



The unique relations between emotional awareness and facets of affective instability

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ABSTRACT

The relation between affective instability and two facets of emotional awareness, attention to emotion and clarity of emotion, was examined in two community samples ($N_s = 303, 101$) and one student sample ($N = 409$). Affective instability was positively associated with attention to emotion and negatively associated with clarity of emotion. The two facets of affective instability, affect intensity and emotional variability, were differentially associated with the two components of emotional awareness. As hypothesized, affect intensity was uniquely associated with attention to emotion, whereas emotional variability was uniquely (inversely) associated with clarity of emotion even after taking into account shared variance with neuroticism and gender.

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1. Introduction

Emotional experiences can be parsed into several different dimensions, such as valence, intensity, frequency, and duration (e.g., Schimmack, Oishi, Diener, & Suh, 2000). The present studies examined two of these aspects of emotional experience, emotional variability (sometimes referred to as affective lability; Harvey, Greenberg, & Serper, 1989) and affect intensity (Larsen, 2009; Larsen & Diener, 1987). Although emotional variability and affect intensity are positively correlated (e.g., Emmons & King, 1989; Larsen, 1987; Larsen & Diener, 1987; Oliver & Simons, 2004) and are often considered important facets of affective instability (Henry et al., 2001; Koenigsberg et al., 2002; Larsen, 1987; Miller & Pilkonis, 2006), we tested the hypothesis that they would be uniquely associated with different facets of emotional awareness. We also assessed whether any relations found between facets of affective instability and aspects of emotional awareness would remain after controlling for neuroticism and gender, two variables that have been found to be associated with facets of both affective instability and emotional awareness (e.g., Luminet, Bagby, Wagner, Taylor, & Parker, 1999; Murray, Allen, & Trinder, 2002).

In the present research we examined two facets of emotional awareness, attention to emotion and clarity of emotion. Attention to emotion refers to the extent to which one notices, thinks about, and monitors one's moods. Clarity of emotion refers to how clearly one understands one's own emotions, discriminates among one's

own emotions, and knows how to label these emotions. Several theorists have pointed out that having access to one's own feelings as well as being able to discriminate and label them are vital to adaptively using emotional information (e.g., Bagby, Taylor, & Parker, 1994; Gardner, 1983; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). Given the potential importance of emotional awareness for emotion regulation, we expected emotional awareness to be associated with affective instability. Furthermore, we hypothesized that different facets of emotional awareness would be differentially associated with different facets of affective instability. We hypothesized that (a) clarity of emotion would be inversely associated with emotional variability; and (b) attention to emotion would be positively associated with affect intensity.

Our hypotheses are rooted in the distinction made by Gross (1998a, 1998b) between (a) antecedent-focused emotion regulation, which refers to factors that influence emotion regulation prior to an emotion being elicited; and (b) response-focused emotion regulation, which refers to factors that influence emotion regulation after an emotion has already been elicited. We argue that emotional variability is a reflection of poor antecedent-focused emotion regulation, and is weakly, if at all, associated with response-focused emotion regulation. This hypothesis is based on the view that emotional variability is a reflection of emotions being easily but inconsistently elicited by emotion-eliciting events and circumstance, a pattern that would be expected among individuals with poor antecedent-focused emotion regulation. Furthermore, we propose that the same knowledge and skills used to obtain clarity regarding one's emotions, such as being aware of one's own needs and goals, are used to engage in antecedent-focused emotion regulation. Therefore, we hypothesized that emotional clarity would be associated with emotional variability. This hypothesis is consistent with the

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¹ The first two authors, R.T. and M.D., independently examined the main issues addressed in this paper.

evidence that clarity of emotions is associated with how aware and clear one is about one's needs (Dizen, Berenbaum, & Kerns, 2005) and the view that emotion elicitation is tied to individuals' goals, needs, and concerns being met or unmet (e.g., Carver & Scheier, 1990; Lazarus, 1991).

