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INTERPERSONAL RELATIONS AND GROUP PROCESSES

Interpersonal Emotion Regulation: Implications for Affiliation, Perceived Support, Relationships, and Well-Being

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People often recruit social resources to manage their emotions, a phenomenon known as *interpersonal emotion regulation* (IER). Despite its importance, IER's psychological structure remains poorly understood. We propose that two key dimensions describe IER: (a) individuals' *tendency* to pursue IER in response to emotional events, and (b) the *efficacy* with which they perceive IER improves their emotional lives. To probe these dimensions, we developed the Interpersonal Regulation Questionnaire (IRQ), a valid and reliable measure of individual differences in IER. Factor analyses of participants' responses confirmed tendency and efficacy as independent dimensions of IER (Study 1; $N = 285$), and demonstrated independence between how individuals engage with IER in response to negative, versus positive, emotion. In Study 2 ($N = 347$), we found that individuals high in IER tendency and efficacy are more emotionally expressive, empathetic, and socially connected. Two subsequent studies highlighted behavioral consequences of IER dimensions: people high in IER *tendency* sought out others more often following experimentally induced emotion (Study 3; $N = 400$), and individuals high in IER *efficacy* benefitted more from social support after real-world emotional events (Study 4; $N = 787$). Finally, a field study of social networks in freshman dormitories revealed that individuals high in IER tendency and efficacy developed more supportive relationships during the first year of college (Study 5; $N = 193$). These data (a) identify distinct dimensions underlying IER, (b) demonstrate that these dimensions can be stably measured and separated from related constructs, and (c) reveal their implications for relationships and well-being.

Keywords: emotion regulation, individual differences, interpersonal emotion regulation, relationships, social support

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Shortly after she learned that her company was downsizing, Charlene lost her job. Consumed with fear for her future prospects, Charlene immediately sought out close friends with whom to share her bad news. After talking with them, Charlene felt buoyed by her friends' support, and she returned home with a more hopeful outlook.

Every day, people like Charlene successfully manage their emotions by turning to others for help. This represents a distinct, but poorly understood type of *emotion regulation* (ER). People engage in ER, attempts to change the their emotions in a goal-directed manner (Gross, 1998), using an impressive arsenal of strategies. For example, they may distract themselves from a distressing event or attempt to change its meaning through reappraisal (Ayduk & Kross, 2010; Goldin, McRae, Ramel, & Gross, 2008; McRae et al., 2010). However, like Charlene, individuals often look to others for help in regulating their emotions.

When people pursue emotional goals through social processes, they engage in *interpersonal* emotion regulation (IER; Butler, 2015; Dixon-Gordon, Bernecker, & Christensen, 2015; Hofmann, 2014; Parkinson & Manstead, 2015; Zaki & Williams, 2013). IER is a widespread and vital form of emotion regulation. Under stressful circumstances, people commonly seek out the company of others and disclose their emotional experiences (Rimé, 2009; Schachter, 1959). Supportive others can then help individuals to manage their emotions. IER may thus help to explain how relationships bolster physical and mental health (Hawkley & Cacioppo, 2010). Specifically, individuals manage their emotions by drawing support from their social networks.

Despite its ubiquity and importance for health, the psychological structure of IER remains poorly understood. Emerging theories have made important steps in this direction (Niven, Totterdell, &

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Data from all experiments, analysis scripts, plots, and task code are available on GitHub: https://github.com/wcwill/InterpersonalRegulationQuestionnaire.

These results were previously presented as symposium talks at the 2015 Annual Meeting of the Association for Psychological Science in New York, NY, and at the 2016 Annual Meeting of the Society for Personality and Social Psychology in San Diego, CA.

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Holman, 2009; Reeck, Ames, & Ochsner, 2016; Zaki & Williams, 2013). However, scientists still know relatively little about *how often* people use IER or *how well* it works in supporting their emotional goals. These questions are fundamental to a scientific understanding of how individuals benefit from IER in their daily lives.

A third unanswered question pertains to whether and how IER is distinct from closely related phenomena, such as *intra*-personal ER and extraversion. *Intra*-personal ER strategies, such as distraction and reappraisal, can be used in both social and nonsocial contexts. As a result, IER may capture nothing more than individuals' use of *intra*-personal ER in social settings. For instance, people can reappraise the meaning of emotional experiences in either social or nonsocial settings. Likewise, individuals might simply enjoy interacting with others (Baumeister & Leary, 1995; Dunbar & Shultz, 2007), and thus benefit emotionally from social contact absent any goal-directed attempts to regulate their emotions. In these cases, seeming benefits of IER could actually reflect individuals' level of extraversion. To clarify the structure of IER, researchers must therefore articulate clear boundaries between IER and neighboring constructs.

One way to address these larger questions is the study of individual differences. First, individual differences can help parse a phenomenon like IER into its constituent pieces. For instance, in the domain of *intra*-personal ER, people vary independently in their use of strategies such as reappraisal and suppression, suggesting that these processes are distinct (Gross & John, 2003). Measuring individual variance in IER can likewise help uncover its dimensions. Second, individual variation can isolate the *consequences* of IER for relationships and well-being. How individuals use *intra*-personal ER, for example, impacts the quality of their relationships with others (English & John, 2013; English, John, Srivastava, & Gross, 2012). IER might track richer and more salutary social and emotional experiences across people. Evidence to this effect would bridge IER with other domains such as loneliness and social support. Finally, individual differences can clarify how IER relates to, or diverges from, constructs like intrapersonal ER and extraversion.

We propose that people vary in two independent dimensions of IER: their *tendency* to pursue IER in response to emotional events, and their perceptions of IER's *efficacy* for managing their emotions. These predictions follow evidence that similar dimensions underlie *intra*-personal ER. Specifically, people vary by their tendency to use ER strategies, and their belief that ER can effectively change their emotions (Gratz & Roemer, 2004; Gross & John, 2003). We further predict that individuals' variation along these two dimensions tracks their social and emotional well-being. This follows evidence that people report improved well-being when they draw upon supportive relationships and perceive social support favorably (Cheung, Gardner, & Anderson, 2015; Cohen, Sherrod, & Clark, 1986).

To test these predictions, we developed the Interpersonal Regulation Questionnaire (IRQ), a novel measure of individual differences in IER *tendency* and *efficacy*. In addition to establishing these dimensions of IER, we used the IRQ to test the relationship between IER and (a) trait measures of social and emotional well-being, (b) affiliation with other people during emotional circumstances, (c) perceptions of social support following emotional experiences, and (d) the development of supportive relationships in emerging, real-world social networks. We further test whether the IRQ tracks these outcomes above and beyond established measures of *intra*-personal ER and extraversion. This approach identifies distinct dimensions of IER, reveals their implications for social and emotional well-being, and clarifies how they differ from related psychological phenomena.

Characterizing Interpersonal Emotion Regulation

Intrapersonal and interpersonal ER exist on a continuum, without a single clear boundary delineating between them. Allport (1954) famously described social psychology as reflecting individuals' responses to the "actual, imagined, or implied presence of other human beings." This description suggests an inclusive definition of IER. For instance, people in difficult situations may imagine what their friends would say to help them. However, this definition fails to capture the core social–cognitive processes that scaffold IER.

When people manage their emotions through IER, they perceive other individuals' minds (Epley & Waytz, 2009; Waytz, Gray, Epley, & Wegner, 2010). Mind perception enables people to predict (Tamir & Mitchell, 2010, 2013), infer (Shafto, Goodman, & Frank, 2012), and learn from (Olsson, Nearing, & Phelps, 2007; Olsson et al., 2016) others' experiences. It also forms a key piece of IER, as individuals detect recipients' minds before disclosing their emotions. Likewise, people perceive others' thoughts, understanding, and intentions when appraising their support as constructive or responsive (Gable, Reis, Impett, & Asher, 2004; Maisel & Gable, 2009; Morelli, Torre, & Eisenberger, 2014).

We therefore adopt an operational definition of IER as regulatory episodes that transpire within live social interactions (Zaki & Williams, 2013). Like intrapersonal ER, IER concerns individuals' goal-directed attempts to manage their emotions through particular strategies (Gross, 1998). However, IER further requires the live presence of other people. Some types of IER, like feeling understood and validated, vitally depend upon other individuals' responses (Lambert et al., 2013). Other types, like self-disclosure, may rely less on feedback from others (Tamir & Mitchell, 2012; Tamir, Zaki, & Mitchell, 2015). Nonetheless, both of these examples involve social–cognitive processes that are not evident in intrapersonal ER. Self-affirmation and expressive writing, for example, do not require individuals to directly communicate with others.

An IER framework holds that people use social interactions to advance their emotional goals. Moreover, they appraise the outcomes of these interactions with respect to their success or failure in meeting their goals. In our opening example, Charlene attempts several social regulatory strategies in response to the loss of her job: seeking out the company of her friends, venting her frustration, and eliciting her friends' support. She then appraises the outcomes of these attempts according to her emotional goals of feeling less negative emotion and more positive emotion. These appraisals inform Charlene's expectations for the likely success of attempting these strategies with these friends again in the future. This example illustrates how a single episode of IER strings together a series of social-emotional behaviors and appraisals.

