Emotion

The Relationship Between Self-Distancing and the Duration of Negative and Positive Emotional Experiences in Daily Life

Philippe Verduyn, Iven Van Mechelen, Ethan Kross, Carmen Chezzi, and Femke Van Bever

Online First Publication, May 28, 2012. doi: 10.1037/a0028289

Emotion

1528-3542/12/$12.00 DOI: 10.1037/a0028289

The Relationship Between Self-Distancing and the Duration of Negative and Positive Emotional Experiences in Daily Life

Philippe Verduyn and Iven Van Mechelen
University of Leuven

Ethan Kross
University of Michigan

Carmen Chezzi and Femke Van Bever
University of Leuven

Extant research suggests that self-distancing facilitates adaptive self-reflection of negative emotional experiences. However, this work operationalizes adaptive self-reflection in terms of a reduction in the intensity of negative emotion, ignoring other important aspects of emotional experience such as emotion duration. Moreover, prior research has predominantly focused on how self-distancing influences emotional reactivity in response to reflecting on negative experiences, leaving open questions concerning how this process operates in the context of positive experiences. We addressed these issues by examining the relationship between self-distancing and the duration of daily negative and positive emotions using a daily diary methodology. Discrete-time survival analyses revealed that reflecting on both daily negative (Studies 1 and 2) and positive events (Study 2) from a self-distanced perspective was associated with shorter emotions compared with reflecting on such events from a self-immersed perspective. The basic science and clinical implications of these findings are discussed.

Keywords: emotion duration, self-distancing, emotion regulation, positive emotions, negative emotions

People often reflect on negative experiences after they happen to improve the way they feel (e.g., Papageorgiou & Wells, 2001; Wilson & Gilbert, 2008). However, empirical research on the consequences of reflecting on negative experiences has produced contradictory findings. Several studies indicate that reflecting on negative events weakens the intensity of such experiences (Pennebaker & Graybeal, 2001; Smyth, 1998; Wilson & Gilbert, 2008). However, other studies link self-reflection with increased negative emotion (Mor & Winquist, 2002; Nolen-Hoeksema, Wicsco, & Lyubomirsky, 2008; Smith & Alloy, 2009).

To account for this seemingly incompatible pattern of findings, researchers have begun to examine the psychological mechanisms that determine when reflecting on negative experiences leads to adaptive or maladaptive consequences (Joormann, Dkane, & Gotlib, 2006; Trapnell & Campbell, 1999; Treynor, Gonzalez, & Nolen-Hoeksema, 2003; Ray, Wilhelm, & Gross, 2008). According to one program of research that has addressed this issue, the type of self-perspective people adopt when reflecting on negative experiences plays a key role in this regard (for reviews, see Ayduk, & Kross, 2010; Kross, 2009; Kross & Ayduk, 2011).

People often recall negative experiences from a self-immersed perspective, in which self-relevant events and emotions are experienced in the first person (Nigro & Neisser, 1983). However, experiences can also be recalled from a self-distanced perspective, in which individuals focus on their experiences from the perspective of an observer or "fly on the wall" (Libby & Eibach, 2002; McIsaac & Eich, 2004; Robinson & Swanson, 1993). A number of recent studies indicate that reflecting on negative experiences from a self-immersed perspective increases emotional intensity, whereas reflecting on negative events from a self-distanced perspective attenuates it (Ayduk & Kross, 2008, 2010; Grossmann & Kross, 2010; Kross & Ayduk, 2008, 2009; Kross, Ayduk, & Mischel, 2005; Wisco & Nolen-Hoeksema, 2011). Although these studies suggest that self-distancing facilitates adaptive self-reflection of negative experiences, they are limited in two ways.

Limitation #1: Self-Distancing and Emotion Duration

Prior research on self-distancing has almost exclusively focused on changes in emotional intensity, whereas other aspects of emotion regulation have largely been ignored. One crucial feature in this regard is *emotion duration*. The duration of an emotional episode refers to the amount of time that elapses between the start and end of an emotional experience.[1] This component of emotional

Philippe Verduyn, Iven Van Mechelen, Carmen Chezzi, and Femke Van Bever, Department of Psychology, University of Leuven, Leuven, Belgium; Ethan Kross, Department of Psychology, University of Michigan.

This research was supported by Grant GOA/10/02 from the Research Fund of the University of Leuven.

Correspondence concerning this article should be addressed to Philippe Verduyn, Department of Psychology, University of Leuven, Tiensestraat 102, 3000 Leuven, Belgium. E-mail: philippe.verduyn@psy.kuleuven.be

[1] The point in time at which the episode starts is clear as, unlike a mood, an emotion is assumed to be elicited by a certain external or internal event (Beedie, Terry, & Lane, 2005). The point in time at which the episode ends can be defined in several ways (Frijda, Mesquita, Sonnemans, & Van Goozen, 1991). In the present article, the end is defined to occur as soon as the emotion is no longer felt for the first time. This definition corresponds to the one used in a number of recent studies on emotion duration (Verduyn, Delvaux, Van Coillie, Tuerlinckx, & Van Mechelen, 2009; Verduyn et al., 2011).

experiences is understudied in emotion research, which is cause for concern both theoretically and practically.

At a theoretical level, we know that emotions are processes that unfold over time. Thus, developing a fine-grained understanding of their dynamic characteristics—such as their duration—is a prerequisite for developing a nuanced conceptualization of how they operate (for similar arguments, see Davidson, 1998; Eaton & Funder, 2001; Frijda, 2007; Hemenover, 2003; Schimmack, Oishi, Diener, & Suh, 2000; Verduyn, Van Mechelen, Tuerlinckx, Meers, & Van Coillie, 2009). As such, it is surprising that, for a long time, the dynamic properties of emotions have largely been ignored. Indeed, in the past, emotions have usually been studied as static phenomena, without paying much attention to the dynamics that follow their onset (e.g., early work on appraisal theory typically examined how different appraisal patterns are related to the onset of different emotions). It is only recently that the dynamic characteristics of emotions have attracted attention. In part, this is due to the blossoming field of emotion regulation, which includes work that examines how different types of regulatory strategies influence the time course of emotions (e.g., Gross, 2007). However, within emotion regulation research, the influence of regulatory actions on emotion duration has only begun to be explored (for an exception, see Verduyn, Van Mechelen, & Tuerlinckx, 2011). This is troublesome, as duration is the central temporal characteristic of emotions (Schimmack et al., 2000).

From an applied perspective, the lack of studies on emotion duration is problematic, as duration, especially the duration of negative emotions, plays a key role in psychopathology, with many disorders being characterized by prolonged episodes of negative affect. In fact, the duration of negative emotional episodes is one of the major criteria for the diagnosis of various mental health disorders according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev., American Psychiatric Association, 2000). The duration of negative affect is also assumed to play a role in the development of various types of somatic disease such as cardiovascular illness (e.g., Brosschot, Gerin & Thayer, 2006; Linden, Earle, Gerin, & Christenfeld, 1997).

Thus, a critical unaddressed issue concerns whether reflecting on negative experiences from a self-distanced perspective is related to the duration of negative emotional episodes. Goal one of this research was to address this issue.

Limitation #2: Self-Distancing and Positive Emotional Experience

Extant research has primarily focused on the role that self-distancing plays in facilitating adaptive self-reflection on negative emotional events, leaving open questions concerning how this process operates in the context of positive emotional events. To date, one study has examined the relationship between self-distancing and positive affect. Gruber, Harvey, and Johnson (2009) found that reflecting on positive memories from a self-distanced perspective led to less intense positive emotions than self-immersed reflection. However, as with previous research examining the effect of self-distancing on negative emotional experiences, this study did not examine how distancing influences the duration of positive emotional experiences. Thus, whether self-distancing is related to the duration of positive emotions remains unclear. Goal two of this research was to address this issue.

Overview of Present Research

Here we aimed to examine how self-distancing is related to the duration of negative emotions (Studies 1 and 2) and positive emotions (Study 2) in daily life using daily diaries. This methodology allows one to examine naturally occurring emotions while, at the same time, minimizing distortions that may influence delayed recall methods (Bolger, Davis, & Rafaeli, 2003; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). We hypothesized that reflecting on affect-eliciting events from a self-distanced perspective would be associated with shorter episodes of *both* negative and positive emotions than reflecting on such events from a self-immersed perspective. This hypothesis is based on evidence that self-distancing is negatively related to emotion intensity (Ayduk & Kross, 2008; Gruber, Harvey, & Johnson, 2009; Kross & Ayduk, 2008; Kross et al., 2005) and on the assumption that similar mechanisms may drive the intensity and duration of emotions (Verduyn et al., 2011; Waugh, Hamilton, & Gotlib, 2010). In this vein, factors that influence emotional intensity are likely candidates for influencing emotion duration because an emotion ends when intensity returns to zero or baseline. Yet it should not be taken for granted that factors determining intensity will also determine duration without examining whether this is the case (Frijda, 2007), especially since intensity and duration are only moderately related (Fredrickson & Kahneman, 1993; Luminet, Zech, Rimé, & Wagner, 2000; Sonnemans & Frijda, 1994). Indeed, similar to medicines that alleviate painful symptoms without removing their cause, some factors may influence emotion intensity without affecting emotion duration.

Study 1

Study 1 examined the relationship between self-distancing and the duration of anger and sadness. We focused on these emotions because prior research indicates that self-distancing reduces their intensity (Ayduk & Kross, 2008; Grossmann & Kross, 2010; Kross & Ayduk, 2008; Kross et al., 2005; Wisco & Nolen-Hoeksema, 2011). We hypothesized that reflecting on these experiences from a self-distanced perspective would be associated with shorter episodes of anger and sadness compared with reflecting on them from a self-immersed perspective.

Method

Participants. Participants were 137 University of Leuven students who participated to receive course credit. Eight participants were removed from the sample because they did not complete the study materials leaving a final sample of 129 participants (15 men and 114 women). The mean age of the participants was 19 years ($SD = 1.9$).

Materials and procedure. Participants were invited to the psychology department in groups of 20. They were informed that they were taking part in a study on emotional experience that would last for 5 consecutive days. To participate in the study, they were told that they would have to complete a questionnaire before going to bed each evening that would ask them about the emotions

they experienced earlier that day. To ensure that they provided information regarding emotional episodes rather than moods, participants were asked to focus on experiences that were clearly elicited by specific internal or external events. Furthermore, following prior research, participants were told that an emotional episode was defined as ending as soon as the emotion was no longer felt for the first time; if the emotion was experienced again later on, they were asked to consider this a new episode (Verduyn, Delvaux, Van Coillie, Tuerlinckx, & Van Mechelen, 2009; Verduyn, Van Mechelen, & Tuerlinckx, 2011). Next, participants were told that they would be asked to indicate which perspective they adopted while thinking during the emotional episodes. It was clarified that a self-immersed perspective corresponds to the perspective of an involved participant, whereas a self-distanced perspective corresponds to the perspective of an external observer. Subsequently, they were provided the Web address for the daily questionnaire. Finally, participants were instructed to take sufficient time to bring the emotional episode back to mind and to remember the way they felt and thought during the emotional episode before answering the daily questionnaire. All of these instructions were repeated each day, prior to participants' completion of the daily questionnaire.