We argue that affect intensity is, in part, a reflection of poor response-focused emotion regulation, and is less strongly associated with antecedent-focused emotion regulation. This hypothesis is based on the view that just as (a) ruminating is associated with prolonged periods of depression (Nolen-Hoeksema, Morrow, & Fredrickson, 1993); and (b) focusing on future related threats (i.e., worrying) is associated with increased anxiety (Borkovec, Roemer, & Kinyon, 1995), the process of attending to, if not perseverating about, one's emotions can lead those feelings to intensify. Therefore, we hypothesized that attention to emotion would be associated with affect intensity. This hypothesis is consistent with the findings of Gohm and Clore (2002) that individuals who reported higher levels of affect intensity also tended to report paying greater attention to their emotions.

We also explored the possibilities that associations between affective instability and emotional awareness were merely artifacts of shared variance with neuroticism and gender. The distinction between neuroticism and affective instability has been made by Miller and Pilkonis (2006). Nonetheless, past research has found associations between neuroticism and the two facets of affect instability we are examining (i.e., affect intensity and emotional variability; e.g., Eid & Diener, 1999; Gohm & Clore, 2002; Hepburn & Eysenck, 1989; McConville & Cooper, 1999; Murray et al., 2002; Williams, 1993). Similarly, some facets of emotional awareness have been found to be associated with negative affectivity/neuroticism (e.g., Luminet et al., 1999). Along the same lines, some research has found that women report higher attention to emotion than do men (e.g., Thompson, Waltz, Croyle, & Pepper, 2007).

Our hypotheses concerning the relation between affective instability and emotional awareness were tested in a series of three samples. The samples varied in terms of: (a) participant demographics (e.g., community residents vs. college students); (b) whether affective instability was assessed using an interview and/or questionnaire measures of affect intensity and emotional variability; and (c) whether neuroticism was also measured.

2. Methods

2.1. Participants and procedure

2.1.1. Sample 1

The first sample of participants was 303 adults (53% female) between the ages of 18 and 89 years ($M = 43.2$; $SD = 17.6$).² The sample was mostly European American (79%) with 9% African American, 5% Asian American/Asian, 3% Latino/a, and 1% Native American. The remaining 3% indicated being biracial or endorsed the category of "other." A total of 54% had earned a college degree, 32% reported "some" college, 13% completed high school, and 1% reported not completing high school. Participants were recruited through telephone interviews or via advertising. The data were collected as part of a project examining pathways to disturbed emotions, perceptions, and beliefs (Berenbaum, Thompson, Milanak, Boden, & Bredemeier, 2008). As part of this larger project, participants completed a variety of interviews, tasks, and self-report measures. They provided informed consent and were monetarily compensated for their participation.

² Individuals who met schizophrenia criterion A ($n = 7$), who did not complete the research protocol ($n = 6$), and whose data were deemed invalid ($n = 2$) are not included in the present sample of 303 participants.

2.1.2. Sample 2

The second sample of participants was 409 undergraduate students (54.0% female). The participants ranged in age from 16 to 33 years ($M = 19.3$, $SD = 1.9$). The sample consisted of 75% European American, 11% African American, 6% Asian American, 5% Latino/a, and 2% Native American. The remaining 1% endorsed the category of "other." Participants provided informed consent and completed a series of self-report instruments, some of which are described below. Participants received partial course credit for their time.

2.1.3. Sample 3

The third sample consisted of 101 female participants from the community.³ Participants were recruited for a larger longitudinal study investigating rejection within romantic relationships. To be eligible, participants had to be at least 21 years old and in a serious romantic relationship for less than 1 year. Participants who were previously married or had children were not eligible. Participants ranged in age from 21 to 37 years ($M = 23.1$; $SD = 2.7$). The ethnic/racial make-up of the participants was as follows: 70% European American, 13% Asian American/Pacific Islander, 7% Latina, and 6% African American. The remaining 4% indicated being biracial or endorsed the category of "other." Participants completed a series of interviews and self-report instruments at their initial session, including the ones described below.⁴ Participants provided informed consent and were monetarily compensated for their participation.