Social-Emotional Phenomena through a Regulatory Lens

IER partially overlaps with other social and emotional phenomena, such as affiliation (Schachter, 1959), venting (Rimé, 2009), support-seeking (Gable et al., 2004), perceived support (Uchino, 2009), and attachment style (Collins & Read, 1990), and provides a new framework for relating these constructs through their shared underlying regulatory mechanisms (Zaki & Williams, 2013). In this way, IER provides similar insights to those offered by the concept of emotion regulation more broadly. For instance, individual differences in reappraisal—a core emotion regulation strategy—correlate with other constructs such as coping and mood management (Gross & John, 2003). Despite not being entirely separable from these prior constructs, emotion regulation provided a new way to understand them, in terms of individuals' *goals* to change their emotions.

Specifically, emotional goals clarify why individuals are motivated to use coping behaviors, and how they appraise the usefulness of such behaviors. Theories of stress and coping state that people use coping responses when they perceive potential threats (Lazarus & Folkman, 1984). Emotion regulation theory further stipulates that salient events (such as perceived threats) motivate individuals to pursue their emotional goals through regulatory behaviors (Gross, 1998). For instance, diverse situations can inspire goals to feel less negative emotion and more positive emotion (e.g., Tsai, 2007) or more negative emotion and less positive emotion (e.g., Giuliani, McRae, & Gross, 2008; Tamir, Mitchell, & Gross, 2011). Emotional goals also provide individuals with a benchmark for understanding when their regulatory efforts succeed or fail (Gross, 2015).

IER extends these insights by reframing social forms of coping in terms of individuals' emotional goals. For instance, IER holds that emotional goals motivate individuals to use social behaviors for coping. On this view, people use affiliation, venting, support-seeking, and related behaviors to regulate their affect through social means (see Gable et al., 2004; Rimé, 2009; Schachter, 1959). IER further states that emotional goals inform how individuals generate appraisals related to social coping. According to IER, phenomena such as perceived support and secure attachment style reflect whether people *appraise* social coping as an effective way to regulate their emotion (see Collins & Read, 1990; Uchino, 2009). This framework parallels emotion regulation theory by highlighting emotional goals as a key mechanism underlying social forms of coping. In addition, it further predicts that behaviors such as affiliation, and appraisals such as perceived support, should track individual differences in IER.

IER also integrates distinct social-emotional phenomena by identifying different points in time at which they should operate. The mere presence of other people, for example, can signal increased resources for overcoming challenges, thus minimizing individuals' appraisals of threat (Coan & Sbarra, 2015). Social support improves well-being by buffering against stressful events (Cohen & Wills, 1985) and generating opportunities for positive social interactions (Lakey & Orehek, 2011). From an IER perspective, these theories describe multiple time points at which social interaction can regulate emotional responses (Gross, 1998). For instance, individuals may select situations that provide positive social interactions, appraise challenging events as less threatening in the presence of other people, or buffer stress responses through social support (Reeck et al., 2016). IER thus bridges prominent theories from social psychology and affective science under a common framework.

Core Components of IER

IER can be sorted into two main types, based on whether people use it to alter their own or others' emotions (Gross, 2015). In *intrinsic* IER, individuals target their own emotions for regulation. For instance, we described in our opening example how Charlene sought out the company of her friends to manage her own emotions through intrinsic IER. In contrast, people also target other individuals' emotions for regulation via *extrinsic* IER. Charlene's friends, for example, engaged in extrinsic IER when they provided Charlene with support to regulate her emotions.

Past research on IER predominantly examines extrinsic forms of this phenomenon (Barrera, 1986; Cohen & Wills, 1985; Lepore, 1998). For instance, scientists have explored how people target others' emotion-relevant cognitions versus behaviors (Niven et al., 2009), or intervene earlier versus later in others' emotion generation process (Reeck et al., 2016). By contrast, the dimensions underlying *intrinsic* IER have received relatively less attention. Here, we focus on this relatively unexplored phenomenon.

We propose that people strategically recruit others' support to manage their own emotions through intrinsic IER. Decades of research on social support dovetail with this view. For instance, many individuals prefer to experience emotional events alongside other people, rather than by themselves (Lakey & Orehek, 2011; Schachter, 1959). Similarly, people often seek out others after emotionally salient experiences (Langston, 1994; Taylor, 1991), and share their positive and negative emotions with others (Gable et al., 2004; Rimé, 2009). When viewed through the lens of IER, these behaviors can be understood as strategies to regulate one's own emotions. This perspective is further supported by evidence that individuals selectively seek out help that advances their goals. For instance, people turn to different individuals to cope with particular emotions (Cheung et al., 2015).

Dimensions of Intrinsic IER

We propose that intrinsic IER can be better understood by separating it into two dimensions: individuals' *tendency* to pursue IER—that is, how often they use intrinsic IER—and the *efficacy* they perceive IER to have—that is, how well they believe IER works to improve their emotions. These dimensions parallel those involved in *intra*-personal ER. Individuals vary in their tendency to draw upon intrapersonal ER strategies, such as reappraisal and suppression (Gross & John, 2003). People also report varying confidence in their ability to manage their emotions through these strategies (Gratz & Roemer, 2004). We hypothesize that similar dimensions may capture variation in how much individuals tend to use IER and how well they believe IER works in changing their emotions.

Research suggests that people indeed vary in their use and perceptions of intrinsic IER. With regard to tendency, individuals differ in their proclivity to broadcast their emotions to others via facial displays and verbal communication (Gross & John, 1997; Rimé, 2009), their desire for close relationships (Baumeister &

Leary, 1995; Collins & Read, 1990), and their tendency to seek support from others (Carver, Scheier, & Weintraub, 1989). With regard to efficacy, social support benefits some individuals more than others, as indexed by self-report, physiological, and neural measures (e.g., Coan, Schaefer, & Davidson, 2006; Gable, Reis, & Downey, 2003; Kamarck, Manuck, & Jennings, 1990). Critically, individuals' perceptions of IER may be distinct from their tendency to actually pursue IER.

We further propose that these dimensions should highlight distinctions between IER on the one hand, and related but distinct psychological constructs, such as intrapersonal ER and extraversion, on the other hand. As we described above, IER requires other individuals because it engages social–cognitive processes that are not necessary for intrapersonal ER. For instance, people must communicate with other individuals when they disclose their own emotions or receive support from others (Morelli et al., 2014; Tamir & Mitchell, 2012). This suggests that intra- and interpersonal ER represent qualitatively different regulatory phenomena. One prediction consistent with this idea is that people should show independent preferences for inter- versus intrapersonal ER in regulating their emotions. For instance, people who exhibit strong tendencies to regulate their emotions interpersonally should not necessarily also exhibit strong tendencies to employ strategies such as reappraisal or suppression.

Likewise, individuals' perceptions of IER efficacy should not simply reflect their general enjoyment of social contact, as indexed by their level of extraversion. Individuals' degree of IER efficacy and extraversion likely both influence their appraisals of emotionally salient social interactions. For instance, extraverts perceive social rewards more favorably than introverts (Lucas & Diener, 2001). However, extraverted individuals report these benefits even without any apparent goal to change their emotions. By contrast, people should benefit from IER to the extent that they achieve their emotional goals (Zaki & Williams, 2013). This difference in goal pursuit illustrates a critical distinction between the regulation and generation of emotion in social contexts (Gross & Barrett, 2011). Namely, social settings provide opportunities for individuals to change their emotions according to their goals (Gross, 1998). However, these settings can also generate emotions in people, irrespective of their goals. We therefore predict that people will benefit from IER according to their general perceptions of IER efficacy rather than their degree of extraversion.

Finally, we propose that these two dimensions of intrinsic IER should impact social and emotional well-being. First, people with a high tendency to seek out IER may reap its benefits more often. This view is consistent with evidence that individuals report greater well-being when they manage their emotions through a diverse set of relationships (Cheung et al., 2015). Individuals who tend to approach their romantic partners, rather than avoid them, similarly report more positive emotional experience and greater relationship satisfaction (Impett et al., 2010). Adults with insecure attachment styles likewise perceive relationships more negatively, experience more emotional distress, and report less relationship commitment, trust, and satisfaction (Collins, 1996; Simpson, 1990).

In addition, people who view IER as more efficacious may experience greater benefits from IER. For example, individuals' perceptions of social support track their cardiovascular health (Uchino, 2009) and emotional well being (Finch, Okun, Pool, & Ruehlman, 1999; Zimet, Dahlem, Zimet, & Farley, 1990) even when controlling for the amount of support they actually receive. Critically, perceived support tracks well-being independent of individuals' tendency to self-disclose (Cohen et al., 1986). This evidence suggests that perceived IER efficacy, and the tendency to pursue IER, may independently promote improved social and emotional well-being.

