Emotion

Can I Tell You How I Feel? Perceived Partner Responsiveness Encourages Emotional Expression

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When do people express their emotions to other people and when do they choose not to do so? Emotional experience—positive or negative—often leads people to reveal their feelings to others, especially to close relationship partners. Although emotional expression has been incorporated into recent dyadic models of emotion regulation, little research has examined the specific interpersonal processes responsible for facilitating or inhibiting emotional expression. This article reports results from a pair of methodologically distinct studies examining the impact of perceived partner responsiveness (PPR) on emotional expression. The results of Study 1, a 2-week daily diary study, demonstrated that within-person variations in the perceived responsiveness of a close partner were associated with corresponding day-to-day variations in emotional expression to that partner. In Study 2, in the context of a stressful situation, we manipulated perceptions of a romantic partner's responsiveness and then measured emotion expression toward that partner. Higher levels of experimentally induced PPR causally led to greater expression of anxiety. Together, these studies identify PPR as an important interpersonal mechanism underlying emotional expression.

Keywords: responsiveness, perceived partner responsiveness, emotional expression

Supplemental materials: http://dx.doi.org/10.1037/emo0000650.supp

Felt emotion is sometimes expressed to others; at other times, it is not. Though researchers have previously explored individual differences in emotional openness (e.g., Gross, 1998), to date little research has been reported on the conditions that determine when people do and do not express the emotions they feel to others. In this article, we describe a pair of methodologically distinct studies showing that relational context, specifically perceived partner responsiveness (PPR), guides people's expression of both positive and negative emotion to that partner.

When Do People Express Emotions?

When people experience emotions—positive or negative—they often describe them to other people, an action defined as emotional expression. Considerable research suggests that doing so enhances liking, intimacy, trust, and received support (Graham, Huang, Clark, & Helgeson, 2008; Nils & Rimé, 2012), both in the moment and over the long term (Cameron & Overall, 2018). Despite the well-documented personal and interpersonal costs of not express-

ing one's emotions for both nonexpressers and their partners (e.g., English, John, Srivastava, & Gross, 2012; Peters, Overall, & Jamieson, 2014), people nonetheless do not always express their emotions, even to others with whom they are in close relationships (e.g., English, Lee, John, & Gross, 2017; Richards, Butler, & Gross, 2003).

Expressing emotion (or not) is generally conceptualized as a distinct emotion-regulation strategy used to modulate the trajectory of the emotional experience, shaping both the intensity and duration of emotions (Brans, Koval, Verduyn, Lim, & Kuppens, 2013; Gross & John, 2002; Verduyn, Van Mechelen, & Tuerlinckx, 2011). As such, these expressions of emotion, which may reflect deliberate or automatic choices, may fulfill or thwart any of a diverse variety of affective goals, such as lessening unhappy feelings, eliminating a source of distress, or prolonging happy feelings. Often, pursuit of these affective goals involves other people—for example, individuals regulating emotions often draw on other people as resources, to receive support or advice, to promote closeness, or to boost one's image in the eyes of others (e.g., Fitzsimons, Finkel, & Vandellen, 2015; Kennedy-Moore & Watson, 2001; Orehek, Forest, & Barbaro, 2018; Rimé, 2007, 2009; Zaki & Williams, 2013). Although research has examined the effectiveness of certain specific interpersonal strategies in achieving emotion-regulation goals (e.g., Cameron & Overall, 2018; Thoits, 1984), relatively few researchers have looked at how relational context itself affects the initial decision to enact a behavior central to most interpersonal strategies—that is, to express (or not express) one's emotion to others. As a step toward better integrating the emotion and relationship literatures, here, we examine how relational context influences emotional expression.

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We suggest that the functional significance of emotional expression depends on the nature of the relationship between the emotion-expresser and the recipient (Barasch, Levine, & Schweitzer, 2016; Clark & Taraban, 1991; Von Culin, Hirsch, & Clark, 2018). Emotions often convey critical information about the self that requires people to balance the potential gains of expression against the foreseeable risks in doing so. For example, expressions of anxiety and sadness reveal the person's vulnerabilities and dependencies to others (Clark & Taraban, 1991). Whereas these expressions can lead to the receipt of social support (Clark, Ouellette, Powell, & Milberg, 1987; Graham et al., 2008; Öhman & Mineka, 2001), they also can be exploited or ignored (Coyne & Whiffen, 1995), resulting in the psychological pain that accompanies such rejection (Eisenberger & Lieberman, 2004). Although there is risk in revealing one's vulnerabilities, emotional openness—that is, the disclosure of the emotions that one is experiencing—is also central to the development of intimacy, as the intimacy process model proposes (Reis & Shaver, 1988), and is therefore key to relationship development.

Similarly, expressions of happiness can lead others to like us more (e.g., Clark & Taraban, 1991; Staw, Sutton, & Pelled, 1994), to find us more attractive (Mueser, Grau, Sussman, & Rosen, 1984), and to help us savor the moment (Gable, Reis, Impett, & Asher, 2004). Yet, expressions of happiness also can elicit envy and jealousy (e.g., Smith & Kim, 2007), neglect (Schaubroeck & Lam, 2004; Uchida & Kitayama, 2009), dislike (Hoogland et al., 2015), and even exploitation (Van Kleef, De Dreu, & Manstead, 2006). In short, expressing emotion can elicit both favorable and unfavorable responses. People are most likely to see emotional expression as an effective regulation strategy when they anticipate garnering a favorable response from their partners.

Clark, Fitness, and Brissette (2001) proposed that people will express their emotions more frequently or more intensely when they believe their partner feels responsible for meeting their needs. This early proposition anticipated two broadly influential theoretical models that, to the best of our knowledge, have not yet been integrated. We integrate them here to provide a broad rationale for our prediction that levels of PPR will influence emotion expression.

The first model, Gross (2015) extended process model of emotion regulation, emphasizes the dynamic nature of emotion regulation. In this model, emotion regulation has three stages: identification that an emotion is occurring, selection of an emotion regulation strategy, and implementation of that strategy. Often, this process unfolds in a social/relational context; that is, in the presence of another person whose influence and expected response affects all three stages. Although this model posits that emotion regulators adjust their behavior in anticipation or perception of a partner's response to their expression of emotion, it does not specify what aspect of the social/relational context is most salient to people nor what particular perceptions are the most important determinants of whether a person will or will not express emotion to a particular other. For this we turn to the second model, Murray, Holmes, and Collins (2006) risk regulation model, which posits that, as partners become interdependent, they continually weigh the potential benefits and risks of openness and dependence on the other. They do this by evaluating their partner's regard and care: when partners seem likely to be responsive, people feel safe

relying on the relationship and are more willing to self-disclose (McCarthy, Wood, & Holmes, 2017). In contrast, when the possibility of nonresponsiveness or even exploitation becomes appreciable, self-protection goals (which often involve being emotionally closed) become prominent. To the best of our knowledge, this model has not yet been tested in the specific case of expressing emotions that arise in everyday life (as opposed to emotions triggered by the relationship itself).

Integrating the Gross (2015) and Murray et al. (2006) models is important for at least two reasons: (a) it identifies a conceptual bridge linking growing literatures in the subfields of emotion and relationship science, and (b) it provides insight into a specific relational process that underlies emotional expression. With regard to this latter point, Clark et al. (2001) speculated that people's emotional openness should depend on their anticipating or perceiving that partners will be responsive when they convey their emotional states. The two studies reported in this article test this specific and as yet untested hypothesis.