2.2. Measures

2.2.1. Attention to and clarity of emotion

For all three samples, attention to and clarity of emotion were assessed using the relevant scales of the Trait Meta-Mood Scale (Salovey et al., 1995). Using a 5-point scale (1 = strongly disagree, 5 = strongly agree), participants indicated the extent to which they agreed with each item. The clarity of emotion scale has eleven items (e.g., "I am usually very clear about my feelings"); the attention to emotion scale has 13 items (e.g., "I pay a lot of attention to how I feel"). Self-report measures of attention to emotion and clarity of emotion, including the TMMS, have been found to be associated in theoretically predicted ways with scores on other self-report questionnaires (see Gohm & Clore, 2002, for a review), as well as with behavioral/performance-based measures (e.g., Coffey, Berenbaum, & Kerns, 2003; Dizen et al., 2005; Gasper & Clore, 2000). Internal consistencies for Samples 1, 2, and 3, respectively, were (a) .85, .87, and .82 for attention to emotion; and (b) .85, .87, and .87 for clarity of emotion.

2.2.2. Unidimensional affective instability

For Samples 1 and 3, we used the Personality Disorder Interview-IV (PDI-IV; Widiger, Mangine, Corbitt, Ellis, & Thomas, 1995) borderline personality disorder module to assess the criterion of affective instability due to a marked reactivity of mood. In this semi-structured interview, participants are asked a series of questions (e.g., "Does your mood tend to shift from one feeling to another, even during the same day?", and "When you feel angry (happy), do you tend to feel *really* angry (happy)?"). These questions are followed up as needed for clarification, with the trained interviewers making dimensional ratings of affective instability

³ One individual who met criteria for bipolar I disorder with psychotic features is not included in the present sample of 101 participants.

⁴ All participants completed the affective instability interview. However, due to time constraints and the order of the questionnaire packet, only 98 participants completed the AIM, 94 participants completed the TMMS, and 87 participants completed the ALS.

(0 = absent; 1 = subthreshold⁵; 2 = present; 3 = severe). Interviewers were graduate students trained by Thomas Widiger, Ph.D., the lead developer of the PDI-IV. For Sample 1, a second trained member of the research team (blind to the same scores) listened to recorded interviews and independently rated them. When raters disagreed about whether the diagnostic criterion was above or below threshold, or disagreed by more than one point, the research team discussed the case and resolved the disagreement by consensus. Other disagreements (e.g., one rater assigned a score of 2, and the second rater assigned a score of 3) were resolved by using the mean of the two raters. Interrater reliability, measured using the intraclass correlation coefficient, treating raters as random effects and the mean of the raters as the unit of reliability (Shrout & Fleiss, 1979), was .90. For Sample 3, the first author (RT) conducted all the interviews. The second author (MD) listened to a subset ($n = 25$) of the interviews and independently rated them. Both individuals were blind to participants' attention to emotion, clarity of emotion, emotional variability, and affect intensity scores. Interrater reliability, measured using the intraclass correlation coefficient, treating raters as random effects and the individual rater as the unit of reliability, was .75.

2.2.3. Facets of affective instability

Emotional variability and affect intensity were measured in Samples 2 and 3.

2.2.4. Emotional variability

The 54-item Affective Lability Scale (ALS; Harvey et al., 1989) was administered to assess trait levels of emotional variability. Using a 4-point scale (0 = very unresponsive, 4 = very responsive), participants rated the extent to which their mood shifts between what they consider to be their normal baseline to affective domains of anger, depression, elation, and anxiety, as well as their tendency to oscillate between depression and elation and between depression and anxiety. Sample items include "One minute I can be feeling O.K. and the next minute I'm tense, jittery and nervous," and "I frequently switch from being able to control my temper very well to not being able to control it very well at all." The ALS has been shown to have good internal consistency and suitable test-retest reliability (Harvey et al., 1989). A total score was computed to reflect the total variability in affect. Cronbach's alpha for Samples 2 and 3 were .90 and .94, respectively.

2.2.5. Affect intensity

Trait levels of affect intensity were assessed using the 40-item Affect Intensity Measure (AIM; Larsen, Diener, & Emmons, 1986). Using a 6-point scale (1 = never, 6 = always), participants indicated the extent to which they would react as described. Sample items from include the following: "When I feel guilt, this emotion is quite strong," and "My emotions tend to be more intense than those of most people." The AIM has been shown to have good internal consistency, test-retest reliability, and good discriminant validity (Larsen et al., 1986). Cronbach's alpha for Samples 2 and 3 were .89 and .87, respectively.