Research Overview

Across five experiments, we studied individuals' (a) tendency to pursue and (b) perceived efficacy of intrinsic IER. Specifically, we test whether people reliably vary in IER tendency and efficacy, and whether individual variation along these dimensions tracks relevant behaviors, appraisals, and social relationships. We further assess whether these dimensions dissociate from related but distinct psychological constructs, such as intrapersonal ER and extraversion. Broadly, we find that IER tendency and IER efficacy track numerous aspects of social and emotional well-being above and beyond these constructs.

In Study 1, we generate and validate the 4-factor, 16-item Interpersonal Regulation Questionnaire (IRQ), a novel individual difference measure of intrinsic IER style. In Study 2, we replicate this 4-factor structure in an independent sample and further demonstrate that IER tendency and efficacy (a) converge with individual difference measures of social and emotional well-being, (b) diverge from *intra*-personal ER style, nonsocial personality facets, and social desirability, and (c) exhibit high test–retest reliability.

Next, we explore the predictive value IER tendency and efficacy have over "downstream" social behaviors and experiences. In Study 3, we show that IER tendency predicts individuals' decisions to seek out others after experiencing experimentally induced emotion. In Study 4, we find that IER efficacy likewise correlates with participants' quality ratings of real-world social support following recent emotional experiences. In Study 5, we show that both IER tendency and efficacy predict the amount and quality of novel relationships people develop in emerging, real-world social networks.

Study 1: Individual Differences in IER Tendency and Efficacy

As described above, we predicted that people would vary by both their *tendency to pursue* IER and their *perceived efficacy* of IER. We further examined individuals' use of IER to either *decrease negative* or *increase positive* emotions. On average, people wish to feel more positive and less negative emotion (Elliot & Thrash, 2002), and use ER strategies such as reappraisal to support these goals (Giuliani et al., 2008). Measures of social support likewise distinguish between support for relieving negative experiences and enhancing positive experiences (e.g., Sherbourne & Stewart, 1991; Zimet et al., 1990). There are cases in which people strive to decrease positive or increase negative emotions (Netzer, Van Kleef, & Tamir, 2015; Tamir et al., 2011), but here we focus on the more common affective goals of experiencing more positive and less negative emotion (Tsai, 2007).

To assess individual differences in intrinsic IER, we crossed these two dimensions, generating a matrix of four content areas (Figure 1). We then generated items describing individuals' ten-

	Tendency	Efficacy
Decreasing Negative	When something bad happens, my first impulse is to seek out the company of others.	I appreciate having others' support through difficult times.
Increasing Positive	When I want to celebrate something good, I seek out certain people to tell them about it.	Being with other people tends to put a smile on my face.

Figure 1. The Interpersonal Regulation Questionnaire (IRQ) 4-factor structure and sample items: tendency/efficacy and valence dimensions.

dency to engage specific IER strategies, similar to how the ERQ measures the use of reappraisal and suppression (Gross & John, 2003). We also generated items characterizing individuals' perceptions of IER efficacy, drawing from the DERS Strategies subscale measure of intrapersonal ER efficacy (Gratz & Roemer, 2004). In both cases, we further distinguished between attempts to decrease negative versus increase positive emotions.

We predicted that items from our four quadrants would emerge as distinct factors. We also expected some positive relationship between individuals' tendency to pursue IER and their perceived efficacy of IER. For instance, people might tend to draw on strategies that they have found helpful in the past (Aldao, Sheppes, & Gross, 2015; Bonanno & Burton, 2013). People may likewise believe that strategies that help them feel positively should also diminish their negative affect (Feldman, 1995a, 1995b).

Method

In all five studies described in this paper, we obtained participants' informed consent, in accordance with the Stanford University Research Compliance Office guidelines.

Item development. We generated a proportional number of items for each of our four content areas (87 items total). To tap individuals' general tendency toward IER, we created items that assess their pursuit of social contact, social sharing of emotion, and support-seeking (Gable et al., 2004; Rimé, 2009; Schachter, 1959). Other items assessed individuals' perceptions of IER efficacy by measuring their feelings of understanding, validation, and support in social contexts (Coan & Sbarra, 2015; Cohen & Wills, 1985; Maisel & Gable, 2009). We balanced both groups of items to capture individuals' attempts to decrease their negative emotions and increase their positive emotions.

All items conveyed explicit or implicit goals to change one's emotions (Gross, 1998) through social interaction. For instance, "I manage my emotions by expressing them to others." explicitly states an emotional goal. Conversely, "When something bad happens, my first impulse is to seek out the company of others." implies an emotional goal. Critically, all items related social interactions to their emotional antecedents and outcomes. This framing ensured that participants evaluated social behaviors in the context of IER. The majority of items were phrased in the affirmative (71%), but we also reversed 25 items, spanning all four content areas, to be framed negatively. This design choice reflected the utility of reversed items to reduce acquiescence bias in measures such as the Berkeley Expressivity Questionnaire (Gross & John, 1997).

Participants and procedure. We recruited 300 participants on Amazon Mechanical Turk to complete the initial battery of test items online via Qualtrics. This sample size was predetermined to generate high statistical power and provide representation across a range of demographics (Comrey, 1988; Tinsley & Tinsley, 1987). From these responses, we collected 285 complete surveys. Fifteen incomplete surveys were not recorded by Qualtrics. Participants were U.S. citizens of at least 18 years of age ($M = 32.0$ years; $SD = 11.3$) and comprised a diverse sample with respect to both sex (58.6% male) and ethnicity (73.7% Caucasian). Participants read each of the 87 test items in randomized order and indicated their agreement on a 7-point Likert scale ranging from *strongly disagree* to *strongly agree*.

Outliers. Prior to data analysis, we examined participants' survey completion times to identify and remove outliers. On average, participants responded to the 87 statements in 11.8 minutes ($SD = 6.7$). However, participants in the bottom 10% of survey completion times finished in fewer than 5.3 minutes (bottom 10% $M = 4.0$ minutes; $SD = 0.95$). Given that these participants likely could not have thoughtfully responded to the survey at this speed, we classified these 29 respondents as outliers and omitted their data from subsequent analyses (final $N = 256$). This criteria follows the recommendations that outlier cutoffs should be chosen according to the proportion of data they eliminate, and that the loss of 10–15% of responses constitutes a reasonable exclusion (Ratcliff, 1993).

Factor analyses. We conducted a series of parallel factor analyses on participants' responses to the 87 test items to determine the optimal number of explanatory factors. Traditional eigenvalue rules successfully quantify the unique variation captured by individual factors (Cattell, 1966; Kaiser, 1960) but scree tests can generate either overly liberal or conservative interpretations depending upon how rapidly factors' eigenvalues diminish (Bandalos & Boehm-Kaufman, 2009). Parallel analysis methods draw upon bootstrap approaches (Preacher & Hayes, 2004) to instead generate permuted data sets of comparable parameters and extract simulated

Table 1
Model Fit Indices for Factor Analyses of the Interpersonal Regulation Questionnaire (IRQ)

Model	SRMSR	RMSEA	RMSEA CI	TLI
Sample 1	—	—	—	—
Model 1: All items (87)	.03	.054	[.042, .063]	.89
Model 2: Nonreversed items (67)	.03	.057	[.047, .065]	.90
Model 3: Final scale (16)	.03	.065	[.047, .079]	.95
Sample 2	—	—	—	—
Model 4: Final scale replication (16)	.02	.053	[.037, .065]	.97

Note. CI = .90; SRMSR = Sandardized Root-Mean-Square Residual; RMSEA = Root Mean Square Error of Approximation; TLI = Tucker-Lewis Index.

eigenvalues (Hayton, Allen, & Scarpello, 2004). By generating distributions of these values, simulated medians can be calculated as an objective standard for retention: observed factors are only retained if their eigenvalues statistically exceed simulated median values. This approach provides a clear quantitative estimate of each factor's respective contribution (Ruscio & Roche, 2012).

For all parallel exploratory factor analyses, we sampled 1,000 iterations and subsequently performed oblique rotations (minimum residual) in accordance with our prediction that factors would moderately intercorrelate (Russell, 2002). We followed Hu and Bentler's (1999) "two criteria" recommendation for evaluating absolute model fit via the standardized root-mean-square residual (SRMR) and root mean square error of approximation (RMSEA) indices (Steiger & Lind, 1980). For both indices, smaller values reflect better fit, and values $\leq$.08 signal acceptable model fit (Browne & Cudeck, 1992). These metrics are superior to chi-square likelihood ratio statistics, which compare actual models to perfect model fit (MacCallum, 1990) and reject suitable models for even slight deviations in large sample sizes (Hakstian, Rogers, & Cattell, 1982; Humphreys & Montanelli, 1975). However, we further report the Tucker-Lewis Index (TLI), as recommended by Hu and Bentler (1999), which instead compares actual and null model chi-squared values (Tucker & Lewis, 1973). Higher TLI values indicate greater relative fit, with values $\geq$.90 indicating good model fit (Byrne, 1994).

Following each round of factor analysis, we examined item-factor correlations and only retained factors with at least four items loading $r \geq .5$ (DeVellis, 2012). For these surviving factors, we calculated interfactor correlations and assessed the conceptual content of each factor. Following the second analysis, we optimized scale length to four items per subscale to enhance the scale's overall ease of use. By trimming items with relatively lower item-factor loading, we further enhanced construct validity by increasing the overall cohesiveness of items within each subscale. In the third and final analysis, we additionally calculated reliability (α) estimates and interfactor correlations for each of the final subscales.