Perceived Partner Responsiveness Encourages Emotional Expression

PPR refers to the belief that relational partners have been and/or will be positively attentive to one's welfare. It includes perceptions that the other understands, validates, and cares for oneself, and has been shown in many studies to predict relationship and personal well-being (see Reis, Clark, & Holmes, 2004; Reis & Clark, 2013, for reviews). PPR should encourage emotional expression in several ways. First, and most obviously, the caring component encompasses the belief that partners feel responsible for one's needs, will provide support when needed, and will not be exploitative (Clark & Aragon, 2013). Second, through the understanding component, PPR engenders confidence that partners are knowledgeable enough to provide support in a manner congruent with one's self-defined needs and preferences (Reis, Lemay, & Finkenauer, 2017). Third, through the validation component, PPR fosters confidence that partners accept one's feelings and, by implication, the legitimacy of one's concerns. Existing research suggests people are unwilling to open up if they are wary of unwanted advice or comments that show little insight into or acceptance of how one feels (Kelly & McKillop, 1996).

Precisely because expressions of emotion can be met with support or harm, when people are deciding whether or not to express emotions to partners, their perceptions of that partners' responsiveness should be critical. Prior research does demonstrate that people are more willing to express emotion to partners perceived as caring (Von Culin et al., 2018) and that partners do in fact respond more positively (Clark et al., 1987; Clark & Taraban, 1991) and less negatively (Yoo, Clark, Lemay, Salovey, & Monin, 2011) to expressions of emotion when they do care. However, research typically has not examined PPR and actual expression of emotions (positive and negative). Even when studies do examine actual emotional expression, it is done in correlational, as opposed to experimental, research (e.g., Thomson, Overall, Cameron, & Low, 2018). Our studies explore the hypothesis that high PPR will be closely linked to and, indeed, should cause actual expression of emotion.

The Present Research

The studies reported in this article expand on what is known about the role of relational context for understanding emotional expression in five ways: (a) We examine a specific interpersonal process (PPR) that has received little attention in studies of emotion regulation, and that may be responsible for relationship-context effects on emotional expression. (b) We consider actual expression of emotion rather than willingness to express emotion. These variables may differ, inasmuch as people often say they are willing to express emotion to a particular partner but do not actually do so, either because of situational constraints or because their self-reports reflect social desirability or motivated bias. (c) In a true experiment, we test a causal link between PPR and emotion expression, confirmed through independent observations. (d) We establish the ecological validity of these propositions by examining day-to-day variations in emotional expressions as a function of daily fluctuations in PPR via a daily diary study. (e) The designs of these two studies—one examining within-person fluctuations, the other manipulating PPR—allow us to rule out an alternative explanation inherent in most prior studies, namely that both perceived responsiveness and emotional openness reflect general characteristics of a supportive, as opposed to nonsupportive, relationship, rather than the specific process of perceived responsiveness leading to increased expression of emotion.

We conducted two studies to examine the association between PPR and emotional expression.[1] Study 1 was a daily diary study in which participants reported on emotional experience, the emotional expression of joy, pride, excitement, contentment, gratitude, anger, sadness, and anxiety, and PPR relevant to a particular close other on each day for 14 days. Study 2 was a true experiment focusing on the expression of anxiety—an emotion commonly experienced (especially among college students) and regulated in close relationships. In this experiment, PPR was manipulated, an anxiety-producing situation was created, and actual emotional expression to a close romantic partner was measured.

Study 1

In Study 1, we sought to determine whether natural, everyday fluctuations in PPR would predict corresponding fluctuations in emotional expression. The logic behind this study was twofold. First, because perceptions of relational partners, like emotions, vary from day to day, we felt it important to show that the ebb and flow of daily variations in PPR would predict daily variations in emotional expression to that partner. In other words, in Study 1, we examined this process within persons. Second, by identifying within-person associations, the design of Study 1 would allow us to rule out explanations that the association between perceived responsiveness and emotional openness reflects some other trait-like characteristic of supportive and nonsupportive relationships.

Study 1 also focused on potential moderation of the expression of one particular emotion, anxiety, by daily stress. Stress and the associated emotion of anxiety are common among college students (Beiter et al., 2015) and when they occur, people often seek support from others by expressing their anxiety. When stress is low, perceived responsiveness may have relatively little impact on expression of anxiety, inasmuch as one's anxiety tends to be relatively low and there is little reason to be concerned about a partner's likely response. However, when stress is high, perceived

responsiveness may matter more: Stress should naturally lead to emotional openness and support seeking but only when a partner is perceived to be responsive—that is, expected to respond in an understanding and caring way. Another reason for examining whether stress moderates the association between perceived responsiveness and anxiety expression was in anticipation of Study 2, an experiment in which we created a stressful event in the laboratory, and then examined whether experimentally induced levels of responsiveness would affect expression of anxiety about that stressful task. In other words, we wished to examine the same conceptual association in two studies that used very different methods.

In Study 1, we first asked college students to identify a target person: someone with whom they have a meaningful relationship and with whom they expected to communicate every day for 14 days. Then, each night, participants were asked to report on the level of responsiveness they perceived from that person, their experience of each of eight emotions (joy, pride, excitement, contentment, gratitude, anger, sadness, and anxiety) on that day, and the degree to which they had expressed each of those eight emotions to their target person.[2]

Method

Participants. A power analysis was first conducted with Optimal Design software (Spybrook et al., 2011), using the following assumptions: a small effect size ($d = 0.2$), $\alpha = .05$, 12 (out of 14) daily diaries per participant, effect size variability of 20%, and 50% of variance attributable to covariates. Using these specifications, 122 participants were needed to achieve power of 0.95. Taking into account that daily diary studies with undergraduate samples typically lose 20~30% of participants due to attrition or inattention, the sample size goal was set to 163.

Two hundred and five participants were recruited from a psychology department participant pool for course credit. Participants ranged in age from 18 to 26 ($M = 20.17$, $SD = 1.42$). Among them, 104 (50.7%) participants were male, 100 participants (48.8%) were female, and one participant identified as gender fluid. Eighty-nine participants (43.4%) described themselves as Asian, 89 participants (43.4%) as White/Caucasian, 26 participants (12.7%) as Black/African American, and two participants (1%) as Native Hawaiian/Pacific Islander. Seven participants (3.4%) chose "other," and three participants (1.5%) chose "prefer not to answer." Participants were able to check as many boxes as applied.

Procedure. This research was approved by the University of Rochester Research Subjects Review Board. Participants first attended an intake session, where they completed a brief preliminary set of measures and were given thorough instructions about accessing and completing the nightly surveys. For the duration of the study (14 nights), participants received a unique link to the survey at 8 p.m., accompanied by a request to fill out the survey before going to bed. A reminder e-mail was sent if participants had not opened the survey link by midnight. The survey link expired at 5 a.m. the next morning to prohibit participants from filling it out

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[1] Neither of these data sets has been used in prior publications.
[2] These eight emotions were selected on the basis of a pilot study conducted at the same university that indicated these were the emotions most often experienced by students on a daily basis.

after awakening in the morning. If participants did not complete the survey on a given night, they were sent an additional reminder e-mail the next morning (after the link had expired). These procedures were designed to encourage compliance and minimize memory bias.

To screen for inattentive responding, two attention checks appeared in each nightly survey (Maniaci & Rogge, 2014). The first attention check instructed participants to leave the answer blank; if they instead selected one of the available options, they were alerted with a pop-up message: "We noticed that you are not paying attention to the questions and instructions! Please make sure to pay attention throughout the rest of the survey." The second attention check asked participants to choose a particular answer for one question. The answer given was generated randomly each time, so that participants would not be able to memorize the correct answer to pass the attention check.

Measures.

Baseline emotion regulation. Participants completed the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) during the intake session. Our focus was the Suppression subscale,[3] for which the reliability was $\alpha = .82$.

Baseline relationship satisfaction. Satisfaction with one's relationship with the target person was assessed with the 16-item version of the Couples Satisfaction Index (Funk & Rogge, 2007) during the intake session. Three items were modified to apply to nonromantic relationships (Items 1, 9, and 22 in Appendix A in the online supplemental materials). The reliability was $\alpha = .94$.

Baseline perceived partner responsiveness. Perceptions of the target person's responsiveness were assessed with the eight-item Perceived Partner Responsiveness Scale (Crasta & Rogge, 2015; see Appendix B in the online supplemental materials) during the intake session. Sample items included "Today, [target person's name] tried to see where I was coming from" and "Today, [target person's name] seemed to ignore the things that were most important to me" (reverse-scored). Reliability was $\alpha = .94$.