The daily questionnaire was divided into two blocks, with each block corresponding to one of the two emotional experiences (anger and sadness) we examined. Block order was randomized for each participant on each day.

Emotion episode frequency. During each block, participants were first asked how many times they experienced the target emotion that day (anger or sadness, depending on which prompt was randomly presented first). If, during the first block, participants indicated that they did not experience the target emotion in question, they were immediately presented with the block for the other target emotion.

If they indicated "one time," they were then asked to answer a series of questions about that emotional experience. Subsequently, they were presented with the block for the other target emotion and completed the same set of questions.

If they indicated that they experienced two episodes of the target emotion, they were then successively asked to answer questions concerning each emotional experience. In such cases, participants were not presented with the second block concerning the second target emotion, as the total duration of the study, which was part of a course requirement, was restricted (participants were only expected to answer questions on a maximum of two emotional episodes each day).

If they indicated that they experienced more than two episodes of the target emotion, then they were asked questions only about their two most salient experiences. In such cases, participants were not presented with the second block concerning the second target emotion.

Emotion episode intensity. For each emotional episode, participants were first asked to rate its initial intensity on an 8-point scale ranging from *not intense at all* to *very intense*.

Emotion episode duration. Participants subsequently had to rate the duration of each emotional episode. For this purpose, a bar that was divided into six intervals was presented.[2] The total length of the bar denoted 60 min, each interval representing 10 min. Participants had to specify in which of the six intervals their emotional episode ended. If the episode lasted for longer than 1 hour, they had to put a cross in a checkbox labeled "the emotion took longer than one hour." If the emotional episode was not over at the time that participants were completing the questionnaire, participants were asked to indicate how long the emotion already lasted.

Reflecting and self-distancing. After participants indicated how long an emotional episode lasted, they were asked two additional questions. First, for each interval during which they had felt the emotion, they had to indicate (*yes* or *no*) whether they thought about the event that elicited the emotion (e.g., if the emotion lasted for 30 min, participants were asked to indicate, for each of the three 10-min intervals, whether they had thought about the emotion-eliciting event). Second, for each interval during which they thought about the eliciting event, they were also asked to indicate—on a scale from 1 (self-immersed perspective, i.e., predominantly as an immersed participant) to 7 (self-distanced perspective, i.e., predominantly as a distanced observer)—the extent to which they adopted a self-immersed or a self-distanced perspective (e.g., if participants had thought about the emotion-eliciting event during the first 20 min of an emotion, they were asked to indicate, for each of the first two time intervals, the extent to which they adopted a self-immersed or self-distanced perspective while reflecting on the emotion-eliciting event).

Overview of Data Analysis

The data we collected contain information regarding (a) the duration and initial intensity of emotional episodes, and (b) two variables (i.e., reflecting and self-distancing) that may be related to emotion duration. To analyze these data, standard statistical techniques such as regression analysis cannot be readily applied because the duration of some emotional episodes (i.e., episodes that lasted longer than 60 min and episodes that were not over at the time of questioning) is not known, and because the value of reflecting and self-distancing may change within emotional episodes. We therefore used discrete-time survival analysis, which is well suited for dealing with these features of our data (Singer & Willett, 2003). This type of analysis relies on three key statistics: the hazard rate, the survivor rate, and median lifetime.

The *hazard rate* is the conditional probability that an emotional episode that has not yet ended at the beginning of a certain interval will end during that interval. It is calculated as the number of episodes that ended in an interval divided by the number of episodes that were still ongoing at the beginning of that interval. The *survivor rate* is the probability that an emotional episode will still be "alive" at the end of a specific interval. It is computed as the number of emotional episodes that are still ongoing at the end

[2] The choice for the present scale is based upon a small pilot study. For a period of 1 week, 10 participants reported the duration of their anger, sadness, and joy episodes at the end of each day using an open-format response scale. The obtained duration distribution functions were used to construct an interval scale in which the range largely covered the obtained duration scores. Moreover, an interval size was selected that (a) minimized loss of information on the amount of duration, and (b) reflected a level of granularity that participants felt easily capable to provide. With this procedure, we also tried to maximally neutralize the effect of possible deformations due to response tendencies, such as the tendency to indicate alternatives toward the middle of the scale (Schwarz, 1999).

of the interval divided by the total number of emotional episodes.[3] Finally, *median lifetime* refers to the point in time at which half of the emotional episodes have ended.[4] We calculated each of these statistics separately for each emotion on the basis of all episodes of the emotion in question (aggregating both across and within participants).

In discrete-time survival analysis, the logit of the hazard rate is modeled in terms of a weighted sum of predictors, including both substantive predictors (viz., in our case, reflecting and self-distancing) and a number of dummy variables equal to the number of time intervals. The regression weight of each dummy variable reflects (the logit of) the conditional probability that an emotion will end during the time interval in question, provided that it did not end during the previous intervals (i.e., hazard rate) and that all substantive predictors take a value of zero. Together, the dummy variables represent the baseline hazard function and allow for a specific hazard rate for each time interval. Depending on the sign of the weight of a substantive predictor, a higher score on the predictor leads to an upward or downward shift of the baseline hazard function. In the results section, to ease the interpretation, the predictor weights of the substantive predictors are reflected such that a positive weight means that a higher score on the predictor is associated with longer emotion duration, whereas the reverse holds for negative weights. Finally, it is noteworthy that substantive predictors that significantly influence hazard rates also significantly influence survivor rates.

In our key analyses regarding the prediction of emotion duration, we simultaneously took into account all information regarding participants' cognitions during the emotional episode (i.e., the presence vs. absence of cognitions about the eliciting event and the degree of self-distancing when such cognitions were present). For a correct interpretation of the resulting regression weights, it is important to keep in mind the coding of the predictors that were entered into the model (i.e., no reflecting = 0, reflecting = 1; predominantly self-immersed = 0, predominantly self-distanced = 6).[5] Given the nested nature of the predictors, the weight of the first predictor is best interpreted when the second predictor is set to zero; this implies that the regression weight of *reflecting* is an indicator of the difference in emotion duration between not thinking about the eliciting stimulus and thinking about it from a predominantly self-immersed perspective (i.e., a score of zero on self-distancing). Furthermore, the regression weight of self-distancing indicates the impact of an increase of one unit in self-distancing on emotion duration.

Finally, in all models, we included a random intercept to account for the fact that participants reported multiple episodes. All significance tests are chi-square-distributed Wald tests performed in a multilevel framework.

Results

Number of emotional episodes. The final data set contained information on 187 anger episodes and 172 sadness episodes. This implies that participants reported an average of 1.4 anger episodes and 1.3 sadness episodes over the 5 days of the study.

Hazard and survivor functions. The hazard functions are presented in Figure 1. For anger, the hazard rates are fairly high during the first three time intervals and subsequently decline over time. This indicates that a relatively large number of anger episodes end during the first 30 min. However, anger episodes that survive the first 30 min often linger, as the conditional probability that an anger episode ends during the later intervals is comparatively low.

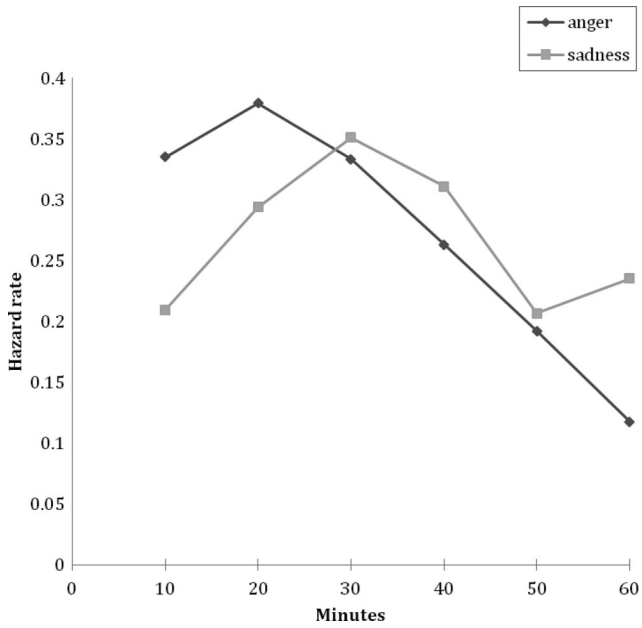

Figure 1. Hazard functions of anger and sadness (Study 1).

In the context of sadness, the hazard rates are not entirely identical to those of anger, as reflected by a marginally significant interaction between the nature of the emotion and the number of the time intervals ($\chi^2_{(6)} = 10.52$, $p = .10$). The difference is specifically located at the first interval, where the hazard rate of sadness is lower than that of anger ($\chi^2_{(1)} = 7.90$, $p < .01$). This means that very short sadness episodes are rarer compared with very short anger episodes. The hazard rates seem to be different at the second and last interval as well, but these differences are not significant (second: $\chi^2_{(1)} = 2.47$, $p = .12$; last: $\chi^2_{(1)} = .44$, $p = .51$).

[3] It is noteworthy that the hazard rates and survivor rates, reflect the same information as the survivor rates can be mathematically deduced from the hazard rates and the other way around. Nevertheless, we kept both of them in the article for two reasons. First, survivor functions are easier to interpret than hazard functions. Second, hazard rates are the statistics that are directly modeled when examining the possible influence of determinants of emotion duration (i.e., regression weights of dummy variables represent the baseline hazard function and regression weights of substantive predictors reflect upward or downward shifts of the baseline hazard function).

[4] The median lifetime is estimated from the survivor function (i.e., the point in time at which a survivor rate of .5 is observed), which, in turn, can be deduced from the hazard function. Each element of the hazard function is estimated based upon all episodes that were still ongoing at the beginning of the interval and of which it was known whether they ended in the interval in question or not.

[5] Self-distancing was measured on a scale ranging from 1 to 7, but we subtracted the value 1, such that the responses vary between 0 and 6, in order to ease the interpretation of the results of the discrete time survival analysis.

The survivor functions are presented in Figure 2. For anger, the survivor rates show a steep drop during the first 30 min and a smaller decline thereafter, which is consistent with the relatively high hazard rates during the first three intervals. Specifically, 73% of the anger episodes end within the first 30 min, whereas during the next 30 min, only an additional 13% end. The initial drop in the survivor rate for sadness is less steep compared with anger, which is also consistent with the fact that the hazard rate of sadness is lower during the first intervals compared with the hazard rate of anger. Specifically, 64% of sadness episodes end within the first 30 min. During the next 30 min, an additional 21% end. The difference in duration between anger and sadness ($\chi^2_{(1)} = 6.02$, $p < .05$) is further reflected by the difference in the median lifetime of the emotions, which is 16 min for anger and 23 min for sadness.