Results

An initial exploratory parallel factor analysis of all 87 test items suggested a 6-factor solution that accounted for 60% of variance in responding and demonstrated strong model fit (Model 1.1; Table 1). The first five factors loaded at least four items at $r \geq .5$, but the sixth factor loaded only two items. Accordingly, we retained the first five factors only. No items cross-loaded across multiple factors at the $r \geq .5$ threshold.

Conceptual analysis revealed that the second factor exclusively loaded reversed items spanning all four content areas. However, no other factors predominantly loaded reversed items. Reversed items commonly load together as a distinct factor due to their linguistic similarity, even when they tap into similar concepts as other factors (DeVellis, 2012; Schriesheim & Eisenbach, 1995). This artifact reflects a tendency for some participants to respond similarly to reversed items irrespective of their content. For instance, simulations by Woods (2006) suggest that careless responding to reversed items by just 10% of participants can cause reversed items to load a separate method factor. We understood this factor to primarily reflect a linguistic artifact and we therefore conducted a second exploratory factor analysis excluding all 25 reversed items.

A second parallel factor analysis of the 62 nonreversed test items yielded a 5-factor solution that accounted for 61% of variance in responding and also exhibited strong model fit (Model 1.2; Table 1). The final factor again loaded only two items at $r \geq .5$, and so we retained the first four factors. As in the first analysis, no items cross-loaded at $r \geq .5$ across multiple factors. Conceptual analysis now revealed four unique factors comprising a 2×2 structure: (1a) *tendency* to use IER to decrease *negative* emotion; (2a) perceived *efficacy* of IER for decreasing *negative* emotion; (1b) *tendency* to use IER to increase *positive* emotion; and (2b) perceived *efficacy* of IER for increasing *positive* emotion (see Figure 1 e.g., items). Because each factor loaded between 7 and 16 items at $r \geq .5$, we optimized the length of each subscale. To do so, we first sorted the items on each factor by their respective item-factor loading and examined each item for linguistic redundancy with other items on the same factor. Whenever two or more items overlapped, we rejected the lower-scoring redundant item and kept the item with the higher item-factor loading. Finally, we retained the four highest-loading items on each factor (16 items total) for inclusion in the final Interpersonal Regulation Questionnaire (IRQ; Appendix A).

The final parallel factor analysis of these 16 items found that a 4-factor structure accounted for 65% of variance in responding and demonstrated strong model fit (Model 1.3; Table 1). All four factors were retained and no items cross-loaded at $r \geq .5$ across multiple factors. These factors demonstrate high reliability (αs = .83–.90; Tables 2 and 3) and moderate interfactor correlations (rs = .44–.59; Table 4). We additionally found that women tended to endorse all four factors more than men, but found no consistent effects of either age or ethnicity (Supplementary Table 1).

Discussion

We find that individuals vary by their tendency to pursue IER, and to perceive IER as efficacious, when attempting to either decrease negative emotions, or increase positive emotions. Factor analyses of participants' responses to 87 test items yielded the final 16-item Interpersonal Regulation Questionnaire (IRQ). The four IRQ subscales comprise a 2×2 structure and capture individuals' *tendency to use* and *perceived efficacy* of IER for *decreasing negative* and *increasing positive* emotion. These IER dimensions moderately intercorrelate, but also emerge as distinct and highly reliable factors. Our findings thus suggest that individuals' perceptions of IER efficacy are distinguishable from their actual tendency to engage in IER.

Study 2: Convergent and Discriminant Relationships with IER Dimensions

We next examined whether the tendency to pursue and benefit from IER tracks improved social and emotional well-being. We further assessed whether these two IER dimensions track the use of particular IER strategies, but not *intra*-personal ER tendencies, social desirability, social status, and personality facets lacking central social features (e.g., conscientiousness, openness, and neuroticism). To test these possibilities, we administered the IRQ and other individual difference measures to a novel group of partici-

Table 2
Reliability (α) for the Interpersonal Regulation Questionnaire (IRQ): Negative Subscales

IRQ negative subscales and items	Sample 1 α/λ	Sample 1 CI	Sample 2 α/λ	Sample 2 CI
IRQ Negative-Tendency (NT) subscale	.90	[.83, .97]	.89	[.83, .95]
1. When something bad happens, my first impulse is to seek out the company of others.	.74	[.62, .87]	.74	[.63, .84]
2. When I'm having trouble, I can't wait to tell someone about it.	.80	[.67, .91]	.77	[.66, .87]
3. I just have to get help from someone when things are going wrong.	.73	[.58, .87]	.72	[.61, .83]
4. I manage my emotions by expressing them to others.	.71	[.56, .85]	.53	[.41, .65]
IRQ Negative-Efficacy (NE) subscale	.85	[.77, .93]	.86	[.80, .93]
5. I appreciate having others' support through difficult times.	.59	[.37, .80]	.72	[.58, .85]
6. Sometimes I just need someone to understand where I'm coming from.	.73	[.46, .90]	.47	[.31, .65]
7. It really helps me feel better during stressful situations when someone knows and cares about what I'm going through.	.67	[.42, .83]	.69	[.55, .86]
8. I really appreciate having other people to help me figure out my problems.	.62	[.42, .77]	.47	[.33, .59]

Note. CI = .95.

Table 3
Reliability (α) for the Interpersonal Regulation Questionnaire (IRQ): Positive Subscales

IRQ positive subscales and items	Sample 1 α/λ	Sample 1 CI	Sample 2 α/λ	Sample 2 CI
IRQ Positive-Tendency (PT) subscale	.89	[.82, .96]	.90	[.84, .96]
9. When things are going well, I just have to tell other people about it.	.79	[.63, .93]	.80	[.65, .93]
10. When something good happens, my first impulse is to tell someone about it.	.92	[.79, 1.01]	.91	[.80, .98]
11. When things are going well, I feel compelled to seek out other people.	.61	[.43, .77]	.52	[.35, .68]
12. When I want to celebrate something good, I seek out certain people to tell them about it.	.62	[.42, .77]	.68	[.54, .80]
IRQ Positive-Efficacy (PE) subscale	.83	[.75, .91]	.88	[.82, .94]
13. I'm happier when I'm with my friends than when I'm by myself.	.51	[.36, .66]	.68	[.53, .79]
14. Being with other people tends to put a smile on my face.	.84	[.68, .96]	.85	[.68, .96]
15. I find that even just being around other people can help me to feel better.	.59	[.44, .75]	.74	[.60, .83]
16. I really enjoy being around the people I know.	.71	[.55, .86]	.70	[.56, .82]

Note. CI = .95.

Table 4
Inter-Factor Correlations for the Interpersonal Regulation Questionnaire (IRQ) Subscales

IRQ subscale	Negative-Tendency (NT)	Negative-Efficacy (NE)	Positive-Tendency (PT)	Positive-Efficacy (PE)
Sample 1				
(NT)	—	.54*** [.31, .61]	.59*** [.39, .69]	.44*** [.34, .64]
(NE)	.54*** [.31, .61]	—	.56*** [.32, .61]	.53*** [.31, .60]
(PT)	.59*** [.39, .69]	.56*** [.32, .61]	—	.47*** [.34, .61]
(PE)	.44*** [.34, .64]	.53*** [.31, .60]	.47*** [.34, .61]	—
Sample 2				
(NT)	—	.43*** [.34, .60]	.59*** [.44, .69]	.56*** [.46, .69]
(NE)	.43*** [.34, .60]	—	.53*** [.35, .62]	.55*** [.33, .64]
(PT)	.59*** [.44, .69]	.53*** [.35, .62]	—	.65*** [.49, .70]
(PE)	.56*** [.46, .69]	.55*** [.33, .64]	.65*** [.49, .70]	—

Note. CI = .95.
*** $p < .001$.

pants. We further replicated the 4-factor structure of IER, and established test–retest reliability, with this independent sample.

Research on loneliness and perceived social support suggests that pursuing and benefiting from IER should enhance socioemotional well-being. For example, individuals suffering chronic isolation experience poorer physical and mental health (Hawkley & Cacioppo, 2010). Conversely, individuals who perceive themselves as having abundant interpersonal support experience more positive emotion and less negative affect, depression, and anxiety (Finch et al., 1999; Zimet et al., 1990). We thus predicted that individuals with higher, as opposed to lower, IRQ scores would report more positive and less negative emotional experience.

Furthermore, these two dimensions should track close social relationships that provide opportunities for IER to occur. First, individuals who favor IER may share their emotions with others more openly. For example, people tend to seek out others after experiencing strong emotions (Rimé, 2009), which can enhance well-being (Gable et al., 2004). Second, these individuals may behave more prosocially toward others to establish reciprocal ties (Taylor et al., 2000; von Dawans, Fischbacher, Kirschbaum, Fehr, & Heinrichs, 2012). We thus hypothesized that individuals who scored highly on the IRQ would also be more emotionally expressive, prosocial, and socially connected.