Target person. Participants were asked to identify a target person to whom a portion of the nightly surveys would apply. They were requested to choose someone with whom they have a meaningful relationship and with whom they anticipated communicating every day over the next two weeks. Participants also were asked to describe their relationship with the target, and were allowed to check as many categories as applied. Most targets were romantic partners ($n = 84$; 41%) or close friends ($n = 94$; 45.9%). An additional 38 (18.5%) participants chose a roommate, 16 (7.8%) chose a family member, and 3 (1.5%) selected "other." Participants were asked to provide the first name of their target person, which was piped into the nightly survey questions.

Daily perceived partner responsiveness of the target person. Perceptions of the target person's daily responsiveness were assessed using the 8-item Perceived Partner Responsiveness Scale (Crasta & Rogge, 2015). Items were reworded slightly to fit the daily context and the target person's name was piped in (e.g., "My partner usually tries to see where I was coming from" was reworded to "Today, [Bill] tried to see where I was coming from"). Items were scored on a 1 (not at all) to 7 (extremely) scale. Reliability for this measure was calculated separately for each day (range, from $\alpha = .87$ to $\alpha = .93$) and then averaged across the 14 days, yielding $\alpha = .90$. Within-person effects accounted for 49.5% of the variance.

Daily stress. Participants were asked to rate their daily stress level with the following item, using a 7-point Likert scale: "Compared to other days at college, how stressful was today?"

Daily emotional experience and expression. Eight emotions were assessed nightly: joy, pride, excitement, contentment, gratitude, anger, sadness, and anxiety. Based on a pilot study, two terms were altered to allow more face validity in the daily context: Sadness was reworded as "down or sad" and anger was reworded as "annoyed or angry."

For each emotion, participants first rated how much they had experienced that emotion at any point during that day. Next, if they had experienced the emotion, they were asked to rate the degree to which they had expressed that emotion to their target person on that day. Both items were scored on a scale from 1 (not at all) to 7 (a great deal). If the participant chose "1" for having experienced that emotion on that day, they were offered the option "N/A; did not experience this emotion" for the expression question. Entries that indicated not having experienced that emotion were excluded from the analysis.[4]

Data cleaning. The dataset was cleaned based on several criteria typically used in daily diary research. All data cleaning took place prior to conducting any substantive analyses.

First, the number of nightly surveys missed by participants was examined. Data from seven participants who had missed more than half of the nightly surveys were excluded from the analysis. Next, data from eight participants who missed more than half of the measures in each nightly survey they had begun were dropped from the dataset.

The duration of each nightly survey was used to identify participants who did not spend enough time completing the surveys, and were thus deemed to not having thoughtfully answered the questions. The median duration of completing the nightly surveys was 7.76 min ($SD = 27.50$). Twenty-two participants averaged less than 5 min, and their data were dropped if they also failed one other inclusion criterion (described in the next paragraph).

Responses also were screened for inattention. Data from six participants who failed both attention checks on more than half of their surveys were excluded. Another exclusion criterion was stereotyped responding, as indicated by using the same response option on the five daily diary scales that had both positively worded and negatively worded (reverse-scored) items.[5] This led to exclusion of 15 participants. Data also were excluded from 12 participants who gave the identical response for all such items on at least 3 scales and who also had very fast completion times. Data from one further participant were dropped, because these participants completed the surveys in under 5 min on average and skipped multiple scales in each survey. Across these criteria, in

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[3] To be sure, by including this measure we do not imply that suppression (intentionally withholding expression of emotion to reduce its intensity) is the same as not expressing emotion when it is experienced. Nevertheless, because of the importance of suppression in the literature, we wanted to rule out possible confounding by suppression as an emotion regulation trait.

[4] There were a small number of inconsistencies between the two answers, such as indicating "not at all" for the emotional experience, but then reporting some level of expression. We treated any entry that had either answer as "not at all" as not having experienced that emotion on that day.

[5] This includes a few scales not relevant to the research described in this report.

total, data from 34 participants were excluded. Data from one additional participant were dropped due to breaking up with his or her target person during the study, leaving a final analytic sample of 170 participants (50% male, 49.4% female, and .6% gender fluid)—a sample size above our power target.

Results

Descriptive statistics. The dataset included 2,110 valid observations (88.7% of the possible reports). Using the VARCOMP procedure in SPSS (Version 25), within-person effects were estimated to account for the following variance percentages in emotion expression: joy (62.8%), excitement (71.0%), contentment (63.1%), pride (69.4%), gratitude (57.8%), anger (78.7%), sadness (77.5%), and anxiety (70.3%). Full descriptive statistics are reported in Tables S1–S3 in the online supplemental materials.

Data analysis plan. Analyses were carried out using multilevel modeling within SPSS 24.0 MIXED. All predictors were entered as fixed effects, with the Level 1 variable, within-person PPR (PPR_{within}), and the intercept modeled as random effects. We applied a first-order autoregressive model to correct for autocorrelation of residuals and an unstructured covariance matrix for the random effects.

Level 1 predictors were first grand-mean centered and then person-mean centered, so that the coefficients reflect daily deviations from each person's average. Following recommendations by Bolger and Laurenceau (2013), both within- and between-persons components of PPR were included for all level-one predictors to enhance the interpretability of models by ensuring that within-person results are not artifacts of individual differences in the average level of the variable (e.g., the tendency for some people to perceive higher levels of responsiveness in their target persons). All analyses also included the value of time (centered at the midpoint of the study, 7.5) to control for possible temporal effects over the 14 days of the study.

Preliminary analyses. Because emotional expression necessarily depends, in large part, on first experiencing emotion, we began by examining, as an exploratory step, daily experiences of the eight emotions. Results of these multilevel models are reported in Table 1. Higher daily PPR_{within} significantly predicted greater experiences of positive emotion. Specifically, the higher the level of PPR experienced on a given day, relative to one's average, the greater the reports of joy, $B = .26$, $t(86.77) = 6.26$, $p < .001$, excitement, $B = .29$, $t(55.95) = 6.50$, $p < .001$, contentment, $B = .28$, $t(219.05) = 5.31$, $p < .001$, gratitude, $B = .24$, $t(75.23) = 4.70$, $p < .001$, and pride, $B = .11$, $t(44.50) = 2.25$, $p < .05$.

Similarly, higher daily perceived responsiveness also significantly predicted lower levels of negative emotion experiences. That is, PPR_{within} significantly predicted lesser experiences of anger, $B = -.20$, $t(82.87) = -3.72$, $p < .001$, sadness, $B = -.24$, $t(59.05) = -4.72$, $p < .001$, and anxiety, $B = -.13$, $t(62.25) = -2.82$, $p < .01$.