In addition to differences between emotions in hazard and survivor functions, there is also evidence for differences between persons in the overall level of these functions. For both anger and sadness, the variance across persons in the baseline hazard function is significantly different from zero (Anger: $\chi^2_{(1)} = 4.30$, $p < .05$; Sandness: $\chi^2_{(1)} = 6.08$, $p < .05$). This implies that, for anger and sadness, some people tend to experience longer episodes than others. These between-person differences were not related to gender (anger: $\chi^2_{(1)} = .62$, $p = .43$, sadness: $\chi^2_{(1)} = .12$, $p = .73$).

Reflecting, self-distancing, and emotion duration. Participants indicated that they reflected on the eliciting event during 58% of the anger time intervals and 63% of the sadness time intervals (see Table 1). The difference between anger and sadness was not significant ($\chi^2_{(1)} = .39$, $p = .54$). When participants reflected on the eliciting event, they were more likely to do so from a self-immersed perspective than a self-distanced perspective (see Table 1). This was reflected by the average score on the self-distancing scale for anger episodes ($M = 1.47$) and sadness episodes ($M = 1.28$), both of which were closer to the self-immersed pole of the recoded 7-point scale (anger: $\chi^2_{(1)} = 70.21$, $p < .001$; sadness: $\chi^2_{(1)} = 82.25$, $p < .001$) that ranges from 0 (predominantly self-immersed) to 6 (predominantly self-distanced). The difference between participants' tendency to self-distance while reflecting on anger and sad experiences was not significant ($\chi^2_{(1)} = 1.28$, $p = .26$).

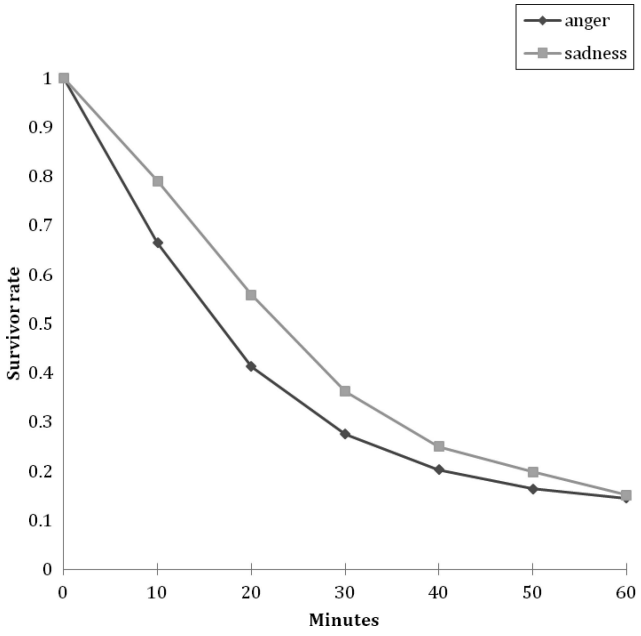

Figure 2. Survivor functions of anger and sadness (Study 1).

Table 1
Frequency of Each Response Category of Reflecting and Self-Distancing, and the Means and Standard Deviations of Self-Distancing for Anger and Sadness

	Emotion	
Reflecting/Self-Distancing	Anger	Sadness
0: No reflection	178	166
1: Reflection		
0: Self-immersed	121	146
1	22	42
2	29	20
3	33	49
4	14	10
5	13	12
6: Self-distanced	9	6
Mean	1.47	1.28
SD	1.81	1.65

Note. Means and *SD*s were calculated based upon the time intervals during which respondents thought about the emotion-eliciting event.

With regard to the discrete-time survival analyses,[6] we first analyzed both negative emotions separately. Subsequently, as respondents did not often adopt a self-distanced perspective (see Table 1), we collapsed data across both types of negative emotions and re-estimated all regression weights to increase the reliability of our analyses. The weights of the dummy and substantive predictors of the duration of negative emotions are presented in Table 2. Recall that (a) the dummy regression weights represent (a logit transformation of) the baseline hazard function, (b) the weight of the *reflecting* predictor corresponds to the difference in emotion duration between not thinking about the eliciting event and thinking about the eliciting event from a predominantly self-immersed perspective (i.e., a score of zero on self-distancing), (c) the weight of the *self-distancing* predictor corresponds to the degree that a one-unit increase in self-distancing is related to episode duration, and (d) substantive predictors that significantly influence hazard rates also significantly influence survivor rates. To further ease interpretation, the substantive parts of the fitted models are graphically represented for each emotion separately in Figure 3.

It was found that reflecting on the eliciting event from a self-immersed perspective was associated with longer emotional episodes compared with not thinking about it when analyzing both negative emotions separately and after collapsing data across

[6] This type of analysis can deal with predictors that vary across time, such as reflecting and self-distancing. This can be understood from the structure of a person-period data set (Singer & Willett, 2003), in which each time interval is represented by a separate row that contains information about, on the one hand, the degree of reflecting and self-distancing during the time interval and, on the other hand, whether the emotion ended during the time interval.

Table 2
Weights of the Dummy and Substantive Predictors of the Duration of Negative Emotions When Analyzing Both Emotions Separately (Anger and Sadness) and Together (Negative) in Discrete-Time Survival Analyses With and Without Controlling for Intensity (Study 1)

	Criterion					
	Anger		Sadness		Negative	
Predictor	No control	Control	No control	Control	No control	Control
Baseline hazard						
Dummy 1	−.42	.76	−1.30	−.02	−.81	.29
Dummy 2	−.08	1.29	−.68	.72	−.42	.80
Dummy 3	−.13	1.32	−.28	1.24	−.27	1.03
Dummy 4	−.33	1.19	−.39	1.26	−.47	.92
Dummy 5	−.65	.90	−.85	.85	−.92	.48
Dummy 6	−1.27	.30	−.67	1.00	−1.12	.27
Substantive predictors						
Initial intensity (0–7)	—	.31****	—	.32****	—	.29****
Reflecting (0/1)	.68**	.58**	.59**	.27	.64***	.42**
Self-distancing (0–6)	−.14*	−.13	−.17*	−.12	−.16***	−.12**

Note. The baseline hazard reflects the (logit of) the hazard rates when all predictors take the value zero. For the dummy predictors, the level of significance was omitted for reasons of clarity.
* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

both negative emotions (ps $< .05$). Moreover, a negative relation was found between the duration of the episode and the degree of self-distancing, which was marginally significant when analyzing both emotions separately (ps $< .10$) and significant when collapsing data across both negative emotions ($p < .05$). This implies that the duration of negative emotions is shorter when one analyzes the event from a self-distanced perspective in comparison with a self-immersed perspective. Finally, even though, in Figure 3, high self-distancing may seem to be associated with somewhat shorter episodes compared with not thinking about the event, this difference was not significant either for anger ($\beta = -.18$, $\chi^2_{(1)} = .17$, $p = .68$), sadness ($\beta = -.45$, $\chi^2_{(1)} = .84$, $p = .36$), or after collapsing data across emotions ($\beta = -.32$, $\chi^2_{(1)} = .89$, $p = .34$).

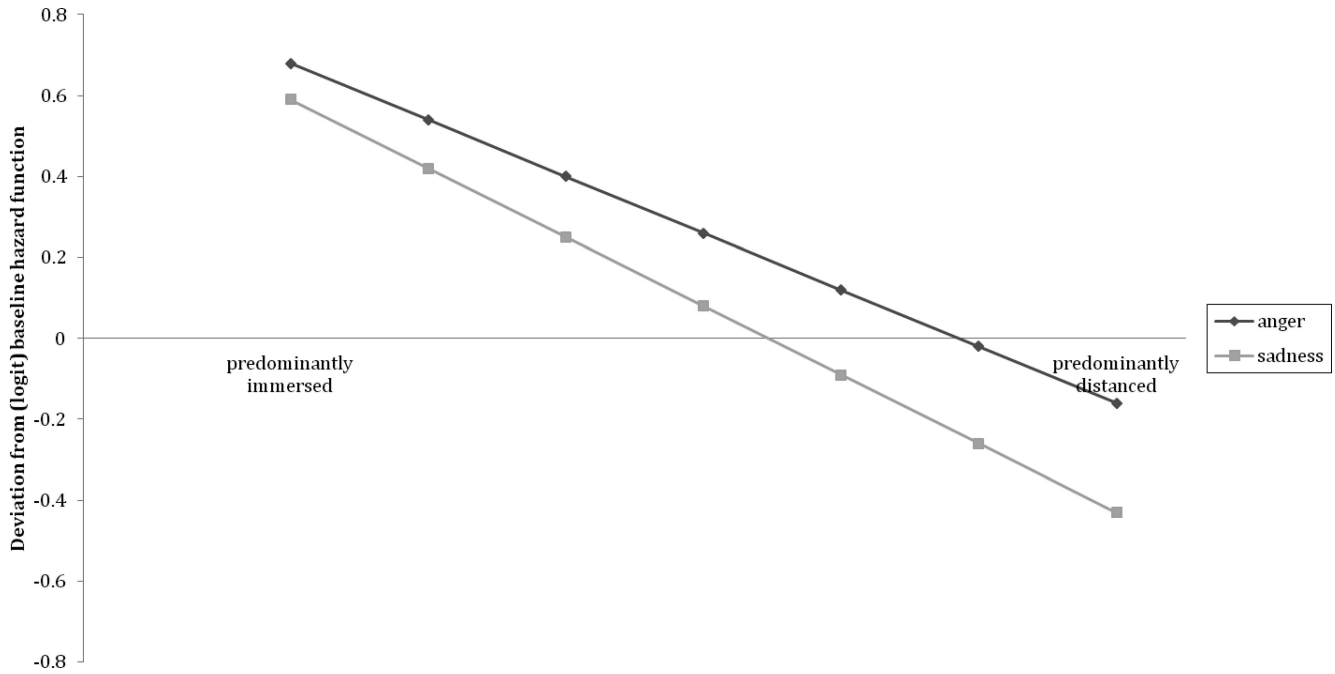

Figure 3. Substantive part of discrete-time survival analysis models for anger and sadness without controlling for intensity (Study 1). Deviations from the (logit) baseline hazard function reflect differences in duration compared with not thinking about the elicitor, and a higher position on the vertical axis indicates longer duration.

