variety of items and scales to assess event self-importance and perceived affect at recall. Finally, our research assessed event valence both within-subjects (Studies 1, 2, and 4) and between-subjects (Studies 3 and 5). Despite methodological variations, the findings generally converged. The use of multiple methods and the converging results raise confidence in the basic relationships between event valence, self-importance, and affect. Nonetheless, additional confidence would derive from studies that used even more methodological variations, such as obtaining events via cued recall methods, experience sampling methods, third parties, or objective records.

There may be several additional characteristics that foster an indirect relationship between event valence and event affect. One example is event rehearsal. Social rehearsal moderates the FAB: The more a person actually rehearses (or even claims to rehearse) events socially, the larger the FAB (Ritchie et al., 2006; Skowronski et al., 2004). This social rehearsal effect holds beyond simple repetition. For socially rehearsed events, the breadth of the target audience also influences affect associated with the shared memories (Skowronski et al., 2004). Other forms of memory rehearsal, such as private savoring with particular goals in mind (i.e., to reflect, to learn about one's self), are also related to perceived event affect. Thus, one additional direction for future research concerns the extent to which both private and public event rehearsals influence the role of the self in the affect stemming from personal events.

A second direction stems from the observation that effective self and emotion regulation in the face of negative events involve pursuit of psychological closure (Beike & Wirth-Beaumont, 2005). For example, when a person perceives lack of closure for a negative autobiographical event, a nagging rumination could persist unbidden. Such a feeling may not be overwhelmingly painful, but is surely undesirable. Attaining closure requires the person to reappraise and eventually accept the negativity by confronting it rather than ignoring or denying it (Beike & Crone, 2008). This seemingly requires self-protective goal pursuit (Sedikides, 2012). Future research would do well, then, to focus on the relationship between closure and the personal event affect.

Coda

In accordance with contemporary theorizing about self and memory, our findings converge with the notion that motivational, emotional, and cognitive processes work over time to maintain a positive sense of self that often results in positive memorial affect biases. How

frequently and the reasons why individuals go about this are open empirical issues. To conclude, we concur with Walker and Skowronski (2009) that differential affect fading "may be a consequence of social, cognitive, and motivational processes that help to regulate emotions" (p. 1133). We encourage further testing of such mechanisms. In this regard, this research offers foundational insights into the mediating role of self-appraisals in the relationship between autobiographical valence and perceived event affect. We hope that such insights also offer generative value, providing an impetus for theoretical and empirical advancements, as well as for applications to emotion regulation.

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