Does perceived partner responsiveness predict emotional expression? To test the hypothesis that daily fluctuations in PPR predict greater levels of emotional expression to that partner, we added two additional controls. First, we controlled for the level of emotional experience on that day, because higher levels of experience presumably would mean people have more emotion to express. Second, we controlled for the prior day's value for the

Table 1

Perceived Partner Responsiveness (PPR) as a Predictor of Emotional Experience

Variable	B	SE	t	p	95% CI
Joy					
Intercept	4.79	.06	$t(155.37) = 78.07$	<.001	[4.67, 4.91]
$PPR_{between}$	.37	.07	$t(153.45) = 5.23$	<.001	[.23, .51]
PPR_{within}	.26	.04	$t(86.77) = 6.26$	<.001	[.18, .35]
Day	−.01	.01	$t(553.01) = -1.13$	.258	[−.02, .01]
Excitement					
Intercept	4.54	.06	$t(158.71) = 74.84$	<.001	[4.42, 4.66]
$PPR_{between}$	.25	.07	$t(154.82) = 3.61$	<.001	[.11, .39]
PPR_{within}	.29	.04	$t(55.95) = 6.50$	<.001	[.20, .38]
Day	−.02	.01	$t(478.09) = -2.52$	.012	[−.04, .00]
Contentment					
Intercept	4.76	.05	$t(256.23) = 105.74$	<.001	[4.68, 4.86]
$PPR_{between}$	.39	.05	$t(256.24) = 7.39$	<.001	[.28, .49]
PPR_{within}	.28	.05	$t(219.05) = 5.31$	<.001	[.20, .34]
Day	−.02	.01	$t(459.03) = -2.67$	.008	[−.04, −.01]
Gratitude					
Intercept	4.67	.07	$t(154.91) = 66.71$	<.001	[4.53, 4.81]
$PPR_{between}$	.48	.08	$t(154.75) = 6.01$	<.001	[.32, .64]
PPR_{within}	.24	.05	$t(75.23) = 4.70$	<.001	[.14, .34]
Day	.00	.01	$t(465.32) = -.39$	.698	[−.02, .01]
Pride					
Intercept	4.33	.07	$t(155.24) = 63.09$	<.001	[4.20, 4.47]
$PPR_{between}$	.24	.08	$t(153.28) = 3.07$	.003	[.09, .40]
PPR_{within}	.11	.05	$t(44.50) = 2.25$	.029	[.01, .21]
Day	−.00	.01	$t(380.72) = -.33$	.740	[−.02, .02]
Anger					
Intercept	4.09	.07	$t(165.33) = 59.77$	<.001	[3.95, 4.23]
$PPR_{between}$	−.10	.08	$t(164.08) = -1.29$	.199	[−.26, .05]
PPR_{within}	−.20	.05	$t(82.87) = -3.72$	<.001	[−.31, −.09]
Day	−.02	.01	$t(461.53) = -2.04$	.042	[−.04, −.00]
Sadness					
Intercept	3.98	.07	$t(156.15) = 55.49$	<.001	[3.84, 4.13]
$PPR_{between}$	.00	.08	$t(151.59) = .01$	.992	[−.16, .16]
PPR_{within}	−.24	.05	$t(59.05) = -4.72$	<.001	[−.34, −.14]
Day	−.01	.01	$t(466.80) = -.85$	.396	[−.03, .01]
Anxiety					
Intercept	4.47	.06	$t(154.87) = 69.07$	<.001	[4.34, 4.60]
$PPR_{between}$	.04	.08	$t(155.21) = .54$	.590	[−.11, .19]
PPR_{within}	−.13	.05	$t(62.25) = -2.82$	.006	[−.22, −.04]
Day	.00	.01	$t(486.81) = -.46$	.646	[−.02, .01]

Note. CI = confidence interval.

dependent variable so that we could focus on changes from the prior day's value to the current day (Reis, Gable, & Maniaci, 2014).

Daily expressions of the eight emotions were entered as outcome variables in all models. Entries where participants reported not experiencing that emotion on that day were excluded from this analysis. Results of these analyses are presented in Table 2. Controlling for the level of emotion experienced and prior day expression, higher daily PPR_{within} predicted significantly higher levels of expression of positive emotions. Specifically, higher daily PPR predicted significantly greater expression of joy, $B = .51$, $t(80.9) = 7.70$, $p < .001$, excitement, $B = .37$, $t(75.66) = 5.32$, $p < .001$, contentment, $B = .43$, $t(91.09) = 5.91$, $p < .001$, gratitude, $B = .35$, $t(69.66) = 4.90$, $p < .001$, and pride, $B = .30$, $t(70.66) = 3.73$, $p < .001$, to the target person.

Similarly, higher daily PPR also predicted significantly higher levels of expression of negative emotions. After controlling for the

Table 2

Perceived Partner Responsiveness (PPR) as a Predictor of Emotional Expression

Variable	B	SE	t	p	95% CI
Joy					
Intercept	3.23	.12	$t(265.03) = 27.19$	<.001	[3.00, 3.46]
PPR$_{between}$	.70	.11	$t(122.52) = 6.23$	<.001	[.48, .93]
PPR$_{within}$	.51	.07	$t(80.90) = 7.70$	<.001	[.38, .64]
Day	−.01	.01	$t(430.63) = −.84$	.401	[−.03, .01]
Prior day expression	.06	.02	$t(1435.05) = 3.13$	.002	[.02, .10]
Experienced joy	.59	.04	$t(1362.57) = 16.73$	<.001	[.52, .66]
Excitement					
Intercept	2.90	.11	$t(254.71) = 25.37$	<.001	[2.67, 3.12]
PPR$_{between}$	.55	.11	$t(123.17) = 4.98$	<.001	[.33, .76]
PPR$_{within}$	.37	.07	$t(75.66) = 5.32$	<.001	[.23, .50]
Day	.00	.01	$t(383.91) = −.07$	.945	[−.02, .02]
Prior day expression	.05	.02	$t(1164.14) = 2.52$	.012	[.01, .09]
Experienced excitement	.71	.04	$t(1151.57) = 19.96$	<.001	[.64, .78]
Contentment					
Intercept	2.98	.11	$t(266.88) = 26.03$	<.001	[2.75, 3.20]
PPR$_{between}$	.76	.11	$t(130.79) = 6.90$	<.001	[.54, .98]
PPR$_{within}$	.43	.07	$t(91.09) = 5.91$	<.001	[.29, .57]
Day	.00	.01	$t(400.87) = .32$	.749	[−.02, .02]
Prior day expression	.06	.02	$t(1469.87) = 2.63$	.009	[.01, .10]
Experienced contentment	.54	.03	$t(1364.68) = 15.51$	<.001	[.47, .61]
Gratitude					
Intercept	2.34	.11	$t(219.14) = 20.38$	<.001	[2.11, 2.56]
PPR$_{between}$	.70	.11	$t(103.94) = 6.55$	<.001	[.49, .92]
PPR$_{within}$	.35	.07	$t(69.66) = 4.90$	<.001	[.21, .49]
Day	−.01	.01	$t(436.59) = −.52$	.603	[−.03, .02]
Prior day expression	.20	.02	$t(1070.84) = 8.81$	<.001	[.16, .25]
Experienced gratitude	.56	.04	$t(1071.59) = 14.15$	<.001	[.48, .63]
Pride					
Intercept	2.25	.12	$t(214.84) = 18.67$	<.001	[2.01, 2.49]
PPR$_{between}$	.51	.12	$t(121.63) = 4.36$	<.001	[.28, .74]
PPR$_{within}$	.29	.08	$t(55.52) = 3.73$	<.001	[.13, .45]
Day	−.01	.01	$t(324.65) = −.54$	.590	[−.03, .02]
Prior day expression	.07	.02	$t(910.09) = 2.66$	.008	[.02, .11]
Experienced pride	.57	.04	$t(877.66) = 14.33$	<.001	[.49, .64]
Anger					
Intercept	2.18	.11	$t(271.36) = 19.75$	<.001	[1.96, 2.40]
PPR$_{between}$	.43	.10	$t(122.90) = 4.17$	<.001	[.23, .63]
PPR$_{within}$	.30	.08	$t(70.66) = 3.66$	<.001	[.14, .46]
Day	.00	.01	$t(396.90) = .04$	.968	[−.03, .03]
Prior day expression	.13	.03	$t(942.65) = 5.00$	<.001	[.08, .18]
Experienced anger	.52	.04	$t(941.53) = 12.8$	<.001	[.44, .61]
Sadness					
Intercept	2.18	.11	$t(245.29) = 19.23$	<.001	[1.96, 2.40]
PPR$_{between}$	.52	.11	$t(124.10) = 4.81$	<.001	[.31, .74]
PPR$_{within}$	.33	.08	$t(67.31) = 4.11$	<.001	[.17, .49]
Day	−.03	.01	$t(276.68) = −1.79$	.075	[−.05, .00]
Prior day expression	.07	.03	$t(951.14) = 2.42$	.016	[.01, .12]
Experienced sadness	.47	.04	$t(924.35) = 12.40$	<.001	[.40, .54]
Anxiety					
Intercept	2.44	.12	$t(222.61) = 20.31$	<.001	[2.20, 2.68]
PPR$_{between}$	.41	.12	$t(118.45) = 3.51$	<.001	[.18, .64]
PPR$_{within}$	.26	.07	$t(82.92) = 3.67$	<.001	[.12, .41]
Day	−.01	.01	$t(341.73) = −.82$	.413	[−.04, .01]
Prior day expression	.09	.03	$t(1153.78) = 3.65$	<.001	[.04, .14]
Experienced anxiety	.40	.04	$t(1101.41) = 10.49$	<.001	[.33, .48]

Note. CI = confidence interval.

level of emotion experienced and prior day expression, higher perceived responsiveness predicted significantly greater expression of anger, $B = .30$, $t(70.66) = 3.66$, $p < .001$, sadness, $B = .33$, $t(67.31) = 4.11$, $p < .001$, and anxiety, $B = .26$, $t(82.92) = 3.67$, $p < .001$, to the target person.