These findings suggest that self-distancing shortens emotion duration. However, an alternative interpretation is that the relationship between self-distancing and duration is a consequence of participants adopting a self-distanced perspective more often during low-intensity emotions, which may be relatively short. To address this alternative explanation, we reexamined the relationship between self-distancing and duration while controlling for the initial intensity of the emotions. The weights of the dummy and substantive predictors of the duration of negative emotions, while controlling for intensity, are presented in Table 2. Controlling for emotional intensity did not substantively alter the strength of the aforementioned results—all analyses performed on the collapsed data set that were originally significant remained significant (ps $<$ .05). When intensity was controlled for in analyses performed separately on anger and sadness, we again found that, in the context of anger, a self-immersed analysis was associated with longer duration compared with not thinking about the elicitor ($p <$ .05). For sadness, this difference was no longer significant ($p =$ .38).

A second alternative interpretation for the observed relationship between self-distancing and emotion duration is that it is caused by a tendency of people to self-immerse more as the emotion persisted (i.e., duration predicting immersion rather than the other way around). To address this interpretation, we examined the temporal pattern of self-distancing within emotional episodes. Specifically, we compared the type of perspective adopted during the first and last time intervals of the 104 emotional episodes, which lasted for longer than 10 min and in which reflecting during the first and last time interval had occurred. This analysis demonstrated that participants adopted a self-immersed perspective more frequently toward the beginning of the emotional episode than toward the end ($\chi^2_{(1)} = 13.25$, $p < .001$), as reflected by the lower score on self-distancing during the first ($M = .88$) compared with the last time interval ($M = 1.61$). Moreover, during 21 episodes, people adopted a self-immersed perspective at the start (self-distancing score below 3) and a self-distanced perspective (self-distancing score of 3 or higher) toward the end, whereas the opposite was found for only 5 episodes. These findings suggest that the observation that self-immersion is positively associated with emotion duration is not likely a function of the fact that people self-immerse more as the emotion persists. Instead, these results suggest that adopting a self-immersed perspective prevents the episode from ending, as the termination of emotional episodes is relatively rarely preceded by thoughts from a self-immersed perspective.

Discussion

These findings indicate that the duration of emotional experience is highly variable in two respects. First, replicating prior research, we found that there are differences between emotions. Anger episodes are, in general, shorter than sadness episodes (Scherer, Walbott, & Summerfield, 1986; Verduyn, Delvaux et al., 2009; Verduyn et al., 2011). Second, the duration of emotional episodes was highly variable within emotions, with both anger and sad experiences ranging from those that were relatively short (i.e., $<$ 10 min) to those that were considerably longer (i.e., $>$ 1 hr).

Beyond showing that duration is highly variable, we found that the way one reflects on negative emotional experiences accounts for part of this variability. Specifically, reflecting on negative experiences from a self-immersed perspective was associated with prolonged emotional episodes. In contrast, reflecting on such experiences from a self-distanced perspective was associated with shorter episodes (compared with episodes during which a self-immersed perspective was adopted). Moreover, this relationship between self-distancing and duration remained significant even when intensity was controlled for. This suggests that emotional intensity cannot fully account for the observed relationship between self-distancing and emotion duration. Finally, we found that people more frequently adopted a self-immersed perspective than a self-distanced perspective when reflecting on negative experiences. This reflects that spontaneous thoughts on the emotion-eliciting event more often led to a prolongation than a shortening of the emotional episode. The observation that participants self-distance more often at the end compared with the start of the episode further reflects that the negative relationship between self-distancing and emotion duration is not caused by a tendency of participants to self-immerse more as the emotion persists (i.e., duration predicting self-distancing rather than the other way around).

To further our understanding of the relation between self-distancing and episode duration, we also compared thinking from both perspectives (i.e., self-immersed and self-distanced) with not thinking about the eliciting event at all. This comparison indicated that adopting a self-immersed perspective was associated with longer emotional episodes than not thinking about the eliciting event. This holds for both negative emotions, even though the difference was no longer significant for sadness when controlling for emotional intensity; this may reflect that, for sadness, the prolongation effect of self-immersion is largely explained by the intensity of the episodes during which self-immersion occurs. In contrast to a self-immersed analysis, thinking about the event from a self-distanced perspective was associated with the same episode duration as not thinking about the eliciting event.

When participants indicated that they were not thinking about the emotion-eliciting stimulus, they were probably thinking about something else that was not related to the eliciting event—during a 10-min interval, people almost always think about something (Verduyn et al., 2011). Things that are unrelated to the eliciting event can be considered as distracters, as they direct attention away from the elicitor. Indeed, in a recent study on emotion duration (Verduyn et al., 2011), it was found that when people do not think about the negative emotion-eliciting event, they often think of something else, by way of distraction. In view of all this, the findings of the present study may suggest that self-distancing is a strategy that is at least equally effective as distraction to down-regulate negative emotions in the short term, which is consistent with experimental research that has directly compared the short-term emotion regulatory effects of self-distancing and distraction and found equivalent effects of each strategy (Kross & Ayduk, 2008).

Study 2

Study 1 demonstrated that reflecting on negative experiences from a self-distanced perspective was associated with shorter emo-

tional episodes than reflecting on such events from a self-immersed perspective. Study 2 aimed to (a) replicate these findings, and (b) extend them by examining whether self-distancing was associated with shorter positive emotional episodes as well. Toward this end, we used a daily diary methodology to examine the relationship between self-distancing and emotion duration in response to anger and sad experiences (as in Study 1), as well as experiences involving gratitude and joy. We focused on these positive emotions because they have been studied in recent work on emotion duration (i.e., Verduyn, Delvaux et al., 2009; Verduyn et al., 2011) and therefore allow for a straightforward comparison of data regarding emotion duration.

Method

Participants. Participants were 60 volunteers from the Leuven, Belgium, area. Six participants were removed from the sample because they did not complete all of the daily questionnaires, resulting in a final sample of 54 participants (13 men and 41 women). The mean age of the participants was 28 years ($SD = 11$).

Materials and procedure. Apart from the addition of the emotions of gratitude and joy, the materials and procedure were largely the same as in the first study, with three exceptions. First, we improved the way we instructed the participants, by giving them instructions individually and by providing them with a more detailed description of the terms self-immersed and self-distanced analysis, to ensure that each participant understood these concepts in a similar way. Specifically, self-distanced analysis was defined as "you think about the stimulus that elicited the emotion in a rather distanced way; you take a certain distance from what happened; you look at what happened from the perspective of an external observer." Self-immersed analysis was defined as "you think about the stimulus that elicited the emotion with an emotional interest in it; you enter into what happened; you look at what happened from the perspective of an involved participant."

Second, we simplified the procedure by reducing the number of questions, which further allowed us to collect data for 7 days (compared with 5 days in Study 1). In particular, regarding duration, participants were simply asked to indicate how long the emotion lasted on the same scale that was used in Study 1. Furthermore, regarding the mode of thinking, participants had to select one of the following response options for each interval during which they felt the emotion: 0 = *I did not (or hardly) think about the emotion-eliciting stimulus*; 1 = *I thought about the eliciting stimulus in a predominantly distanced way*; 2 = *I thought about the eliciting stimulus in a way that was neither predominantly distanced nor predominantly immersed*; and 3 = *I thought about the emotion-eliciting stimulus in a predominantly immersed way*.

Third, to ensure that participants provided information on all target emotions each day, participants were asked to provide information on, at most, two episodes for each emotion under study (i.e., two episodes of joy, gratitude, anger, and sadness), instead of, at most, two episodes for the whole set of emotions, as in the previous study. Moreover, if participants experienced more than two episodes of a certain emotion, they were asked to complete the questionnaire in reference to the two most recent ones (instead of the two most salient ones, as in the previous study) to further reduce memory distortions.

Overview of Data Analysis

As in the first study, the data were analyzed by means of discrete-time survival analysis. To ease the comparison with the Study 1 findings, the information on whether and how participants thought about the eliciting event was coded into two predictors, which were simultaneously entered into the model.[7] The weight of the first predictor (reflecting), which was given a value of 1 if participants thought about the eliciting event and 0 if they did not, is an indicator of the difference in emotion duration between not thinking about the eliciting stimulus and thinking about it from a predominantly self-immersed perspective (i.e., a score of 0 on self-distancing). The second predictor (self-distancing) was given a value of 2 if participants thought about the eliciting stimulus in a predominantly distanced way, a value of 1 if they thought about the eliciting event in a way that was neither predominantly distanced nor predominantly immersed, and a value of 0 otherwise. The weight of this variable therefore denotes the impact of an increase of one unit in self-distancing on emotion duration.

Results

Number of emotional episodes. The final data set contained information on 196 anger, 114 sadness, 300 joy, and 215 gratitude episodes. This implies that participants reported an average of 3.6 episodes of anger, 2.1 episodes of sadness, 5.6 episodes of joy, and 4.0 episodes of gratitude over the 7 days of the study.

Hazard and survivor functions. The hazard functions for anger, sadness, gratitude, and joy are presented in Figure 4. In general, the hazard rates start high and decline over time. This means that a relatively large number of emotional episodes end during the first intervals. During the last time interval, the hazard rates increase again. This means that the emotion episodes that are still ongoing after 50 min have a higher probability of ending in the next 10 min; note that, in general, those are few in number.

Importantly, although the aforementioned pattern holds for each of the four emotions, the size of the hazard rate differs across emotions, as reflected by a significant interaction between the nature of the emotion and the number of the time interval $\chi^2_{(18)} = 70.11$, $p < .001$) Significant differences in hazard rates between emotions are mainly situated within the first three intervals. In the first interval, the hazard rate of gratitude is higher than that of anger ($\chi^2_{(1)} = 10.96$, $p < .001$), joy ($\chi^2_{(1)} = 29.49$, $p < .001$), and sadness ($\chi^2_{(1)} = 19.60$, $p < .001$). In the second and third intervals, the hazard rate of gratitude is similar to that of anger (interval 2: $\chi^2_{(1)} = .34$, $p = .56$; interval 3: $\chi^2_{(1)} = .53$, $p = .47$) but higher than that of joy (interval 2: $\chi^2_{(1)} = 5.20$, $p < .05$; interval 3: $\chi^2_{(1)} = 5.27$, $p < .05$) and sadness (interval 2: $\chi^2_{(1)} = 4.29$, $p < .05$; interval 3: $\chi^2_{(1)} = 5.28$, $p < .05$). These findings suggest that short episodes are especially frequent for gratitude and, to a lesser extent, for anger.

The survivor functions for the four emotions are presented in Figure 5. In general, the survivor functions show a steep drop during the first half hour, followed by a smaller decline thereafter. On average, 85% of the emotional episodes ended within the first

[7] When examining the relation between self-distancing and emotion duration without recoding the predictors, the same conclusions were obtained.