Critically, we further predicted that individual differences in IER would not track *intra*-personal ER tendencies to employ reappraisal or suppression, social desirability, social status, or personality features lacking prominent social elements. This follows evidence, for instance, that nonsocial coping and social desirability only weakly correlate with measures of social support-seeking (Carver et al., 1989; Dahlem, Zimet, & Walker, 1991; Dunkel-Schetter, Folkman, & Lazarus, 1987). Social status also demonstrates little clear influence over support-seeking behaviors (Thoits, 1995). Of the Big Five personality traits, extraversion and agreeableness in particular track enhanced access to support, increased support-seeking, and greater receipt of support (Penley & Tomaka, 2002; Swickert, Rosentreter, Hittner, & Mushrush, 2002). Likewise, IER tendency and efficacy may selectively track personality facets related to social engagement and harmony, such as extraversion and agreeableness.

By administering the IRQ to a novel independent sample, we further attempted to replicate the 4-factor IER structure we found in Study 1, and to establish test–retest reliability. That is, we tested whether individuals' tendency to use IER again distinguished against their perceptions of IER efficacy, for increasing positive emotion and decreasing negative emotion. To evaluate test–retest reliability, we readministered the IRQ to a subset of these participants after three months elapsed, and compared participants' responses across both time points.

Method

Participants. We recruited 350 participants on Amazon Mechanical Turk from whom we collected 347 complete surveys. Three incomplete surveys were not recorded by Qualtrics. Participants were U.S. citizens and at least 18 years of age (M = 35.3 years; SD = 11.5) comprising a diverse sample via sex (52.2% male) and ethnicity (80.1% Caucasian). After three months, we invited a subset of 320 participants—those who gave permission to be contacted regarding future studies—to recomplete the 16-item IRQ. Of these participants, 115 individuals recompleted the 16-item IRQ at follow-up. This sample demonstrated similar demographics with respect to age (M = 36.7 years; SD = 10.8), sex (50.0% male), and ethnicity (79.1% Caucasian).

Procedure and measures. Participants completed the 16-item IRQ and 31 additional measures selected to establish convergent and discriminant validity. Questionnaire order was randomized for each participant. Participants read and indicated their agreement with each statement on a 7-point Likert scale ranging from *strongly disagree* to *strongly agree*. At 3-month follow-up, a subset of participants completed the 16-item IRQ only.

Convergent measures: Affective experience, social sharing of emotion, prosociality, social connectedness, and interpersonal ER tendencies. To establish convergent validity, participants responded to 22 total measures tapping affective experience, social connectedness, prosociality, social sharing of emotion, and interpersonal ER tendencies (Appendix B).

Affective experience. Participants completed 4 measures spanning both positive and negative dimensions of affective experience: the 10-item Positive Affect (α = .87) and Negative Affect subscales (α = .85) of the Positive and Negative Affect Schedule (PANAS) with respect to the past week; the 5-item Reward Responsiveness subscale of the Behavioral Activation System Scale (BAS; α = .73); and the 10-item Perceived Stress Scale (PSS; α = .85) with respect to the past month (Carver & White, 1994; Cohen, Kamarck, & Mermelstein, 1983; Watson, Clark, & Tellegen, 1988).

Social sharing of emotion. We collected 5 measures assessing the social sharing of emotion: the 4-item Positive Expressivity (α = .70) and 6-item Negative Expressivity (α = .70) and Impulse Strength (α = .80) subscales of the Berkeley Expressivity Questionnaire (BEQ); the 4-item Suppression subscale (α = .73) of the Emotion Regulation Questionnaire (ERQ); and the 8-item BFI Extraversion subscale (α = .88; Gross & John, 1997; Gross & John, 2003).

Prosociality. Participants further completed 3 measures of prosociality: the 7-item Empathic Concern (α = .71) and Perspective-Taking subscales (α = .77) of the Interpersonal Reactivity Index (IRI); and the 9-item Agreeableness subscale (α = .79) of the Big Five Inventory (BFI; Davis, 1983; John, Naumann, & Soto, 2008).

Social connectedness. We also collected 7 measures concerning social connectedness: the 6-item Closeness subscale of the Revised Adult Attachment Scale–Close Relationships Version (AAS; α = .81); the 10-item Need to Belong Scale (NTB; α = .81); the abridged 14-item Measure of Sensitivity to Rejection (MSR; α = .83); the 20-item UCLA Loneliness Scale Version 3 (α's = .89–.94); the 10-item Social Skill (α = .77) and Communication subscales (α = .65) of the Adult Autism Spectrum Quotient (AQ); and the 20-item Social Interaction Anxiety Scale (SIAS; α's = .88–.90; Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001; Collins, 1996; Collins & Read, 1990; Leary, Kelly, Cottrell, & Schreindorfer, 2013; Mattick & Clarke, 1998; Mehrabian, 1970, 1976; Russell, 1996).

Use of interpersonal ER. Finally, participants completed 3 measures concerning their use of specific *inter*-personal ER techniques: the 2-item Using Emotional Support (α = .71), Using Instrumental Support (α = .64), and Venting (α = .50) subscales of the Brief COPE Inventory (COPE; Carver, 1997; Carver et al., 1989).

Discriminant measures: Intrapersonal ER tendencies, social standing, and other personality facets. To establish discriminant validity, participants completed 9 total measures of social standing, use of intrapersonal ER strategies, and nonsocial personality facets (Appendix B). For intrapersonal ER, participants responded to 3 measures: the 6-item ERQ Reappraisal subscale (α = .79); and the 2-item COPE Active Coping (α = .68) and Self-Distraction subscales (α = .71). We further collected participants'

responses to the 10-item Marlowe-Crowne Social Desirability Scale Short Form 1 (α's = .59–.70) and the 1-item Subjective Socioeconomic Status (SES) Scale (Adler, Epel, Castellazzo, & Ickovics, 2000; Crowne & Marlowe, 1960; Strahan & Gerbasi, 1972). Finally, we assessed 4 nonsocial dimensions of personality via the BFI 9-item Conscientiousness (α = .82), 10-item Openness (α = .81), and 8-item Neuroticism subscales (α = .84); and the 6-item Self-Control Subscale (α's = .79–.83) of the Barratt Impulsiveness Scale Version 11 (BIS-11; Patton, Stanford, & Barratt, 1995).

Analyses. Factor analysis procedures were identical those performed in the final factor analysis of Study 1. Namely, we conducted a parallel factor analysis of participants' responses to the final 16 IRQ items to confirm the 4-factor structure. We then correlated participants' 3-month follow-up IRQ subscale and total scores with their original responses to assess test–retest reliability. Finally, to establish convergent and discriminant validity, we correlated the full sample's IRQ total and subscale scores with their responses to each validity measure.

Results

Factor structure replication and test–retest reliability. Parallel factor analysis confirmed the 4-factor structure and found that these factors accounted for 69% of variance in responding and demonstrated excellent model fit in this novel sample (Model 1.4; Table 1). As in Study 1, the four IRQ subscales demonstrated high reliability (αs = .86–.90; Tables 2 and 3) and moderate interfactor correlations (rs = .43–.65; Table 4). Test–retest reliability analysis (N = 115) found high temporal stability for IRQ total scores (r = .84) and with respect to each IRQ subscale (rs = .77–.80; Supplementary Table 2).

Convergent and discriminant validity. We report correlation coefficients between IRQ scores and validity measures with 95% confidence intervals (Tables 5, 6, and 7). For each measure, we separately estimated correlations with each of the four IRQ subscales (Negative-Tendency, Negative-Efficacy, Positive-Tendency, and Positive-Efficacy), as well as composite IRQ total scores. Below, we describe these relationships using standard language, for example, weak ($r < .20$), moderate ($.20 \leq r < .50$), and strong ($r \geq .50$).

Affective experience. Higher IRQ scores moderately correlated with greater positive emotional experience, via the PANAS Positive Affect subscale, but reduced reward responsiveness, via the BAS Reward Responsiveness subscale. Conversely, only the IRQ Positive-Efficacy (IRQ-PE) subscale tracked decreased negative experience, as indexed by the PANAS Negative Affect subscale and the Perceived Stress Scale (PSS).

Social sharing of emotion. IRQ endorsement moderately to strongly tracked increased social sharing of both positive and negative emotions, as measured by the BEQ Positive Expressivity, Negative Expressivity, and Impulse Strength subscales. Higher IRQ scores also moderately positively correlated with greater extraversion, via the BFI Extraversion subscale, but negatively correlated with use of expressive suppression, via the ERQ Suppression subscale.

Prosociality. Participants' IRQ responses moderately positively correlated with greater agreeableness, as measured by the BFI Agreeableness subscale, as well as increased empathic tendencies, via the IRI Empathic Concern and Perspective-Taking subscales.