The same multilevel models also included terms representing between-partner variations in perceived responsiveness (i.e., the average level of responsiveness reported by all participants across the 14 days, grand-mean centered). Table 2 shows that these effects yielded significant results for all eight emotion terms,

indicating that participants who reported higher average levels of perceived responsiveness from a partner also reported higher average levels of emotional expression toward that partner.

We repeated these analyses controlling for gender and the baseline measures (relationship satisfaction, suppression, and PPR). These variables were first added one by one in the analysis, and then added simultaneously. The pattern of results remained the same and in no case did a significant result become nonsignificant. For exploratory purposes, these baseline variables also were tested as potential moderators; across 32 analyses, there was no significant moderation of the association between PPR and emotion expression.

In sum, our hypothesis was supported for all emotion variables: On days participants perceived greater responsiveness from their target person, they also were more likely to express to this person their emotions of joy, excitement, contentment, pride, gratitude, anger, anxiety, and sadness.

Daily stress as a moderator of anxiety expression. As discussed earlier, we reasoned that daily stress might moderate the association between PPR and anxiety expression (consistent with the main hypothesis to be tested in Study 2).[6] We expected that the association between daily PPR and anxiety expression would be moderated by daily stress, such that people who perceived their target person to be responsive would be more likely to express higher anxiety on high-stress days (days when responsiveness is more desired), but not on low-stress days. To investigate this hypothesis, daily stress (person-mean centered), and a product term representing the interaction between PPR and daily stress were entered into the analysis described earlier. As predicted, the PPR $\times$ Daily Stress interaction was significant ($p < .05$). Full results appear in Table 3. We calculated simple slopes for PPR at conditional values of 1 SD above and 1 SD below the mean on daily stress. These slopes revealed that, at high levels of daily stress, PPR was positively and significantly related to daily anxiety expression, $B = .41$, $t(156.15) = 4.99$, $p < .001$. In other words, on relatively high stress days, if their target person was perceived as responsive, participants expressed more anxiety to him or her. At low levels of daily stress, PPR was not significantly predictive of daily anxiety expression, $B = -.11$, $t(724.79) = -1.08$, $p = .281$ (see Figure 1). In other words, on days when participants reported a low level of stress, whether their target person was perceived as responsive did not influence the level of anxiety expressed to the target person. As in the earlier analyses, after adding the baseline measures as control variables, all results reported above remained significant.

Brief Discussion of Study 1 and Introduction to Study 2

Study 1 demonstrated that people are more willing to express their felt emotions when they perceive their partners are responsive to their needs, or, in other words, when the perceived risks of emotional expression are lower while the perceived likelihood of receiving support is higher. This finding was obtained at both the between-person and within-person levels. With regard to the former, our design does not allow us to distinguish between a trait-level individual difference versus dyad-level differences, inasmuch as only one relationship was studied per participant. At the within-person level, it indicates that everyday variations in the ebb and flow of PPR are associated with corresponding variations in expressing all eight of the emotions investigated. Of course, we cannot determine from this analysis whether causality flows from responsiveness to emotion expression or the reverse (or both). We address this concern in Study 2.

In Study 2 we used an experimental paradigm to examine the association between PPR and emotional expression in an intrinsically anxiety-provoking situation. In our theorizing, and consistent with the moderation effect obtained in Study 1, when people experience anxiety, PPR should influence whether they wish to express it to that partner. Therefore, Study 2 included a manipulation to vary the level of PPR and then elicited anxiety using a well-known stress-induction paradigm, the Trier Social Stress Test (TSST; Kudielka, Hellhammer, & Kirschbaum, 2007). Prior to the Trier task, but after it had been described, participants were asked to e-mail their partners, and these e-mails were coded for expressions of anxiety and support-seeking (because the desire for support underlies expression of anxiety). We tested the same hypothesis here as in Study 1: When participants are stressed, high PPR would lead to higher anxiety expression, whereas low PPR would lead to lower anxiety expression.

Study 2 also included questions about support seeking and closeness. Although these are not expressions of emotion, the former is one reason why people express emotion (i.e., to ask for help with something anxiety-provoking) and the latter is something people commonly experience after expressing emotion to a partner (Clark & Aragon, 2013).

Study 2

Method

Participants. A power analysis anticipating a medium effect size of $d = 0.50$ for each pairwise mean comparison and target power level of 0.80 indicated recruiting 159 participants, or 53 per condition. At the conclusion of the spring semester, we had recruited 146 participants and decided to stop data collection at that point.

Participants were involved in dating relationships of at least 3 months duration (range = 4–80 months; $M_{length} = 18.48$ months, $SD = 16.42$). Of the 146 (78% women) participants, all were at least 18 years old (range = 18–25, $M_{age} = 19.98$ years, $SD = 1.25$). Seventy-three participants (50%) were White/Caucasian, 53 (36%) were Asian, 6 (4%) were Black/African American, 9 (6%) identified as another race, and five (3%) chose "prefer not to say." An additional 11 (8%) participants were Hispanic/Latino. Data from one participant were excluded because her e-mail was in her native language (Chinese), instead of English, and could not be coded by our raters, leaving a final sample of 145 participants.

Procedure. This research was approved by the University of Rochester Research Subjects Review Board. Participants were

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[6] When examining the interaction between perceived partner responsiveness and daily stress, anxiety expression as the outcome variable was an a priori hypothesis. For control purposes, we also tested interactions between PPR and daily stress in predicting expression of the other seven emotions (joy, excitement, contentment, gratitude, pride, anger, and sadness). This interaction did not significantly predict emotional expression for any of these emotions.

Table 3
*Daily Expression of Anxiety as a Function of Perceived Partner Responsiveness (PPR),
Moderated by Daily Stress Level*

Effect	B	SE	t	p	95% CI
Intercept	2.60	.12	$t(240.09) = 20.95$	<.001	[2.35, 2.84]
PPR$_{between}$	.42	.12	$t(121.90) = 3.55$	<.001	[.19, .66]
PPR$_{within}$	.26	.07	$t(83.57) = 3.63$	<.001	[.12, .41]
Daily stress	.14	.04	$t(1098.80) = 3.60$	<.001	[.06, .22]
PPR$_{between}$ × Daily Stress	−.01	.04	$t(960.84) = −.35$	.726	[−.09, .06]
PPR$_{within}$ × Daily Stress	.09	.04	$t(557.02) = 2.16$	.031	[.01, .18]
Day	−.01	.01	$t(321.22) = −.99$	.332	[−.04, .01]
Prior day expression	.05	.03	$t(1152.77) = 2.11$	.035	[.00, .10]
Experienced anxiety	.33	.04	$t(1154.10) = 7.48$	<.001	[.24, .41]

Note. CI = confidence interval.

recruited from the department participant pool for a study on how relationships influence performance on verbal behavior tasks. Upon arriving at the laboratory, participants were told that the study would take 30 min, during which they would be asked to complete a series of questions about their romantic relationships and then perform a verbal task. Before coming to the lab, participants filled out a preliminary survey.