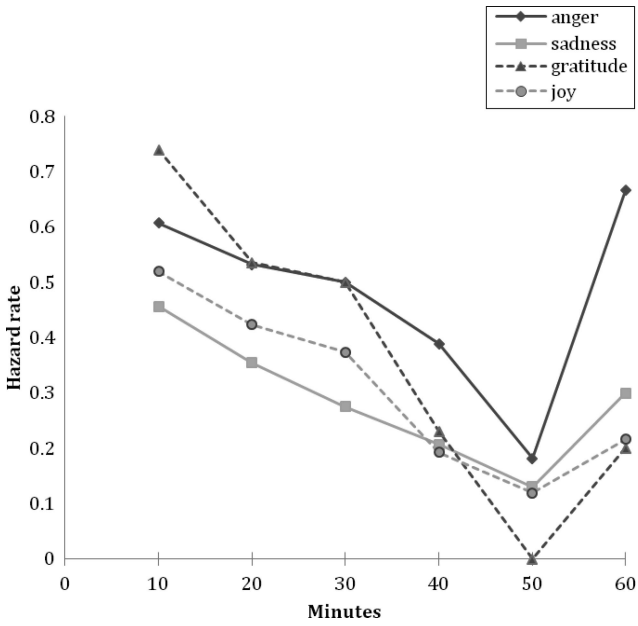

Figure 4. Hazard functions of anger, sadness, gratitude, and joy (Study 2).

30 min. During the second half hour, only an additional 8% of the emotional episodes ended. This pattern is consistent with the hazard functions that take particularly high values during the first three intervals.

As with the hazard functions, however, the survivor functions differ across emotions. In particular, the steepness of the survivor function is highest for gratitude, followed by anger, joy, and sadness. The difference in duration between emotions ($\chi^2_{(3)} = 48.17$, $p < .001$) is also reflected in the median lifetimes, which

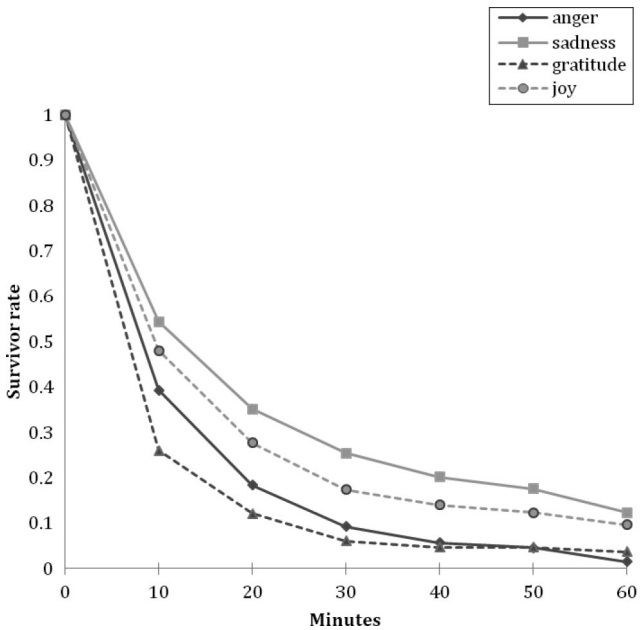

Figure 5. Survivor functions of anger, sadness, gratitude, and joy (Study 2).

are 7 min for gratitude, 8 min for anger, 10 min for joy, and 12 min for sadness. The finding that the median lifetimes of gratitude and anger are less than 10 min logically follows from the fact that more than half of the episodes of these emotions ended during the first 10 min. Finally, pairwise comparisons revealed that gratitude is shorter than anger ($\chi^2_{(1)} = 5.94$, $p < .05$), which, in turn, is shorter than joy ($\chi^2_{(1)} = 14.55$, $p < .001$) and sadness ($\chi^2_{(1)} = 8.28$, $p < .01$). No significant difference between joy and sadness was observed ($\chi^2_{(1)} = .04$, $p = .84$).

Besides differences between emotions in the hazard and survivor functions, there is also evidence for differences between persons in the overall level of these functions. For each emotion, the variance across persons in the baseline hazard functions was significantly different from zero (Anger: $\chi^2_{(1)} = 7.67$, $p < .01$); Sandness: $\chi^2_{(1)} = 8.66$, $p < .01$; Gratitude: $\chi^2_{(1)} = 8.64$, $p < .01$; Joy: $\chi^2_{(1)} = 10.94$, $p < .001$). This implies that for anger, sadness, gratitude, and joy, some people tend to experience longer episodes than others. These between-person differences were not related to gender (Anger: $\chi^2_{(1)} = 2.02$, $p = .16$; Sadness: $\chi^2_{(1)} = 1.92$, $p = .17$; Gratitude: $\chi^2_{(1)} = 2.58$, $p = .11$; Joy: $\chi^2_{(1)} = .05$, $p = .82$).

Reflecting, self-distancing, and emotion duration. Participants indicated that they reflected on the event that elicited their target emotions during 79% of the time intervals (see Table 3). Moreover, consistent with the Study 1 findings, if participants thought back to the eliciting event, they more often adopted a self-immersed than a self-distanced perspective (see Table 3) as the average self-distancing score is .71, which is closer to the self-immersed than the self-distanced pole of the recoded 3-point scale ($\chi^2_{(1)} = 25.01$, $p < .001$) that ranges from 0 (predominantly self-immersed) to 2 (predominantly self-distanced).

Interestingly, however, participants' tendency to (a) reflect on emotion-eliciting events, and (b) adopt a self-distanced perspective while doing so differed depending on the emotion they were focusing on. Specifically, participants spent more time reflecting on negative emotion-eliciting events (anger: 87% of time reflecting; sadness: 94% of time reflecting) compared with positive events (gratitude: 77% of time reflecting; joy: 69% of time reflecting), and this difference between time spent reflecting on negative versus positive emotions was significant ($\chi^2_{(1)} = 87.76$, $p < .001$).

Second, participants tended to adopt a significantly more self-immersed perspective when reflecting on sadness-eliciting events

Table 3
Frequency of Each Response Category of Reflecting and Self-Distancing, and the Means and Standard Deviations of Self-Distancing for Anger, Sadness, Gratitude, and Joy

Reflecting/Self-Distancing	Emotion			
	Anger	Sadness	Gratitude	Joy
0: No reflection	44	18	76	201
1: Reflection				
0: Self-immersed	150	172	109	199
1:	84	56	90	163
2: Self-distanced	69	42	55	95
Mean	0.73	0.52	0.79	0.77
SD	0.81	0.75	0.76	0.77

Note. Means and *SD*s were calculated based upon the time intervals during which respondents thought about the emotion-eliciting event.

($M = .52$) compared with anger ($M = 0.73$, $\chi^2_{(1)} = 7.38$, $p < .01$), joy ($M = 0.77$, $\chi^2_{(1)} = 15.36$, $p < .001$), and gratitude ($M = 0.79$, $\chi^2_{(1)} = 15.60$, $p < .001$), whereas the other three emotions did not differ significantly from each other on degree of self-distancing ($ps > .05$).

Regarding the discrete-time survival analyses, we initially analyzed each emotion separately, and subsequently collapsed data pertaining to emotions of the same valence similarly to Study 1. Moreover, all analyses were also, again, first conducted without controlling for intensity and, subsequently, while controlling for intensity. We will first describe the results regarding the relationship between self-distancing and the duration of negative emotions and then for positive emotions.

Negative emotions. The weights of the dummy and substantive predictors of the duration of negative emotions are presented in Table 4. To ease interpretation, the substantive parts of the fitted models without controlling for intensity are graphically represented for each emotion separately in Figure 6.

Without controlling for intensity, reflecting on the eliciting event from a self-immersed perspective was associated with longer emotion duration compared with not thinking about the eliciting event. This difference was significant for anger and when collapsing data across negative emotions ($ps < .05$) but not for sadness. Moreover, a significant negative relationship was observed between episode duration and the degree of self-distancing for each emotion separately and when collapsing data across both types of emotions ($ps < .05$). This implies that the duration of negative emotions is shorter when a person reflected on the eliciting event from a self-distanced perspective compared with a self-immersed perspective. Finally, in Figure 6, high self-distancing may seem to be associated with somewhat shorter episodes compared with not thinking about the event, but this difference was not significant for anger ($\beta = -.54$, $\chi^2_{(1)} = 1.21$, $p = .27$), sadness ($\beta = -.79$, $\chi^2_{(1)} = 1.11$, $p = .29$), or after collapsing data across emotions ($\beta = -.62$, $\chi^2_{(1)} = 2.51$, $p = .11$).

Controlling for intensity in subsequent analyses did not substantively reduce the significance of any of these results. Indeed, all relationships that were found to be significant without controlling for intensity remained significant ($p < .05$), except for the difference between a self-immersed perspective and not thinking about the elicitor, which became only marginally significant ($p < .10$) when collapsing data across both negative emotions. Thus, as in Study 1, emotion intensity cannot fully account for the relationship between self-distancing and emotion duration.

Positive emotions. The weights of the dummy and substantive predictors of the duration of positive emotions are presented in Table 5. To ease interpretation, the substantive parts of the fitted models without controlling for intensity are graphically represented for each emotion separately in Figure 6.

Without controlling for intensity, reflecting from a self-immersed perspective was associated with a similar duration as not thinking about the eliciting event. Moreover, a significant negative relationship was found between episode duration and the degree of self-distancing for each emotion separately and when collapsing data across both types of emotions ($ps < .05$). This implies that the duration of positive emotions was shorter when participants thought about the event that elicited those emotions from a self-distanced perspective (compared with a self-immersed perspective). Finally, as Figure 6 illustrates, high self-distancing was associated with shorter emotional episodes compared with not thinking about the event, the latter difference being significant for gratitude ($\beta = -1.01$, $\chi^2_{(1)} = 4.26$, $p < .05$), joy ($\beta = -.64$, $\chi^2_{(1)} = 5.28$, $p < .05$), and when collapsing data across both types of positive emotions ($\beta = -.74$, $\chi^2_{(1)} = 10.51$, $p < .01$).

When examining the relationship between self-distancing and the duration of positive emotions while controlling for emotional intensity, a negative relationship between self-distancing and duration was again found, but this difference was now only marginally significant when collapsing data across both types of emotions ($p < .10$). When comparing both types of perspectives with not thinking about the

Table 4
Weights of the Dummy and Substantive Predictors of the Duration of Negative Emotions When Analyzing Both Emotions Separately (Anger and Sadness) and Together (Negative) in Discrete-Time Survival Analyses With and Without Controlling For Intensity (Study 2)

	Criterion					
	Anger		Sadness		Negative	
Predictor	No control	Control	No control	Control	No control	Control
Baseline hazard						
Dummy 1	1.08	2.32	.31	1.40	.82	1.95
Dummy 2	1.37	2.73	.69	1.89	1.04	2.29
Dummy 3	1.70	3.19	.69	1.89	1.11	2.43
Dummy 4	1.38	3.02	.44	1.80	.70	2.16
Dummy 5	.46	2.10	.20	1.57	.09	1.56
Dummy 6	2.92	4.42	1.41	2.69	1.66	3.05
Substantive predictors						
Initial intensity (0–7)	—	$.33^{****}$	—	$.34^{***}$	—	$.32^{****}$
Reflecting (0/1)	1.33^{***}	$.99^{**}$	.66	.06	1.10^{***}	$.67^{*}$
Self-distancing (0–2)	$-.93^{****}$	$-.79^{****}$	$-.72^{***}$	$-.50^{**}$	$-.86^{****}$	$-.69^{****}$

Note. The baseline hazard reflects the (logit of) the hazard rates when all predictors take the value zero. For the dummy predictors, the level of significance was omitted for reasons of clarity.
$^{*}p < .10$. $^{**}p < .05$. $^{***}p < .01$. $^{****}p < .001$.