Social connectedness. Higher IRQ scores tracked greater enjoyment and desire for close relationships according to strong positive correlations with the AAS Closeness subscale and Need to Belong Scale (NTB), respectively. Conversely, the IRQ moderately negatively tracked loneliness and autism-like traits via the UCLA Loneliness Scale and Adult Autism Spectrum Quotient (AQ). In addition, the IRQ-PE moderately negatively correlated with the Social Interaction Anxiety Scale (SIAS). However, there was no significant relationship between the IRQ and rejection sensitivity as measured by the Measure of Sensitivity to Rejection (MSR).

Use of interpersonal and intrapersonal ER. Participants who endorsed the IRQ also reported moderately to strongly increased use of *inter*-personal strategies, including venting and using both emo-

Table 5
Convergent Validity for the Interpersonal Regulation Questionnaire (IRQ): Affective Experience, Social Sharing of Emotion, and Prosociality

Convergent measure	IRQ Total	IRQ-NT	IRQ-NE	IRQ-PT	IRQ-PE
Affective experience	—	—	—	—	—
Positive affect (PANAS)	.39*** [.29, .47]	.26*** [.15, .35]	.32*** [.22, .41]	.35*** [.26, .44]	.42*** [.33, .50]
Reward responsiveness (BAS)	−.44*** [−.52, −.35]	−.23*** [−.33, −.13]	−.41*** [−.50, −.32]	−.53*** [−.60, −.45]	−.36*** [−.44, −.26]
Negative affect (PANAS)	−.02 [−.12, .09]	.00 [−.11, .10]	.01 [−.10, .11]	.05 [−.06, .15]	−.12* [−.22, −.01]
Perceived stress (PSS)	−.08 [−.19, .02]	−.02 [−.13, .08]	−.03 [−.14, .07]	.00 [−.11, .10]	−.23*** [−.33, −.13]
Social sharing of emotion	—	—	—	—	—
Positive expressivity (BEQ)	.57*** [.50, .64]	.49*** [.40, .56]	.46*** [.38, .54]	.54*** [.46, .61]	.50*** [.42, .58]
Negative expressivity (BEQ)	.42*** [.32, .50]	.49*** [.41, .57]	.31*** [.21, .40]	.34*** [.25, .43]	.28*** [.18, .37]
Impulse strength (BEQ)	.40*** [.30, .48]	.39*** [.30, .48]	.37*** [.28, .46]	.36*** [.26, .44]	.25*** [.15, .34]
Extraversion (BFI)	.41*** [.31, .49]	.34*** [.24, .43]	.21*** [.11, .31]	.35*** [.26, .44]	.50*** [.42, .58]
Suppression (ERQ)	−.46*** [−.54, −.37]	−.45*** [−.53, −.36]	−.38*** [−.46, −.28]	−.38*** [−.47, −.29]	−.40*** [−.48, −.30]
Prosociality	—	—	—	—	—
Agreeableness (BFI)	.42*** [.32, .50]	.26*** [.16, .36]	.36*** [.27, .45]	.34*** [.25, .43]	.48*** [.40, .56]
Empathic concern (IRI)	.42*** [.33, .50]	.29*** [.19, .39]	.41*** [.32, .50]	.39*** [.30, .48]	.38*** [.28, .46]
Perspective-taking (IRI)	.26*** [.16, .36]	.15** [.04, .25]	.25*** [.15, .34]	.21*** [.11, .31]	.31*** [.21, .40]

Note. CI = .95; NT = Negative-Tendency; NE = Negative-Efficacy; PT = Positive-Tendency; PE = Positive-Efficacy.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6
Convergent Validity for the Interpersonal Regulation Questionnaire (IRQ): Social Connectedness and Use of Interpersonal ER

Convergent measure	IRQ Total	IRQ-NT	IRQ-NE	IRQ-PT	IRQ-PE
Social connectedness	—	—	—	—	—
Closeness (AAS)	.53*** [.45, .60]	.42*** [.32, .50]	.47*** [.39, .55]	.39*** [.30, .48]	.59*** [.51, .65]
Need to belong (NTB)	.49*** [.41, .57]	.42*** [.32, .50]	.43*** [.34, .52]	.42*** [.33, .51]	.44*** [.35, .52]
Rejection sensitivity (MSR)	.09 [−.02, .19]	.05 [−.05, .16]	.17** [.06, .27]	.11* [.00, .21]	−.01 [−.12, .09]
Loneliness (UCLA-LS)	−.45*** [−.53, −.36]	−.33*** [−.42, −.23]	−.36*** [−.45, −.27]	−.36*** [−.45, −.27]	−.53*** [−.60, −.45]
Autism Quotient (AQ)	−.43*** [−.51, −.34]	−.28*** [−.38, −.18]	−.30*** [−.39, −.20]	−.34*** [−.43, −.24]	−.59*** [−.65, −.52]
Social anxiety (SIAS)	−.21*** [−.31, −.11]	−.14** [−.24, −.04]	−.08 [−.19, .02]	−.15** [−.25, −.04]	−.36*** [−.45, −.27]
Inter-personal ER	—	—	—	—	—
Emotional support (COPE)	.59*** [.52, .66]	.57*** [.49, .64]	.54*** [.46, .61]	.47*** [.38, .55]	.48*** [.40, .56]
Instrumental support (COPE)	.60*** [.53, .66]	.62*** [.55, .68]	.52*** [.44, .59]	.46*** [.38, .54]	.48*** [.39, .55]
Venting (COPE)	.31*** [.21, .40]	.37*** [.28, .46]	.26*** [.16, .36]	.26*** [.16, .35]	.17** [.06, .27]

Note. CI = .95; NT = Negative-Tendency; NE = Negative-Efficacy; PT = Positive-Tendency; PE = Positive-Efficacy.
* $p < .05$. ** $p < .01$. *** $p < .001$.

tional and instrumental support, as measured by the COPE. However, IRQ scores only weakly related to *intra*-personal ER tendencies. In particular, the IRQ exhibited only weak correlations with the ERQ Reappraisal and COPE Active Coping subscales, and did not significantly relate to the COPE Self-distraction measure.

Social desirability, social standing, and other personality facets. The IRQ demonstrated no relationship with the M-C Social Desirability Scale, and only the IRQ-PE very weakly correlated with the Subjective Socioeconomic Status Scale. In addition, the IRQ only weakly positively tracked the BFI Conscientiousness and Openness subscales and negatively tracked the BFI Neuroticism subscale, primarily via the IRQ-PE. IRQ measures did not correlate with the BIS Self-Control subscale.

Discussion

We find that people's use of IER tracks improved social and emotional well-being across a variety of measures. Participants who scored highly on the IRQ reported experiencing more positive emotion, expressing their emotions more openly, behaving more prosocially toward others, and enjoying greater social connectedness. These individuals also reported more frequent use of IER strategies such as venting and recruiting emotional and instrumental support. In contrast, we found weak and sporadic relationships between IRQ responses and *intra*-personal ER tendencies, social desirability, social status, and personality facets less central to social interaction (e.g., conscientiousness, openness, and neuroticism). We further replicated our Study 1 findings that IER tendency and efficacy emerge as two distinct dimensions, and that these dimensions moderately intercorrelate, in this independent sample. Finally, we demonstrated robust test–retest reliability for all four IRQ subscales at 3-month follow-up. Overall, our findings present IER tendency and efficacy as unique dimensions with high temporal stability and clear implications for social and emotional well-being.

Consistent with previous evidence for the benefits of social support (see Cohen & Wills, 1985 and Uchino, Cacioppo, & Kiecolt-Glaser, 1996 for reviews), we found that IER tendency and efficacy predict improved social and emotional well-being. Individuals high on these two dimensions reported more positive emotional experience, a finding that could not be attributed to heightened reward responsivity, which negatively tracked IRQ scores. Although only correlational, these data allow that greater engagement with IER might promote positive emotional experience.

Table 7
Discriminant Validity for the Interpersonal Regulation Questionnaire (IRQ): Use of Intrapersonal ER, Social Standing, and Nonsocial Personality Facets

Discriminant measure	IRQ Total	IRQ-NT	IRQ-NE	IRQ-PT	IRQ-PE
Intra-personal ER	—	—	—	—	—
Reappraisal (ERQ)	.20*** [.09, .30]	.11 [.00, .21]	.19*** [.09, .29]	.15** [.05, .25]	.25*** [.14, .34]
Active coping (COPE)	.16** [.05, .26]	.08 [−.03, .18]	.14* [.03, .24]	.14* [.03, .24]	.20*** [.10, .30]
Self-distraction (COPE)	.01 [−.10, .11]	.00 [−.10, .11]	.04 [−.07, .15]	.04 [−.07, .14]	−.05 [−.15, .06]
Social standing	—	—	—	—	—
Social desirability (M-C)	.03 [−.08, .13]	.02 [−.09, .12]	−.05 [−.15, .06]	.03 [−.08, .13]	.10 [.00, .21]
Subjective social status (SSS)	.01 [−.10, .11]	−.02 [−.13, .08]	−.03 [−.14, .07]	−.02 [−.13, .09]	.11* [.01, .22]
Nonsocial personality	—	—	—	—	—
Conscientiousness (BFI)	.12* [.02, .22]	−.01 [−.11, .10]	.12* [.02, .23]	.10 [−.01, .20]	.22*** [.12, .32]
Openness (BFI)	.12* [.01, .22]	.03 [−.08, .13]	.10 [.00, .21]	.11* [.00, .21]	.17** [.07, .27]
Neuroticism (BFI)	−.06 [−.17, .04]	.00 [−.11, .10]	.01 [−.10, .11]	−.03 [−.13, .08]	−.21*** [−.31, −.11]
Self-control (BIS)	.00 [−.10, .11]	.07 [−.03, .18]	−.01 [−.12, .10]	.03 [−.08, .13]	−.10 [−.20, .01]