Experimental manipulation. Upon arrival, participants were given an ease of recall task designed to manipulate PPR, adapted from Lemay, Clark, and Feeney (2007) by Reis, Lee, O'Keefe, and Clark (2018). Participants were assigned randomly to one of three conditions. In the high-responsive condition, they were asked to think of two ways in which their romantic partner had communicated responsiveness in the past week. Specifically, they were asked to list two kind or considerate things their partner had done to help them in the past week. The ease of recalling two examples should lead participants to perceive their partners as highly responsive, inasmuch as such acts are strongly correlated with responsiveness (Reis, Maniaci, & Rogge, 2014). In the low-responsive condition, participants were asked to think of 10 kind or considerate things their partner had done for them in the past week. This manipulation derives from research showing that the relative accessibility of experiences (i.e., the ease/difficulty of recall) influences subsequent judgments (Schwarz, 1998). The logic is that it is easy to recall two kind things that a partner has done, which should activate feelings of partner responsiveness. However, recalling 10 examples ought to be more difficult and, because the

instructions imply that they should be able to do so, doubts about a partner's responsiveness should be primed, leading participants to perceive their partner as not very responsive. In the control condition, participants were asked to list five things in their romantic partner's dorm room, which was designed to be a nonvalenced recall task related to thinking about their partners.

Anxiety induction. Following the perceived responsiveness manipulation, participants were exposed to an anxiety induction procedure, the TSST (Kudielka et al., 2007). The TSST is a motivated performance task that involves high levels of social-evaluative threat. Anticipation of performing the TSST has been demonstrated to induce stress and anxiety in research participants (e.g., Jamieson, Nock, & Mendes, 2012). Participants were told they would give a 5-min speech about their personal strengths and weaknesses for obtaining their dream job and that this speech would be observed and recorded to be evaluated by experts. Prior to the speech, participants were asked to send an e-mail to their romantic partners describing their feelings about the upcoming speech. The experimenter then opened the laboratory e-mail account and typed in the partner's e-mail address, which participants had provided in the preassessment. Participants were allowed as much time as needed to write. When they were finished, the experimenter sent the e-mail to the participant's partner. A verbatim copy of the instructions is provided in the online supplemental materials.

TSST. Participants gave the 5-min speech after sending the e-mail. The first minute of their speech was recorded using a digital camera to assess their initial level of anxiety starting the task. The videos were coded by two independent raters on two dimensions, each one rated on a 1–5 scale: (a) participants' performance on the speech task, $r = .50$, $p < .01$, and (b) displays of anxiety during the task, $r = .51$, $p < .01$. These ratings were then averaged.

Debriefing. Once participants had finished the experimental procedure, they received a funnel debriefing in which they were probed for suspicion about the manipulation and procedure. No participant voiced suspicion regarding the purpose of the manipulation or the e-mail.

Measures.

Preliminary survey. The preliminary survey, which was administered online prior to the experimental session, included three validated measures that are described below. Participants also
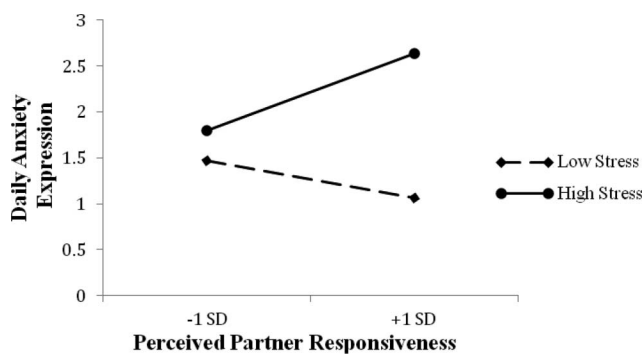

Figure 1. Daily expression of anxiety as a function of perceived partner responsiveness, moderated by daily stress level (Study 1).

indicated the length of their relationship and were asked to provide their romantic partner's e-mail address.

Perceived partner responsiveness (PPR). PPR was assessed using an 18-item scale (Reis, Crasta, Rogge, Maniaci, & Carmichael, 2017). A sample item reads, "My partner usually is responsive to my needs." Reliability for this measure was α = .95.

Emotion regulation. Participants' baseline habitual use of suppression as an emotion regulation strategy was assessed using the ERQ (Gross & John, 2003). The ERQ includes a four-item suppression subscale (e.g., "I keep my emotions to myself"). Reliability was α = .76.

Relationship satisfaction. Participants' baseline relationship satisfaction was assessed using the 16-item version of the Couples Satisfaction Index (Funk & Rogge, 2007). A sample item is "My relationship with my partner makes me happy." Reliability was α = .94.

Operationalization of emotional expression.

E-mail coding. The e-mails participants sent to their romantic partners were analyzed with Linguistic Inquiry and Word Count (LIWC; Pennebaker, Francis, & Booth, 2001). LIWC is a computerized text analysis program that counts the frequency of words in given categories, and can be used to assess emotional expression by calculating the percentage of emotion words in a text (Kahn, Tobin, Massey, & Anderson, 2007). LIWC has a validated dictionary of positive and negative emotion words (i.e., words that reflect positive and negative feelings in general), as well as specific emotion words representing anxiety or fear (e.g., "nervous" and "afraid") and anger (e.g., "hate" and "pissed"; Pennebaker, Boyd, Jordan, & Blackburn, 2015). We used LIWC to tabulate the total number of words used, the percentage of negative emotion words, the percentage of anxiety/fear words, and, for control purposes (because our focus was the specific emotion of anxiety, the emotion that the Trier task is designed to elicit), the percentage of words representing anger and sadness. See Table S4 in the online supplemental materials for descriptive statistics.

Rater coding. Three trained research assistants who were blind to participants' condition independently coded e-mails for three constructs: (a) anxiety expression (intraclass correlation coefficient [ICC] = .97, (b) support seeking (ICC = .96), and (c) expressed closeness (ICC = .96). Ratings were made on 5-point scales ranging from 1 (*not at all*) to 5 (*a great deal*), and averaged across the three raters. When coding expressed anxiety, raters focused on explicit levels of stated anxiety (e.g., direct use of emotion words related to anxiety, nervousness, and fear) and also general descriptions of anxiety (e.g., remarks about the difficulty of the task, or statements of uncertainty about the task). To code support seeking, raters looked for text that directly sought help from the partner (e.g., asking what they should do) as well as indications that participants were using their partner as a source of comfort (e.g., wishing the partner could be there to make them feel better). When coding expressed closeness, raters focused on direct expressions of affection and closeness as well as implied closeness (e.g., use of nicknames and emoji). See Appendix C for the complete coding instructions and Table S5 for descriptive statistics (both in the online supplemental materials).

Results

All analyses were performed with dummy-coded variables in a regression framework. Two dummy coded variables were entered simultaneously, with the control group serving as the reference (dummy) group. Thus, the first dummy code compares the responsive condition with the control condition, whereas the second dummy code contrasts the unresponsive condition with control condition (Cohen, Cohen, West, & Aiken, 2003). Additional post hoc tests compared the responsive and unresponsive conditions to each other. We did not include gender as a factor in these analyses, because of the small number of men in each condition. However, subsequent analyses of the key variables revealed no significant gender main effects or interactions.

Perceived difficulty of the responsiveness manipulation. To check on our assumption that participants would experience more difficulty recalling 10 considerate acts than two, we asked participants to rate the difficulty of the recall task on a 1–7 scale. In the responsive condition the task was rated as significantly less difficult (M = 1.91) than in the control condition (M = 2.44), $F(1, 142) = 4.35$, $p = .04$, squared semi-partial correlation (sr^2) = .025. As intended, in the unresponsive condition the task was rated as significantly more difficult (M = 3.22) than in the control condition, $F(1, 142) = 9.23$, $p = .003$, $sr^2 = .053$. It is noteworthy, however, that the mean score in the unresponsive condition was lower than the scale midpoint (4, on the 1–7 scale that we used), suggesting that participants did not have or would not admit to having much difficulty generating 10 considerate behaviors. A post hoc Fisher's least significant difference test indicated that the ratings of the task in the high and low responsiveness conditions also differed significantly, $p < .001$.