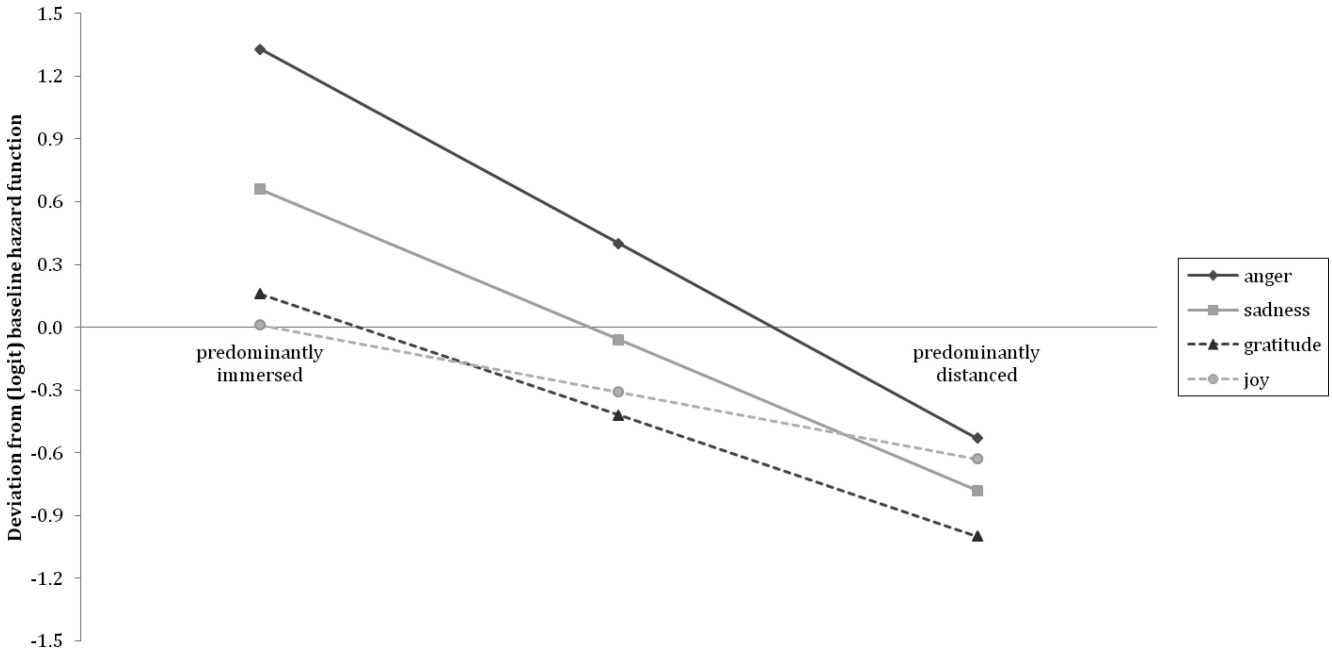

Figure 6. Substantive part of discrete-time survival analysis models for anger, sadness, gratitude, and joy without controlling for intensity (Study 2). Deviations from the (logit) baseline hazard function reflect differences in duration compared with not thinking about the elicitor, and a higher position on the vertical axis indicates longer duration.

eliciting event, it was again found that a self-distanced analysis was associated with shorter emotion duration for gratitude ($\beta = -.99$, $\chi^2_{(1)} = 4.05, p = .05$), joy ($\beta = -.63, \chi^2_{(1)} = 4.93, p < .05$), and when collapsing data across both emotions ($\beta = -.71$, $\chi^2_{(1)} = 9.18$, $p < .01$). In contrast, analyzing from a self-immersed perspective was associated with a similar duration. As such, emotion intensity cannot fully account for the relation between self-distancing and the duration of positive emotions.

Finally, we examined the temporal pattern of self-distancing within emotional episodes to ensure that the negative relation between self-distancing and duration is not caused by a tendency of participants to self-immerse as the emotion persists. Specifi-

Table 5
Weights of the Dummy and Substantive Predictors of the Duration of Positive Emotions When Analyzing Both Emotions Separately (Gratitude and Joy) and Together (Positive) in Discrete-Time Survival Analyses With and Without Controlling for Intensity (Study 2)

	Criterion					
	Gratitude		Joy		Positive	
Predictor	No control	Control	No control	Control	No control	Control
Baseline hazard						
Dummy 1	1.31	2.15	−0.09	.81	.34	1.25
Dummy 2	1.23	2.13	−0.17	.83	.01	1.03
Dummy 3	1.88	2.82	−0.24	.83	−.03	1.08
Dummy 4	1.07	2.00	−1.11	−.05	−.98	.13
Dummy 5	—	—	−1.67	−.62	−1.87	−.81
Dummy 6	.87	1.73	−0.81	.23	−0.76	.30
Substantive predictors						
Initial intensity (0–7)	—	.30***	—	.24****	—	.26****
Reflecting (0/1)	.16	−.36	.01	−.23	.02	−.30
Self-distancing (0–2)	−.58**	−.32	−.32**	−.20	−.38***	−.20*

Note. The baseline hazard reflects the (logit of) the hazard rates when all predictors take the value zero. For the dummy predictors, the level of significance was omitted for reasons of clarity. In the case of gratitude, not a single episode ended during the fifth time interval, by which it was not possible to estimate the regression weight of dummy 5.
* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

cally, we compared the type of perspective adopted during the first and last time intervals of the 237 episodes, which lasted for longer than 10 min and in which reflecting during the first and last time interval had occurred. As in Study 1, we found that participants adopted a self-immersed perspective more frequently toward the beginning of the emotional episode than toward the end for both negative emotions ($\chi^2_{(1)} = 13.42$, $p < .001$) and positive emotions ($\chi^2_{(1)} = 10.50$, $p < .01$). This is reflected by the lower score on self-distancing during the first ($M_{neg} = .45$; $M_{pos} = .64$) compared with the last time intervals ($M_{neg} = .78$; $M_{pos} = .94$). During 17 negative and 15 positive episodes, we found that people adopted a self-immersed perspective at the start (self-distancing score of 0) and a self-distanced perspective (self-distancing score of 2) toward the end, whereas the opposite was found for only 5 negative and 2 positive episodes.

Discussion

Four sets of findings emerged from this study. First, consistent with the findings from Study 1, we found that the duration of emotional experience is highly variable. On the one hand, there is variability between emotions, as episodes of sadness and joy typically last longest, followed by anger and gratitude. These findings are consistent with prior research on the duration of different emotions (Scherer et al., 1986; Verduyn et al., 2009; Verduyn et al., 2011). On the other hand, duration is also highly variable within emotions—for each emotion we examined, there were both relatively short (i.e., shorter than 10 min) and relatively long (i.e., longer than 1 hr) episodes.

Second, although participants often think about the emotion-eliciting stimulus during an emotional episode regardless of whether they are experiencing positive or negative emotions, they tend to think about the eliciting stimulus more in the context of negative emotions. This finding is consistent with the informational negativity effect—negative events have greater informational value than positive ones and therefore elicit more cognitive work (Peeters & Czapinski, 1990). Indeed, people attribute more attention to negative than positive information (Fiske, 1980; Graziano, Brother, & Berscheid, 1980) and negative events tend to elicit more questions about why they happened than do positive events (Abele, 1985; Holtzworth-Munroe & Jacobson, 1985; Weiner, 1985).

Third, we found that when people reflect on *both* positive and negative emotional experiences, they typically adopt a self-immersed perspective (rather than a self-distanced one). This confirms previous research indicating that people tend to spontaneously adopt self-immersed perspectives when reflecting on negative experiences in the laboratory (Ayduk & Kross, 2010). The current results extend these findings by showing that this pattern holds for different types of negative and positive emotions experienced in vivo as well. Otherwise, adopting a self-distanced perspective seems to be somewhat rarer in the case of sadness compared with the other three emotions we examined. This may be due to the inward-directed nature of sadness (Wood, Saltzberg, & Goldsamt, 1990), which may make self-distancing more difficult. However, it should be noted that, in Study 1, the difference in self-distancing between anger and sadness was not significant. Future research is needed to further examine differences in the spontaneous use of self-distancing between emotions.

Fourth, replicating the Study 1 findings, we again showed that negative emotions are shorter when one thinks about the emotion-eliciting event from a self-distanced perspective compared with a self-immersed perspective. Moreover, compared with not thinking about the emotion-eliciting stimulus, thinking from a self-immersed perspective was associated with longer episodes, whereas adopting a self-distanced perspective was associated with a similar duration. If one assumes that when people have not been thinking about the emotion-eliciting stimulus, they have probably been thinking about something else (i.e., distraction), this finding suggests that adopting a self-distanced perspective is equally effective as a distraction to shorten negative emotions. Finally, it should be noted that all conclusions remained substantively the same regardless of whether the initial intensity of the emotional episode was controlled for. This implies that emotion intensity cannot account for the relationship between self-distancing and the duration of emotional experience.

Importantly, extending the Study 1 findings, the current findings suggest that the relationship between self-distancing and emotion duration extend to positive emotional experiences such as joy and gratitude as well. Indeed, for both of these emotions, we found that an episode lasted longer when participants thought about the emotion-eliciting event from a self-immersed perspective compared with a self-distanced perspective. However, it should be noted that, when controlling for emotional intensity, this relationship was only still marginally significant when collapsing data across both types of positive emotions. As such, even though the relationship between self-distancing and the duration of positive emotions is clearly not independent of the initial intensity of the emotional episode, emotion intensity could not fully account for the observed relationship. Nevertheless, future research is needed to further examine the strength of this relationship. Furthermore, for positive emotions, thinking from a self-distanced perspective was associated with shorter emotion duration compared with not thinking about the eliciting stimulus, whereas thinking from a self-immersed perspective was associated with a similar duration. Importantly, this pattern was found regardless of whether emotion intensity was controlled for. This suggests that for positive emotions (unlike for negative ones), distracting oneself does not lead to shorter episodes compared with thinking about the elicitor from a self-immersed perspective. This may reflect the fact that people are less effective at distracting themselves from thinking about positive experiences than negative experiences, or that adopting a self-immersed perspective is more effective in shortening positive emotions than negative ones. Indeed, regarding the former, it has been shown that people look for effective distracters less often during positive than negative emotions (Verduyn et al., 2011). Regarding the latter, it has been found that positive events have less impact and are easier to recover from than negative events, and, consequently, reflecting on a positive event from a self-immersed perspective may be sufficient for shortening emotion duration, whereas this is less often the case for negative events (Baumeister, Bratlavsky, Finkenauer, & Vohs, 2001). However, future research is needed to examine this issue directly.