Note. CI = .95; NT = Negative-Tendency; NE = Negative-Efficacy; PT = Positive-Tendency; PE = Positive-Efficacy.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Individuals who scored highly on the IRQ also reported sharing their emotional experiences with others more openly, a practice that may enhance their well-being and communication with others (Bonanno, Papa, Lalande, Westphal, & Coifman, 2004; Williams, Nook, & Zaki, 2018). These participants further exhibited more prosocial tendencies toward others, which may likewise improve the quality of their relationships with other people (Morelli, Lee, Arnn, & Zaki, 2015; Morelli, Lieberman, & Zaki, 2015). Consistent with these findings, individuals with high IER tendency and efficacy reported increased social connectedness. Individuals high on IRQ Positive-Efficacy demonstrated especially robust social connectedness, suggesting that IER targeted toward amplifying positive emotions may be particularly important for social and emotional well-being. This possibility follows theory that positive social interactions promote strong social ties (Lakey & Orehek, 2011) and evidence that social support is most effective in response to positive events (Gable, Gosnell, Maisel, & Strachman, 2012).

Finally, we show that IER tendency and efficacy converge with the use of specific IER strategies, but dissociate from intrapersonal ER techniques lacking prominent social features. Specifically, participants who scored highly on the IRQ reported increased use of venting and both emotional and instrumental support from others. Conversely, they showed relatively undifferentiated use of reappraisal and active coping. Individuals' IER style is furthermore distinct from their social standing, drive to present themselves in a socially desirable fashion, and personality facets that are less central to social interaction. We also found that most IRQ subscales did not relate to either negative emotional experience or perceived stress, which may reflect the well-documented paradox that enacted support often fails to relieve negative emotions (Barrera, 1986; Lepore, 1998). IER tendency and efficacy also did not track rejection sensitivity, a finding that suggests that individuals may pursue connections with other people even when they carry the risk of social conflict.

Study 3: IER Tendency and Affiliation

In Studies 1 and 2, we developed the IRQ and used it to demonstrate relationships between IER and related constructs. Studies 3 and 4 examine whether individuals' engagement with IER also predicts relevant social behaviors and experiences in response to emotional events. In Study 3, we investigate whether individuals' tendency to pursue IER tracks their decisions to seek out the company of others in response to experimentally induced emotions. Classic studies of affiliation find that humans (Schachter, 1959) and other animals (Harlow & Zimmermann, 1959; Taylor, 1981) often respond to threat by seeking out conspecifics. In humans, this drive can reflect the desire to share stressful experiences rather than go it alone. For example, Schachter (1959) demonstrated that people overwhelmingly prefer to experience stressful events alongside other individuals, but only if they face the same stressor. Gump and Kulik (1997) similarly showed that individuals look to a nervous partner and mimic their facial expressions more when they share stressful experiences. People also seek out others who share their circumstances to amplify positive experiences (Langston, 1994). For example, Boothby and colleagues (2014) find that participants enjoy eating chocolate more when they share the experience with another person. Wagner and colleagues (2015) similarly detect greater neural signals of reward when individuals view emotional images together with friends, as compared with alone.

Here we built on Schachter's classic paradigm to examine individuals' decisions to complete negative and positive image-viewing tasks either with another person or by themselves. Here, we predicted that individuals who report a greater drive to pursue IER in general would be more likely to seek out social contact in this particular instance. We further hypothesized that individuals' decisions to affiliate would track their overall tendency toward IER, independent of their *intra*-personal ER tendencies or degree of extraversion. Evidence to this effect would indicate that individuals' global tendency toward IER, rather than intrapersonal ER strategies like reappraisal and suppression, may drive their choices to affiliate in emotional contexts. Likewise, it would suggest that these decisions reflect individuals' goal-directed attempts to regulate their emotions, rather than heightened enjoyment of social contact vis-á-vis extraversion.

Method

Participants. We recruited 400 participants via Amazon Mechanical Turk to complete either positive or negative image-viewing tasks, the IRQ, and several additional questionnaires. Data collection ceased at $N = 400$ (N per group $= 200$). Participants were U.S. citizens at least 18 years of age ($M = 34.5$ years; $SD = 11.0$) comprising a diverse sample with respect to sex (59.0% male) and ethnicity (78.8% Caucasian).

Procedure. Participants were randomly assigned to complete 20 trials of either a pleasant or an unpleasant image-viewing task (between-subjects) designed to elicit positive or negative emotions respectively. On each trial, participants viewed either negative images drawn from the International Affective Picture System (IAPS; Lang, Bradley, & Cuthbert, 1999) or positive images of young animals. The majority of negative images (85%) depicted either threatening animals or people in distress. IAPS images of young cats and dogs elicit strong positive affect, but the IAPS set includes relatively few such images. We therefore obtained similar images of young cats and dogs via Internet image search. Manipulation check analyses of participants' image ratings confirmed that participants experienced the images as predicted (see Results).

Each image was presented for 2 seconds and image presentation order was randomized for each participant to control for order effects. Participants were instructed to closely attend to each image and to respond naturally, allowing themselves to experience whatever feelings the image evoked. Immediately following each image presentation, participants rated how unpleasant or pleasant they found each image on a 7-point Likert scale. Participants were given unlimited time to respond, but could not advance to the next trial until a response was logged.

Following this task, participants were given the choice to complete the remaining 80 trials of the task either by themselves or with another participant online. To enhance believability, participants were shown a continually updating text status (e.g., Summerville & Chartier, 2013) as the computer task appeared to search for (10.4 seconds) and connect to another participant online (10.9 seconds), and then loaded the main task (9.3 seconds). Participants were then given the choice to complete the remaining task either alone or with the other participant. To control for hand dominance,

we randomly counterbalanced each response option across the 'M' and 'Z' keys. If participants chose to complete the task together, they and the other person would each take turns rating images and seeing each other rate images. Participants could instead choose to complete the task alone, in which case they would alternate between rating images by themselves and seeing previous participants' typical ratings.

This design ensured that participants' choices reflected their desire to view the emotional images, and share their own reactions, with another participant. Regardless of their choice, participants were led to believe that they would view novel pleasant or unpleasant images, sometimes rate their own reactions, and sometimes view other participants' ratings. We further emphasized that (a) participants would rate *different* images than those viewed by either the other individual or past participants, (b) the other person would complete the same task regardless of the participant's decision, and (c) the remaining experiment would take the same amount of time irrespective of their choice. Critically, this conveyed that participants' decisions would not influence other participants' experience or shorten the task duration. We thus sought to minimize participants' expectations of any structural differences in the remaining task as a consequence of their decision.

Following their decision, participants completed a questionnaire battery including demographics, the 16-item IRQ, the 8-item Extraversion subscale of the Big Five Inventory (BFI; John et al., 2008), and the 6-item Reappraisal and 4-item Suppression subscales of the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003). Lastly, participants completed a funneled debriefing to assess task believability. After responding to these questions, participants were informed that they would not in fact complete the remaining 80 trials and were fully debriefed about the purpose of the experiment.

Analyses. As a manipulation check, we first verified that participants experienced the unpleasant and pleasant images as expected. Independent samples *t* tests contrasted participants' image-ratings against equal-length vectors indicating no emotional reaction (i.e., a series of number 1s). Next, we assessed participants' decisions to complete the second phase of the study with another person, as compared to alone. We hypothesized that individuals who report a strong tendency to recruit IER, according to the IRQ Negative- and Positive-Tendency subscales (IRQ-NT/PT), would be more likely to seek out others under emotional circumstances.

To test these predictions, we conducted a series of binomial logistic regression analyses testing whether the IRQ Negative- and Positive-Tendency subscales (IRQ-NT/PT) predicted greater probability of affiliation during negative and positive image-viewing, respectively (Tables 8 and 9). We further assessed these relationships with and without participants' image-ratings, extraversion, and intrapersonal ER measures included as covariates. Likewise, we compared regression models with each covariate against models with both the covariate and the relevant IRQ Tendency subscale.

Because the IRQ subscales exhibit moderate intercorrelations, we additionally tested whether the IRQ Negative- and Positive-*Efficacy* (IRQ-NE/PE) subscales and total IRQ scores also track participants' probability of affiliation (Supplementary Table 3). When the inclusion of these covariates significantly improved model fit, beyond the IRQ Negative- or Positive-Tendency subscale only, we report model comparison statistics within the main text. To obtain regression coefficients and 95% confidence intervals, we conducted follow-up bootstrapped regression analyses utilizing 1,000 iterations (Preacher & Hayes, 2004).