Emotional expression analyzed by LIWC. Prior to testing our main hypothesis about the expression of anxiety, we examined two general features of the e-mail messages. For overall word count, neither dummy variable was significant, both $Fs(1, 142) < 1$, $ps > .72$. Next, we examined the percentage of negative emotion words. Neither dummy variable was significant, although there was a slight tendency for participants in the high PPR condition to use a larger percentage of negative emotion words than participants in the control condition, $F(1, 142) = 2.03$, $p = .16$, $sr^2 = .014$. The unresponsive-control comparison did not approach significance, $F(1, 142) = 0.34$, $p = .56$, $sr^2 = .002$. A post hoc Fisher's least significant difference test indicated that the proportion of negative emotion words in the high and low responsiveness conditions differed significantly, $p = .03$. Means for this analysis (and all subsequent tests) are reported in Table 4.

To directly test our hypothesis about the expression of anxiety, we examined the effect of the PPR manipulation on the percentage of anxiety words contained in participants' e-mails. The responsive-control comparison was not significant, $F(1, 142) = 3.26$, $p = .07$, $sr^2 = .022$, although, as Table 4 shows, participants used more anxiety-related words in the responsive condition than in the control condition. There was no difference between the unresponsive and control conditions, $F(1, 142) = 0.00$, $p = .98$, $sr^2 = .000$. A post hoc Fisher's least significant difference test indicated that participants used more anxiety-related words in the high than in the low responsiveness condition, $p = .05$. As expected, there were no significant differences for the percentage of

Table 4
Values for Key Dependent Variables in Study 2

Variable	High PPR (n = 55)	Control (n = 39)	Low PPR (n = 51)
Percentage of negative emotion words			
M	2.19$_a$	1.85$_{a,b}$	1.70$_b$
SD	1.13	1.33	1.04
95% CI	[1.89, 2.50]	[1.42, 2.28]	[1.41, 2.00]
Percentage of anxiety words			
M	.67$_a$	.41$_{a,b}$	.41$_b$
SD	.72	.65	.66
95% CI	[.47, .86]	[.20, .62]	[.22, .59]
Coded anxiety			
M	2.68$_a$	2.15$_b$	2.20$_b$
SD	1.21	1.25	1.17
95% CI	[2.35, 3.00]	[1.77, 2.59]	[1.87, 2.53]
Coded support seeking			
M	2.47$_a$	1.54$_b$	1.64$_b$
SD	1.12	.84	.71
95% CI	[2.16, 2.77]	[1.26, 1.82]	[1.44, 1.84]
Coded closeness			
M	3.08$_a$	2.66$_{a,b}$	2.66$_b$
SD	.99	1.06	1.19
95% CI	[2.81, 3.35]	[2.31, 3.01]	[2.32, 3.00]

Note. PPR = perceived partner responsiveness; CI = confidence interval. Means sharing a subscript do not differ significantly from each other in dummy code (comparisons to control) or Fisher's least significant difference tests (responsive vs. unresponsive).

anger words, both Fs$(1, 142) < .04$, ps $> .83$, nor sadness words, Fs$(1, 142) < .35$, ps $> .55$.

Emotional expression in coded variables. Next, we examined coders' assessment of the e-mails sent by participants.

Anxiety. Coded anxiety differed significantly between the responsive and control conditions, $F(1, 142) = 4.33$, $p = .04$, $sr^2 = .029$. As Table 4 shows, coders rated participants in the responsive condition as expressing more anxiety than participants in the control condition. The difference between the unresponsive and control conditions was not significant, $F(1, 142) = 0.03$, $p = .87$, $sr^2 = .000$. A post hoc Fisher's least significant difference test indicated that coded anxiety differed significantly between the high and low responsiveness conditions, $p = .04$.

Support seeking. There was a significant difference in coded levels of support-seeking in the responsive and control conditions, $F(1, 142) = 22.62$, $p < .001$, $sr^2 = .132$. As Table 4 shows, participants in the responsive condition expressed more desire for support than participants in the control condition. The difference between the unresponsive and control conditions was not significant, $F(1, 142) = 0.24$, $p = .63$, $sr^2 = .001$. A post hoc Fisher's least significant difference test indicated that coded levels of support-seeking differed significantly between the high and low responsiveness conditions, $p < .001$.

Closeness. Participants in the responsive condition expressed higher closeness than participants in the control condition but the difference was not significant, $F(1, 142) = 3.38$, $p = .07$, $sr^2 = .023$. The difference between the unresponsive and control conditions also was not significant, $F(1, 142) = 0.00$, $p = .99$, $sr^2 = .000$. A post hoc Fisher's least significant difference test indicated

that coded levels of closeness differed significantly between the high and low responsiveness conditions, $p = .05$.

Additional exploratory analyses.

Trier Social Stress Test. Videos recorded during the TSST were rated for performance and anxiety by two independent raters. On a 1–5 scale, mean ratings were 3.90 ($SD = .87$) for performance and 2.06 ($SD = .80$) for anxiety. Regression analyses similar to those reported above did not show performance differences, both Fs$(1, 127)$[7] < 1.17, ps $> .28$. Although participants in the responsive condition displayed higher levels of anxiety ($M = 2.24$) than control participants ($M = 1.93$), the difference was not significant, $F(1, 127) = 3.15$, $p = .08$, $sr^2 = .032$. Ratings of anxiety in the control and unresponsive ($M = 1.96$) conditions did not differ, $F(1, 128) = 0.03$, $p = .87$, $sr^2 = .002$. It is both plausible and consistent with our theorizing that the act of expressing anxiety in their e-mails may have carried over to the Trier task for participants in the responsive condition.

Possible covariates. We also tested for the possibility that our results might have been due to several variables that, conceptually, could be relevant to participants' willingness to express their emotional state to their partners. These were relationship length, relationship satisfaction, baseline levels of PPR, and emotion suppression (because trait levels of suppression might have led some participants to withhold describing their feelings about the Trier task in their e-mails; Cameron & Overall, 2018). For exploratory purposes, we therefore reran the main analyses using these measures, collected in the baseline assessment, as covariates. In no instance did the findings change, although in a few of these analyses, the reported nonsignificant effects that had approached significance became significant (likely because error variance was reduced; see Tables S6–S13 in the online supplemental materials for full results). We also considered the possibility that one of these variables might moderate the effects of experimental conditions. However, no consistent pattern emerged.

Brief Discussion of Study 2

In Study 2, we examined emotional expression in messages sent to romantic partners, after manipulating perceptions of partner responsiveness in an anxiety-provoking context. Compared to control participants, participants in the high-responsiveness condition demonstrated significantly higher levels of anxiety and support-seeking, used more anxiety words in their messages, and expressed nonsignificantly higher levels of closeness to their partner. Anger and sadness words did not differ across conditions, indicating that these emotional expressions were specifically targeted at regulating the anxiety created by the Trier task. This result supports our theorizing about a causal link from PPR to emotional expression.

There were no significant differences in emotional expression between the control and low-responsiveness conditions. Although this may indicate that low levels of responsiveness are not sufficient to diminish anxiety-expression and support-seeking in a context like this one, we think it also may mean that the manipulation was too weak to produce the desired effects. Recall that the mean rating of the difficulty of listing 10 responsive partner behaviors from the past week was only 3.22 on a 1–7 scale, suggesting that participants found this listing task not to be very

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[7] Due to equipment problems, 15 videotapes could not be scored.

difficult. Indeed, it is possible that the listing task reduced PPR for some participants but not for others (or may even have increased it). If so, it seems unlikely that, overall, relationship doubts would have been primed more than trivially, as we assumed based on prior work (Schwarz, 1998). Even so, the significant comparisons between the high and low responsiveness conditions indicates that some level of doubt must have been created by recalling 10 behaviors, relative to recalling only two. Still, it will be informative to replicate this study with a stronger induction of perceived unresponsiveness.