General Discussion

Prior research indicates that reflecting on negative emotional events from a self-immersed perspective enhances emotional intensity compared with reflecting on such events from a self-distanced perspective (Ayduk & Kross, 2008; Kross & Ayduk, 2008; Kross et al., 2005). The current results extend these findings by examining the relationship between self-distancing and the duration of both positive and negative emotions in daily life.

Our findings demonstrate that the duration of both positive and negative emotional episodes is longer when one reflects over them from a self-immersed perspective (compared with a self-distanced one). This suggests that whether self-distancing is adaptive or not may depend on context. Specifically, if one's goal is to maximize positivity and minimize negativity, then reflecting on negative experiences from a self-distanced perspective and reflecting on positive experiences from a self-immersed perspective may be the most adaptive solution.

Taken together, these findings highlight the need to examine how basic emotion regulatory processes impact both negative and positive emotions. They further suggest that being able to flexibly self-distance versus self-immerse when reflecting on different types of emotional events may be important for maximizing mental health. However, it should be noted that downregulating negative emotions and upregulating positive emotions is not always adaptive (e.g., Parrott, 1993; Tamir, 2009), as negative emotions are often functional (e.g., anxiety as forerunner of a real threat) and positive emotions can be dysfunctional (e.g., idle hope). Future research is therefore needed to identify when it is most adaptive to up- and downregulate positive and negative experiences.

The finding that self-immersed reflection is related to relatively long episodes, whereas self-distanced reflection is related to relatively short episodes, raises questions concerning the underlying processes that account for these relationships. One possibility is that adopting a self-distanced perspective leads people to reconstrue their experience in ways that provide meaning and closure, which shorten the duration of emotional episodes (also see Wilson & Gilbert, 2008). Preliminary evidence for such a process has been found in a number of recent studies on the relation between self-distancing and emotional intensity (Ayduk & Kross, 2010; Kross & Ayduk, 2008; Kross et al., 2005). A second possible underlying process is that self-distancing leads people to view the eliciting event as a single event within a broader context. This may then not necessarily stimulate substantive reappraisals of the target event but may reduce the salience of the eliciting event. This, in turn, may stimulate a shortening of the emotion. Future research is needed to examine these issues.

Addressing Alternative Interpretations

Because we did not experimentally manipulate self-distancing in the present study, we cannot conclude that self-distancing causally leads to shorter emotion duration. Indeed, there are other ways that the current findings can be interpreted. A first alternative way of interpreting our results is that participants may have self-distanced more during low intensity emotional experiences. Since emotional intensity, self-distancing, and emotion duration tend to all be related (Ayduk, & Kross, 2010; Kross & Ayduk, 2011; Verduyn et al., 2009; 2011), it could be the case that intensity is the proximal predictor of emotion duration rather than self-distancing. Because we collected information on the initial intensity of each emotional experience in both studies, we were able to address this concern empirically by examining the relationship between self-distancing and emotion duration, while controlling for emotional intensity. When analyzing each emotion separately, some results that were originally significant became nonsignificant when controlling for emotional intensity. This indicates that the relationship between self-distancing and duration is not entirely independent of intensity. However, when collapsing data of emotions that share the same valence, all effects that were originally significant remained either significant or marginally significant when controlling for intensity. As such, emotion intensity cannot fully account for the observed relationship between self-distancing and emotion duration.

A second alternative interpretation is that emotion duration influenced self-distancing rather than the other way around. Although we cannot fully rule out this possibility with the present data, we contend that it is unlikely for two reasons.

First, analyses of the time dynamics of self-distancing *within emotional episodes* revealed that participants tended to adopt a self-immersed perspective more frequently during the beginning of the emotional episode than toward the end. This suggests that the finding that self-immersion is related to longer episodes than self-distancing is not a consequence of people self-immersing more as the emotion persists (i.e., duration predicting immersion rather than the other way around). Instead, it seems that adopting a self-immersed perspective prevents the episode from ending, as the termination of emotional episodes is relatively rarely preceded by thoughts from a self-immersed perspective.

Second, the present findings are consistent with experimental work indicating that self-distancing causally influences the intensity of concurrent and future emotional experiences (for a review, see Kross & Ayduk, 2011). Moreover, longitudinal research indicates that self-distancing influences emotional experience rather than the other way around (Ayduk & Kross, 2010). In particular, in Study 1 of Ayduk and Kross (2010), the authors examined whether emotional intensity at Time 1 predicted participants tendency to self-distance 7 weeks later. They found no evidence for such a relationship. In contrast, they found that the reverse relationship (distancing at Time 1 predicting intensity 7 weeks later) was significant (Ayduk & Kross, 2010). Thus, even though there is a theoretical precedent to presume that the causal relationship extends from self-distancing to emotional experience, in the absence of additional experimental data, it remains possible that a reciprocal relationship exists between self-distancing and emotion duration, and future studies are needed to further examine this issue.

In sum, it seems likely that the type of self-perspective people adopt when thinking about emotion-eliciting events influences emotion duration. Nevertheless, future studies are needed to investigate the causal link between self-distancing and duration more directly. One way to accomplish this is to instruct participants to adopt a self-distanced perspective when reflecting on an experimentally induced emotional event in the lab, and then subsequently measure emotion duration. In contrast to the present studies, these studies should ideally contain a gender-balanced participant sample. Even though no evidence for gender differences in emotion

duration was found in Study 1 or Study 2, future research is needed to further examine possible gender differences.

Daily Diary Approach

A number of remarks regarding the present methodology are in order before concluding. A strength of this method is that it allows researchers to examine naturally occurring emotions while, at the same time, minimizing distortions that may influence delayed recall methods (Bolger et al., 2003; Kahneman et al., 2004). Indeed, it has been found that data on emotion and pain intensity collected online largely correspond to data obtained by end-of-day reports (Broderick et al., 2008; Dockray et al., 2010). However, we need to be careful when generalizing this conclusion to the accuracy of emotion duration estimates. In order to further reduce possible memory distortions, similar to the day reconstruction method, which has been shown to lead to highly accurate data (Kahneman et al., 2004), participants in the present study were repeatedly asked to take sufficient time to bring the emotional episode back to mind and remember the way they felt and thought during the emotional episode before answering any questions.

Although efforts were taken to minimize memory biases in the current study, one may still wonder to what degree estimates of emotion duration are accurate when they are provided at the end of the day. At this point, no definite claims on this issue can be made, as no conclusive empirical evidence is presently available. On the one hand, research on duration neglect (Fredrickson & Kahneman, 1993) may seem to suggest that people are not capable of estimating the duration of their emotions. However, duration neglects reflects that people do not attribute much weight to duration when making global evaluations of past affective experiences. As Fredrickson and Kahneman (1993) noted, this does not mean that people are not capable of estimating emotion duration. On the other hand, research on the accuracy of retrospective estimates of event duration (e.g., Block & Zakay, 2008) suggests that even though people's estimates of how long events lasted are distorted under certain conditions (e.g., remembered duration is higher when people perform different kinds of information-processing tasks instead of a single task), people are largely accurate when estimating duration. However, participants in those studies were asked to provide duration estimates immediately after the event ended. As such, it is unclear to what degree their findings generalize to the accuracy of emotion duration estimates provided after a delay of 1 day.

An important challenge for future research is to examine the accuracy of emotion duration estimates. Toward this end, two different approaches can be adopted. One approach involves eliciting emotions of different durations in the lab by exposing participants to emotional stimuli (e.g., movie fragments) of different durations that were constructed in order to sustain a specific emotion. After some delay (e.g., one day), one could ask participants to provide an estimate of the duration of their emotions and compare these estimates with exposure duration. An advantage of this approach is that it allows for an accurate measurement of emotion duration, but a disadvantage is that, in daily life, participants often cannot use the duration of an accompanying stimulus to help them make an accurate estimate. Using this approach, we recently found preliminary evidence that people are capable of estimating the duration of relatively short emotions (i.e., shorter than 15 min) at the end of the day (Verduyn, Tuerlinckx, & Van Gorp, in press). Future studies are needed to examine whether this conclusion generalizes to longer emotions. A second approach is to first conduct an experience sampling study during which participants are asked to report on their currently felt emotions several times a day for one or more days. After some delay, respondents could then unexpectedly be requested to provide an estimate of the duration of emotions experienced during the previous part of the study.

Conclusions

These findings extend previous research on self-distancing by demonstrating that the type of self-perspective (i.e., self-immersed vs. self-distanced) one adopts when reflecting on daily emotional experiences is related to the duration of emotional episodes, and this holds for both negative and positive emotions. Future research is needed to examine the psychological processes that mediate the relationship between self-distancing and emotion duration, the causal relationship between these variables, and whether this relationship holds equally strong for different populations or is moderated by certain personality characteristics.

References

Abele, A. (1985). Thinking about thinking: Causal, evaluative, and finalistic cognitions about social situations. *European Journal of Social Psychology, 15,* 315–332. doi:10.1002/ejsp.2420150306

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

Ayduk, O., & Kross, E. (2008). Enhancing the pace of recovery: Self-distanced analysis of negative experiences reduces blood pressure reactivity. *Psychological Science, 19,* 229–231. doi:10.1111/j.1467-9280.2008.02073.x

Ayduk, O., & Kross, E. (2010). From a distance: Implications of spontaneous self-distancing for adaptive self-reflection. *Journal of Personality and Social Psychology, 98,* 809–829. doi:10.1037/a0019205

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology, 5,* 323–370. doi:10.1037/1089-2680.5.4.323

Beedie, C. J., Terry, P. C., & Lane, A. M. (2005). Distinctions between emotion and mood. *Cognition and Emotion, 19,* 847–878. doi:10.1080/02699930541000057

Block, R. A., & Zakay, D. (2008). Timing and remembering the past, the present and the future. In S. Grondin (Ed.), *Psychology of time* (pp. 367–394). Bingley, England: Emerald.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54,* 579–616. doi:10.1146/annurev.psych.54.101601.145030

Broderick, J. E., Schwartz, J., Vikingstad, G., Pribbernow, M. A., Grossman, S., & Stone, A. A. (2008). The accuracy of pain and fatigue items across different reporting periods. *Pain, 139,* 146–157. doi:10.1016/j.pain.2008.03.024

Brosschot, J. F., Gerin, W., & Thayer, J. F. (2006). The perseverative cognition hypothesis: A review of worry, prolonged stress-related physiological activation, and health. *Journal of Psychosomatic Research, 60,* 113–124. doi:10.1016/j.jpsychores.2005.06.074

Davidson, R. J. (1998). Affective style and affective disorders: Perspectives from affective neuroscience. *Cognition and Emotion, 12,* 307–330. doi:10.1080/026999398379628

Dockray, S., Grant, N., Stone, A. A., Kahneman, D., Wardle, J., & Steptoe, A. (2010). A comparison of affect ratings obtained with ecological

momentary assessment and the Day Reconstruction Method. *Social Indicators Research, 99,* 269–283. doi:10.1007/s11205-010-9578-7

Eaton, L. G., & Funder, D. C. (2001). Emotional experience in daily life: Valence, variability, and rate of change. *Emotion, 1,* 413–421. doi:10.1037/1528-3542.1.4.413

Fiske, S. T. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology, 38,* 889–906. doi:10.1037/0022-3514.38.6.889

Fredrickson, B. L., & Kahneman, D. (1993). Duration neglect in retrospective evaluations of affective episodes. *Journal of Personality and Social Psychology, 65,* 45–55. doi:10.1037/0022-3514.65.1.45

Frijda, N. H. (2007). *The laws of emotion.* Mahwah, NJ: Erlbaum.