2.2.6. Neuroticism

For Samples 2 and 3, neuroticism was measured using the emotional stability scale from the International Personality Item Pool (2001). Items were reverse scored to reflect neuroticism and not emotional stability. Sample 2 completed the 10-item version, and Sample 3 completed the 20-item version. For both versions, partic-

ipants indicated the extent to which (1 = very inaccurate, 5 = very accurate) each item accurately reflected them. Example items include "am relaxed most of the time," (reverse-scored) and "get upset easily." Cronbach's alpha for Samples 2 and 3 were .89 and .93, respectively.

3. Results

Correlations among measures within each sample are presented in Table 1. Next, we conducted two multiple regression analyses to test the associations between attention to and clarity of emotion and the broad construct of affective instability. Using data from Sample 1, we simultaneously entered attention to emotion, clarity of emotion, and gender as predictors of affective instability. Using data from Sample 3, we simultaneously entered attention to emotion, clarity of emotion, and neuroticism as predictors of affective instability. As presented in Table 2 and as hypothesized, even when taking into account shared variance with gender or neuroticism, affective instability was (a) positively associated with attention to emotion; and (b) negatively associated with clarity of emotion. The variance explained by each model is also presented in Table 2.⁶

The goal of the next set of analyses was to examine whether attention to emotion would be uniquely (positively) associated with affect intensity, whereas clarity of emotion would be uniquely (inversely) associated with emotional variability, even after taking into account neuroticism and gender. For each of Samples 2 and 3, we conducted two multiple regression analyses, one predicting affect intensity and the other predicting emotional variability. For Sample 2 gender and neuroticism were also entered as predictors in the regression, whereas for Sample 3 neuroticism was also entered as a predictor in the regression. As can be seen in Table 2, as hypothesized, even after taking into account shared variance attention to emotion and neuroticism and/or gender, clarity of emotion continued to be significantly, negatively associated with emotional variability for Samples 2 and 3. Also, as hypothesized, even after taking into account clarity of emotion and neuroticism and/or gender, attention to emotion continued to be significantly, positively associated with affect intensity for Samples 2 and 3. The variance explained by each model is also presented in Table 2.⁷

4. Discussion

Across three separate samples, we found consistent evidence of emotional awareness being associated with affective instability. In addition, different facets of emotional awareness were associated with different facets of affective instability. Specifically, as hypothesized, emotional variability was inversely associated with clarity of emotion, whereas affect intensity was positively associated with attention to emotion. Further, we found that the associations between emotional awareness and affective instability could not be accounted for by shared variance with gender or neuroticism, the latter being the strongest personality correlate of affective instability. Our results, therefore, provide evidence of emotional awareness being an important and non-redundant correlate of individual differences in affective instability.

Emotion elicitation is tied to individuals' appraisals of whether their needs, goals, and concerns are being met (e.g., Carver & Scheier, 1990). To the extent that individuals are unaware of and unclear about their needs or even the actions and intentions of others, their appraisals should be inconsistent. To the degree that individuals are inconsistent in these appraisals, we posit that they

⁵ In consultation with Thomas Widiger, Ph.D., we changed the original PDI-IV 3-point rating scale (absent, present, severe) to a 4-point scale by adding a subthreshold point to the continuum.

⁶ Exploratory analyses did not reveal any significant attention \times clarity interactions predicting affective instability.

⁷ Exploratory analyses did not reveal any significant attention \times clarity interactions predicting emotional variability or affect intensity.

Table 1
Correlations between measures within each sample.

	Within Sample 1		Within Sample 2					Within Sample 3				
	2	3	2	3	4	5	6	2	3	4	5	6
1. Attention	.08	.20**	.13**	–	.07	.43**	.16**	.13	.17†	.10	.22*	.07
2. Clarity	–	–.23**	–	–	–.47**	–.07	–.45**	–	–.45**	–.46**	–.24*	–.54**
3. Instability		–	–	–	–	–	–	–	–	.38**	.47**	.59**
4. Variability					–	.39**	.62**	–	–	–	.46**	.61**
5. Intensity						–	.43**				–	.45**

Note: '–' indicates that the independent variable was not assessed in the respective sample.

1 = Attention to emotion (measured by TMMS); 2 = clarity of emotion (TMMS); 3 = affective instability (PDI-IV); 4 = emotional variability (ALS); 5 = affect intensity (AIM); 6 = neuroticism (IPIP).

† $p < .10$.

* $p < .05$.