General Discussion

In two methodologically distinct studies—a daily diary study and a laboratory experiment—we have shown that perceiving one's relationship partner to be responsive to oneself led to higher levels of emotional expression. This overall finding emerged for both positive and negative emotions and across different types of close relationships. It held when we controlled for gender and several other relationship features, suggesting that this association reflects a basic process of interpersonal emotion regulation.

This research contributes to the literature in three main ways. First, whereas prior research has focused on people's willingness to express emotion, which may or may not lead to actual behavior, these studies examined actual emotion expression both as self-reported in natural settings (Study 1) and as enacted in e-mail (Study 2). Second, prior studies have been correlational and conducted at a single time point, limiting causal inferences. Study 2 was an experiment, which supported our theorizing that PPR causally leads to greater emotional expression. (Of course, the reverse direction, that emotional expression provides an opportunity for partners to display responsiveness may also be valid, which would be consistent with self-disclosure research, but it is not applicable for explaining the results of Study 2.) The prospective design of Study 1, while not definitive, also supports this reasoning.

Third, and most conceptually, these studies provide a key link between the emotion and relationship literatures. Although it is well-recognized that emotions are most often experienced and expressed in relationship contexts, few studies speak to the features of relationships that are most central. Prior work has established that people say they are more willing to be emotionally open in relationships characterized by higher communal strength than in other relationships (Clark & Aragon, 2013; Clark et al., 2001; Von Culin et al., 2018), but it was unclear what specific relationship process was responsible. The present studies indicate that PPR—believing that partners are understanding, validating, and caring—represents one such mechanism (Reis & Clark, 2013). Opening up emotionally is inherently risky—partners often react supportively but they may also be inattentive, selfish, belittling, rejecting, or exploitative. Believing that a partner understands and respects what is important to the self and feels responsible for one's welfare allows potential emotion-expressers to anticipate a well-intentioned and reasonably knowledgeable response, thereby justifying and reducing the risk. This judgment is particularly important in close relationships, where partners must continually weigh the benefits and risks of interdependence versus self-protection (Murray et al., 2006).

The construct of PPR overlaps in an important way with attachment security. Existing evidence consistently indicates that secure individuals generally perceive their partners to be more responsive than either anxious-ambivalent or avoidant individuals do (see Mikulincer & Shaver, 2016, for a review). In that sense, our results provide evidence for one key process that can help explain how attachment security facilitates emotional well-being in close relationships. Our results also provide specific evidence for the process implicated in an earlier finding by Simpson, Rholes, and Nelligan (1992), who found, also in established couples, that, when anticipating an anxiety-provoking task, women high in avoidant attachment were less willing to seek support from their partners. That is, women high in avoidance may have been less willing to seek support from their partners because they see them as less responsive. However, individual differences in attachment orientations cannot serve as an alternative explanation for our findings, inasmuch as Study 1 examined within-person fluctuations and Study 2 manipulated perceived responsiveness. But insofar as attachment theory provides a rich theoretical account of normative processes, it will be important to further establish the role of PPR in these processes.

In a more general sense, our findings begin to integrate Gross (2015) extended process model of emotion regulation and Murray et al.'s (2006) risk regulation model. Specifically, these findings rely on principles from the latter to delineate a key process in the former. Gross's model emphasizes the social context of many emotion regulation strategies. When interacting partners express emotions, or when they respond to each other's expressions of emotion, they engage in a dynamic process of iteratively adjusting their behavior according to their anticipation or perception of the other's reaction. Our findings demonstrate that these adjustments, which are based on each person's needs and goals, as well as their relationship history, are likely to be more adaptive when partners are perceived as responsive and less adaptive when they are perceived as unresponsive. Thus, in our view the extended model of emotion regulation points directly at the key role of the expresser-recipient relationship, and, in particular, supported by our findings, to appraisals of a partner's responsiveness. These findings illustrate how individuals evaluate their partner's care and concern when deciding to express emotions to the partner. We find that emotional openness depends on anticipating or perceiving that partners will be responsive when people convey their emotional states—or, as Murray et al. put it, when the potential risk seems worth the potential reward. Of course, our research was solely concerned with one emotion regulation strategy—expression to relationship partners. As a next step, it will be useful to explore the impact of PPR on letting partners help one regulate emotions in other ways, for example, through reappraisal or situation selection.

Our work also contributes to a growing body of evidence about the importance of responsiveness for health and well-being. Findings have been accumulating that robustly link PPR to health and well-being (see reviews by Slatcher & Selcuk, 2017, and Stanton, Slatcher, & Reis, in press), and emotional mechanisms have been proposed as one underlying explanation (e.g., Farrell & Simpson, 2017; Slatcher & Selcuk, 2017). For example, Selcuk, Stanton, Slatcher, and Ong (2017) found that PPR predicted better sleep quality, primarily through the mechanism of lowering anxiety. Our studies demonstrate that PPR encourages people to be emotionally open toward others, including significant others. By opening up about their emotions, individuals can rely on others for coping assistance (Rimé, 2007) while simultaneously averting potentially maladaptive effects of emo-

tion suppression (Gross, 2002). As for positive emotions, emotional expressiveness helps build social bonds (Rimé, 2009). In this manner, PPR may provide individuals with a psychological foundation for developing and utilizing potentially valuable social resources in flexible and effective emotion regulation.

Limitations

Our conclusions should be interpreted in the light of several limitations. First, both studies were conducted with college students, most of whose relationships were relatively short-lived. It will be important to determine whether the same processes apply to older persons and longstanding relationships. Second, we have not determined the extent to which perceived responsiveness depends on the recipient accurately perceiving the expresser's emotion and then actually being responsive. Research has shown that reports of perceived and enacted responsiveness can diverge, sometimes substantially so (Lemay et al., 2007; Reis et al., 2017). Receiving emotion expressions based on the emotional person's accurate perception of one's responsiveness may be a different experience than receiving emotion expressions that are based on biased perceptions of one's responsiveness. Although emotion is expressed in both cases, unfounded perceived responsiveness may nonetheless elicit actual responsiveness as a self-fulfilling prophecy. Future research is needed to more fully integrate both partners' perspectives on this process and both partners' behavior.

A third limitation is that this research was conducted in a Western cultural context, where emotional expression is generally encouraged. It will be important to see if the same results are obtained in other cultural contexts. For example, in contexts where emotional expression is discouraged, such as many East Asian cultures, perceived responsiveness may play a smaller role in encouraging emotional expression (Markus & Kitayama, 2001; Soto, Perez, Kim, Lee, & Minnick, 2011). Also, we did not include a manipulation check directly asking participants about responsiveness, and it may be that the results reflect recall difficulty rather than responsiveness per se.[8] Finally, these studies did not examine the effectiveness of expressing emotions as a regulatory strategy, nor did they distinguish among the stages in the emotion-regulation process when expression of emotion occurs.

Conclusion

In two studies using diverse methods, evidence for PPR eliciting enhanced emotion expression was found. In the light of the well-established role of emotional expression in eliciting support within close relationships, as well as in predicting relationship growth and intimacy across time, these findings have both practical and theoretical implications. Additional questions regarding the link between partner responsiveness and emotion expressiveness remain. For instance, must potential emotion expressers be explicitly aware of their partner's responsiveness for emotional expression to be facilitated? Or might subtle, outside-of-awareness signs of responsiveness (attentiveness, leaning toward a person, nodding) be sufficient? Just how does the presence of a responsive partner influence an emotional person's intrapersonal emotion regulation—will intrapersonal or interpersonal strategies be attempted first or will some blend of own- and partner-regulation strategies occur simultaneously? The present research should help researchers delve more deeply into an understanding of emotion regulation as a dyadic process, by identifying PPR as a key underlying interpersonal mechanism.

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[8] However, in support of our reasoning, in two subsequent studies (Itzchakov & Reis, 2019), the identical manipulation produced strong differences in ratings of perceived partner responsiveness, as intended.

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