Frijda, N. H., Mesquita, B., Sonnemans, J., & Van Goozen, S. (1991). The duration of affective phenomena or: Emotions, sentiments and passions. In K. T. Strongman (Ed.), *International review of studies on emotion* (pp. 187–225). Chichester, England: Wiley.

Graziano, W. G., Brother, T., & Berscheid, E. (1980). Attention, attraction, and individual differences in reaction to criticism. *Journal of Personality and Social Psychology, 38,* 193–202. doi:10.1037/0022-3514.38.2.193

Gross, J. J. (Ed.). (2007). *Handbook of emotion regulation.* New York, NY: Guilford Press.

Grossmann, I., & Kross, E. (2010). The impact of culture on adaptive vs. maladaptive self-reflection. *Psychological Science, 21,* 1150–1157. doi:10.1177/0956797610376655

Gruber, J., Harvey, A. G., & Johnson, S. L. (2009). Reflective and ruminative processing of emotional memories in bipolar disorder and healthy controls. *Behaviour Research Therapy, 47,* 697–704. doi:10.1016/j.brat.2009.05.005

Hemenover, S. H. (2003). Individual differences in rate of affect change: Studies in affective chronometry. *Journal of Personality and Social Psychology, 85,* 121–131. doi:10.1037/0022-3514.85.1.121

Holtzworth-Munroe, A., & Jacobson, N. S. (1985). Causal attributions of married couples: When do they search for causes? What do they conclude when they do? *Journal of Personality and Social Psychology, 48,* 1398–1412. doi:10.1037/0022-3514.48.6.1398

Joormann, J., Dkane, M., & Gotlib, I. H. (2006). Adaptive and maladaptive components of rumination? Diagnostic specificity and relation to depressive biases. *Behavior Therapy, 37,* 269–280. doi:10.1016/j.beth.2006.01.002

Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science, 306,* 1776–1780. doi:10.1126/science.1103572

Kross, E. (2009). When self becomes other: Towards an integrative understanding of the processes distinguishing adaptive self-reflection from rumination. *Annals of the New York Academy of Sciences, 1167,* 35–40. doi:10.1111/j.1749-6632.2009.04545.x

Kross, E., & Ayduk, O. (2008). Facilitating adaptive emotional analysis: Short-term and long-term outcomes distinguishing distanced-analysis of negative emotions from immersed-analysis and distraction. *Personality and Social Psychology Bulletin, 34,* 924–938. doi:10.1177/0146167208315938

Kross, E., & Ayduk, O. (2009). Boundary conditions and buffering effects: Does depressive symptomatology moderate the effectiveness of self-distancing for facilitating adaptive emotional analysis? *Journal of Research in Personality, 43,* 923–927. doi:10.1016/j.jrp.2009.04.004

Kross, E., & Ayduk, O. (2011). Making meaning out of negative experiences by self-distancing. *Current Directions in Psychological Science, 20,* 187–191.

Kross, E., Ayduk, O., & Mischel, W. (2005). When asking "why" doesn't hurt: Distinguishing reflective processing of negative emotions from rumination. *Psychological Science, 16,* 709–715. doi:10.1111/j.1467-9280.2005.01600.x

Libby, L. K., & Eibach, R. (2002). Looking back in time: Self-concept change affects visual perspective in autobiographical memory. *Journal of Personality and Social Psychology, 82,* 167–179. doi:10.1037/0022-3514.82.2.167

Linden, W., Earle, T. L., Gerin, W., & Christenfeld, N. (1997). Physiological stress reactivity and recovery: Conceptual siblings separated at birth? *Journal of Psychosomatic Research, 42,* 117–135. doi:10.1016/S0022-3999(96)00240-1

Luminet, O., Zech, E., Rimé, B., & Wagner, H. L. (2000). Predicting cognitive and social consequences of emotional episodes: The contribution of emotional intensity, the Five Factor Model and alexithymia. *Journal of Research in Personality, 34,* 471–497. doi:10.1006/jrpe.2000.2286

McIsaac, H. K., & Eich, E. (2004). Vantage point in traumatic memory. *Psychological Science, 15,* 248–253. doi:10.1111/j.0956-7976.2004.00660.x

Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: A meta-analysis. *Psychological Bulletin, 128,* 638–662. doi:10.1037/0033-2909.128.4.638

Nigro, G., & Neisser, U. (1983). Point of view in personal memories. *Cognitive Psychology, 15,* 467–482. doi:10.1016/0010-0285(83)90016-6

Nolen-Hoeksema, Wisco, B., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science, 3,* 400–424. doi:10.1111/j.1745-6924.2008.00088.x

Papageorgiou, C., & Wells, A. (2001). Metacognitive beliefs about rumination in recurrent major depression. *Cognitive and Behavioral Practice, 8,* 160–164. doi:10.1016/S1077-7229(01)80021-3

Parrott, W. G. (1993). Beyond hedonism: Motives for inhibiting good moods and for maintaining bad moods. In D. M. Wegner & J. W. Pennebaker (Eds.), *Handbook of mental control* (pp. 278–305). Englewood Cliffs, NJ: Prentice Hall.

Peeters, G., & Czapinski, J. (1990). Positive-negative asymmetry in evaluations: The distinction between affective and informational negativity effects. *European Review of Social Psychology, 1,* 33–60. doi:10.1080/14792779108401856

Pennebaker, J., & Graybeal, A. (2001). Patterns of natural language use: Disclosure, personality, and social integration. *Current Directions in Psychological Science, 10,* 90–93. doi:10.1111/1467-8721.00123

Ray, R. D., Wilhelm, F. H., & Gross, J. J. (2008). All in the mind's eye? Anger rumination and reappraisal. *Journal of Personality and Social Psychology, 94,* 133–145. doi:10.1037/0022-3514.94.1.133

Robinson, J. A., & Swanson, K. K. (1993). Field and observer modes of remembering. *Memory, 1,* 169–184. doi:10.1080/09658219308258230

Scherer, K. R., Walbott, H. G., & Summerfield, A. B. (1986). *Experiencing emotions: A cross-cultural study.* Cambridge, England: Cambridge University Press.

Schimmack, U., Oishi, S., Diener, E., & Suh, E. (2000). Facets of affective experiences: A framework for investigations of trait affect. *Personality and Social Psychology Bulletin, 26,* 655–668. doi:10.1177/0146167200268002

Schwarz, N. (1999). Self reports: How the questions shape the answers. *American Psychologist, 54,* 93–105. doi:10.1037/0003-066X.54.2.93

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence.* New York, NY: Oxford University Press.

Smith, J. M., & Alloy, L. B. (2009). A roadmap to rumination: A review of the definition, assessment, and conceptualization of this multifaceted construct. *Clinical Psychology Review, 29,* 116–128. doi:10.1016/j.cpr.2008.10.003

Smyth, J. M. (1998). Written emotional expression: Effect sizes, outcome types, and moderating variables. *Journal of Consulting and Clinical Psychology, 66,* 174–184. doi:10.1037/0022-006X.66.1.174

Sonnemans, J., & Frijda, N. (1994). The structure of subjective emotional

intensity. *Cognition and Emotion, 8,* 329–350. doi:10.1080/02699939408408945

Tamir, M. (2009). What do people want to feel and why? Pleasure and utility in emotion regulation. *Current Directions in Psychological Science, 18,* 101–105. doi:10.1111/j.1467-8721.2009.01617.x

Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: Distinguishing rumination from reflection. *Journal of Personality and Social Psychology, 76,* 284–304. doi:10.1037/0022-3514.76.2.284

Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research, 27,* 247–259. doi:10.1023/A:1023910315561

Verduyn, P., Delvaux, E., Van Coillie, H., Tuerlinckx, F., & Van Mechelen, I. (2009). Predicting the duration of emotional experience: Two experience sampling studies. *Emotion, 9,* 83–91. doi:10.1037/a0014610

Verduyn, P., Tuerlinckx, F., & Van Gorp, K. (in press). Measuring the duration of emotional experience: The influence of actual duration and response format. *Quality & Quantity.*

Verduyn, P., Van Mechelen, I., & Tuerlinckx, F. (2011). The relation between event processing and the duration of emotional experience. *Emotion, 11,* 20–28. doi:10.1037/a0021239

Verduyn, P., Van Mechelen, I., Tuerlinckx, F., Meers, K., & Van Coillie, H. (2009). Intensity profiles of emotional experience over time. *Cognition and Emotion, 23,* 1427–1443. doi:10.1080/02699930902949031

Waugh, C. E., Hamilton, J. P., & Gotlib, I. H. (2010). The neural temporal dynamics of the intensity of emotional experience. *NeuroImage, 49,* 1699–1707. doi:10.1016/j.neuroimage.2009.10.006

Weiner, B. (1985). "Spontaneous" causal thinking. *Psychological Bulletin, 97,* 74–84. doi:10.1037/0033-2909.97.1.74

Wilson, T. D., & Gilbert, D. T. (2008). Explaining away: A model of affective adaptation. *Perspectives on Psychological Science, 3,* 370–386. doi:10.1111/j.1745-6924.2008.00085.x

Wisco, B. E., & Nolen-Hoeksema, S. (2011). Effect of visual perspective on memory and interpretation in dysphoria. *Behaviour Research and Therapy, 49,* 406–412. doi:10.1016/j.brat.2011.03.012

Wood, J. V., Saltzberg, J. A., & Goldsamt, L. A. (1990). Does affect induce self-focused attention? *Journal of Personality and Social Psychology, 58,* 899–908. doi:10.1037/0022-3514.58.5.899

Received April 8, 2011
Revision received February 21, 2012
Accepted March 7, 2012 ■