** $p < .01$.

Table 2
Results of regression analyses predicting affective instability and its components (β).

	Affective instability		Emotional variability		Affect intensity	
	Sample 1	Sample 3	Sample 2	Sample 3	Sample 2	Sample 3
Attention	.18**	.17*	.03	.09	.32**	.20*
Clarity	–.25**	–.24*	–.24**	–.21*	.05	–.03
Neuroticism	–	.43**	.52**	.49**	.36**	.42**
Gender	–.10	–	.04	–	–.16**	–
R ²	.11**	.38**	.43**	.40**	.35**	.24**

Note: '–' indicates that the independent variable was not assessed in the respective sample. Attention = attention to emotion; clarity = clarity of emotion.

* $p < .05$.

** $p < .01$.

should have elevated levels of emotional variability. Clarity regarding these sorts of issues (e.g., needs, appraisals, others' intentions) should also be expected to influence antecedent-focused emotion regulation more broadly as well as emotional clarity. It will be important for future research to more directly test these hypotheses. We recommend that researchers examine how clear individuals are about which emotions they are experiencing and how clear individuals are about the reasons why they are feeling their emotions (Baker, Thomas, Thomas, & Owens, 2007; Boden & Berenbaum, submitted for publication).

We hypothesize that the process of attending to, if not perseverating about, one's emotions can lead individuals' feelings to intensify. We also speculate that affect intensity is a reflection of factors that play out after the emotion-eliciting event has already taken place, including how individuals attend to the event and their responses to the event, and hence will be associated with response-focused emotion regulation. We argue this process occurs weakly, if at all, during the antecedent-focused portion of emotion regulation. Our finding of a positive association between attention to emotion and affect intensity replicates results by Gohm and Clore (2002).

The findings of this paper underscore the importance of emotional awareness by highlighting how it is associated with a range of emotional experiences. The results also suggest that emotional awareness may play a role in emotion regulation—the processes by which individuals influence which emotions they experience, when emotions are experienced, and how emotions are experienced and expressed (Gross, 1998a, 1998b). Given that emotion regulatory processes can support or disrupt an individual's ability to work, relate to others, and enjoy oneself (Gross & Munoz, 1995), understanding mechanisms that influence such processes is extremely important. Individuals with emotional awareness deficits such as low clarity of emotion have been found to be less cognizant of their own psychological needs (Dizen et al., 2005). Not understanding how one feels may adversely affect the regulation of emotions. If, as many have posited (e.g., Carver & Scheier, 1990; Lazarus, 1991), emotions serve to inform whether goals,

needs, and concerns are being met, individuals who overly attend to or poorly differentiate between emotions will have a difficult time determining the best course of action to have their goals, needs, and concerns be met. This may subsequently lead to ineffective or short-term solutions for regulating emotions.

Because of the correlational nature of this research, we cannot be certain of whether emotional awareness actually plays a causal role in influencing affective instability and its different facets. We posit that although the causal arrow is likely bi-directional, it will be more strongly pointing in the direction of emotional awareness influencing affective instability. In fact, existing research has already highlighted the importance of emotional processes for emotion regulation (e.g., emotional differentiation; Feldman Barrett & Gross, 2001; Feldman Barrett, Gross, Christensen, & Benvenuto, 2001). Feldman Barrett et al. (2001, p. 721) also theorize that individual differences in emotional processes “sets the stage for emotion regulation.” To determine whether emotional awareness plays a causal role in influencing any dimensions of emotional experiences, however, future research should employ two alternative strategies: (a) experimental manipulation of emotional awareness (e.g., Boden & Berenbaum, 2007; Moon & Berenbaum, 2009); and (b) longitudinal designs including ecological momentary assessment (e.g., Trull et al., 2008).

Another advantage to using an ecological momentary assessment design is that it would permit the examination of other facets of affective instability. For example, temporal dependency was not examined in the present study, but is sometimes considered a facet of affective instability (e.g., Larsen, 1987). Which facets compose affective instability often varies from study to study. What is still needed is the psychometric justification of variables considered to compose affective instability. Future research should also continue investigating these issues with the goal of elucidating the precise mechanisms that contribute to the onset and severity of affective instability. Despite these limitations, our findings contribute to a critical discussion and an expanding literature examining affective instability.

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