Table 8
Probability of Affiliation by the IRQ Negative-Tendency (IRQ-NT) Subscale, Extraversion, and Use of Intrapersonal ER: Affiliation During Negative Image-Viewing

Model	*b*	CI	*z*
Model 1: IRQ-NT	—	—	—
IRQ-NT	.052	[.00, .11]	1.88^
Model 2a: IRQ-NT + Extraversion	—	—	—
IRQ-NT	.048	[−.0010, .11]	1.63^
Extraversion (BFI)	.0093	[−.035, .052]	.44
Model 2b: IRQ-NT + Reappraisal	—	—	—
IRQ-NT	.054	[.0020, .12]	1.96*
Reappraisal (ERQ)	−.028	[−.086, .020]	−1.13
Model 2c: IRQ-NT + Suppression	—	—	—
IRQ-NT	.063	[−.0022, .14]	1.93^
Suppression (ERQ)	.021	[−.044, .097]	.64

Note. CI = .95.
^ $p < .10$. * $p < .05$.

Table 9
Probability of Affiliation by the IRQ Positive-Tendency (IRQ-PT) Subscale, Extraversion, and Use of Intrapersonal ER: Affiliation During Positive Image-Viewing

Model	*b*	CI	*z*
Model 1: IRQ-PT	—	—	—
IRQ-PT	.079	[.022, .15]	2.54*
Model 2a: IRQ-PT + Extraversion	—	—	—
IRQ-PT	.076	[.012, .14]	2.37*
Extraversion (BFI)	.0074	[−.036, .051]	.34
Model 2b: IRQ-PT + Reappraisal	—	—	—
IRQ-PT	.078	[.020, .14]	2.51*
Reappraisal (ERQ)	.0046	[−.052, .058]	.17
Model 2c: IRQ-PT + Suppression	—	—	—
IRQ-PT	.10	[.038, .19]	2.98**
Suppression (ERQ)	.055	[−.0063, .12]	1.71^

Note. CI = .95.
^ $p < .10$. * $p < .05$. ** $p < .01$.

Results

Manipulation checks. Image-rating analyses confirmed that participants rated negative images as very unpleasant on a 7-point Likert scale ($M = 4.31$, $SD = 1.18$) as compared with a vector of 'not at all unpleasant' responses (all 1s), $b = 3.31$, $t(199) = 39.78$, $p < .001$, 95% CI [3.14, 3.47]. Conversely, participants viewed the positive images as very pleasant ($M = 5.60$, $SD = 1.07$) as compared to a vector of 'not at all pleasant' responses (all 1s), $b = 4.60$, $t(199) = 60.95$, $p < .001$, 95% CI [4.45, 4.75].

Affiliation: Negative image-viewing. For negative IAPS image-viewing, higher IRQ Negative-Tendency (IRQ-NT) subscale scores marginally tracked greater probability of affiliation ($p = .060$; Model 8.1; Table 8; Figure 2a). In contrast, participants' image ratings, extraversion, and use of *intra*-personal ER all failed to

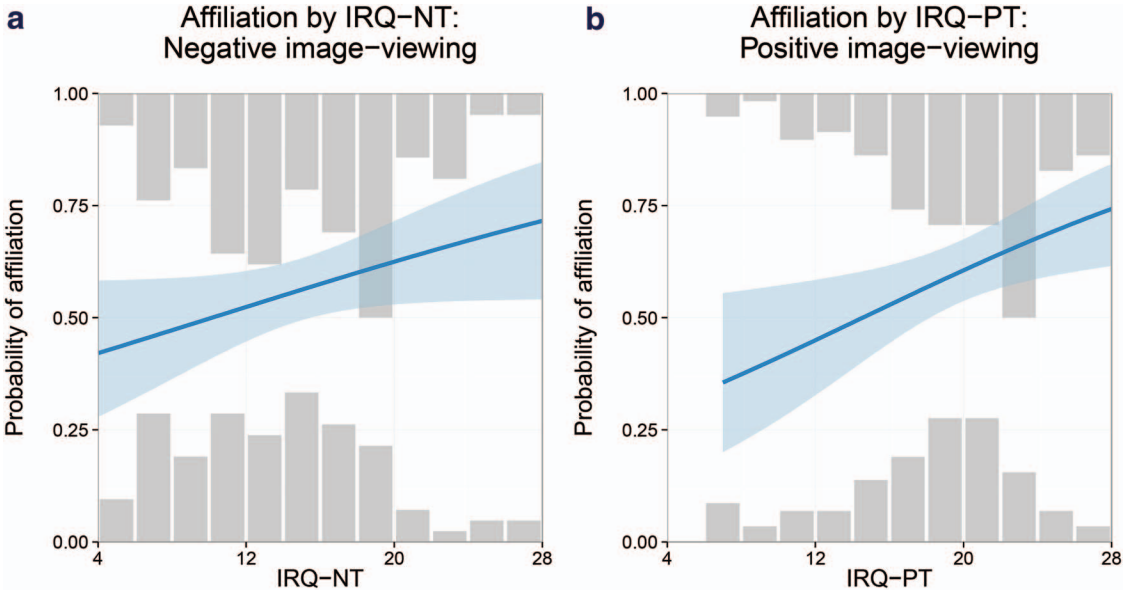

Figure 2. Probability of affiliation by IRQ Tendency subscales. Histograms depict distributions of IRQ tendency scores for participants who chose to view images together with another participant (upper histogram) versus those who did not (lower histogram): (a) unpleasant image-viewing by IRQ Negative-Tendency (IRQ-NT) subscale and (b) pleasant image-viewing by IRQ Positive-Tendency (IRQ-PT) subscale. Error ribbons depict 95% confidence intervals. See the online article for the color version of this figure.

predict affiliation when added as covariates (Models 8.2a-c). In each of these models, the IRQ Negative-Tendency subscale maintained at least trending significance, and reached statistical significance ($p = .050$) when reappraisal was added as a covariate (Model 8.2b). The three other IRQ subscales also predicted significantly greater likelihood of affiliation (Supplementary Table 3), but only the IRQ Negative-*Efficacy* (IRQ-NE) subscale significantly improved upon the IRQ Negative-Tendency model when added as a covariate, $F(1, 197) = 15.79$, $p < .001$.

Affiliation: Positive image-viewing. When participants viewed positive images of young animals, higher IRQ Positive-Tendency (IRQ-PT) subscale scores tracked a significantly greater likelihood of affiliation ($p = .011$; Model 9.1; Table 9; Figure 2b). Participants' image-ratings, extraversion, and use of *intra*-personal ER each failed to track affiliation when added as covariates (Models 9.2a-c), but the IRQ Positive-Tendency subscale maintained statistical significance in all cases. The three remaining IRQ subscales did not significantly track affiliation during positive image-viewing (Supplementary Table 3).

Discussion

Emotional experiences can draw people together when they seek out the company of others. We found that these decisions tracked individuals' general tendency to pursue IER during emotionally loaded circumstances. In particular, participants who scored highly on the IRQ Tendency subscales decided to coexperience emotional image-viewing tasks with other participants more frequently. IRQ Negative-Tendency (IRQ-NT) scores marginally tracked participants' likelihood to select coviewing of negative images, and IRQ Positive-Tendency (IRQ-PT) scores significantly tracked their likelihood to choose coviewing of positive images. These findings suggest that individuals affiliate with others in response to emotional events as one form of IER.

By contrast, measures of extraversion and *intra*-personal ER tendencies consistently failed to track these decisions, and did not erode the predictive power of the IRQ Tendency subscales when included as covariates. This suggests that individuals' decisions to seek out others, during emotional events, do not merely reflect their degree of extraversion or preference for intrapersonal ER. Critically, we designed these tasks to ensure that participants did not seek out others to improve their own performance, shorten the experiment duration, or influence other participants' experience. Moreover, we observed these relationships in a minimalistic, controlled online context in which participants were told they would simply see each other's image ratings but could not directly interact. This approach provides a highly conservative test of general IER tendency's relationship to individuals' decisions to affiliate with others in response to emotional experiences. Our findings further contribute to a growing body of evidence that a variety of affiliative behaviors can be elicited via online social interactions (e.g., Doré, Morris, Burr, Picard, & Ochsner, 2017; Rand et al., 2014; Summerville & Chartier, 2013).

Interestingly, IER efficacy for reducing negative emotion also tracked individuals' decisions to affiliate while viewing unpleasant images. In particular, the IRQ Negative-*Efficacy* (IRQ-NE) subscale also tracked the likelihood to select coviewing negative images, and significantly improved model fit when added as a covariate with the IRQ Negative-Tendency subscale. Although strictly correlational, this finding permits that individuals who find IER helpful may learn to seek it out more frequently, consistent with the view that ER strategies are learned, goal-directed behaviors (John & Gross, 2004).

Study 4: IER Efficacy and Perceived Support

In Study 3, we found that individuals' tendency toward IER tracked their likelihood of seeking out the company of others during emotional circumstances. In Study 4, we investigate whether individuals' perceptions of IER efficacy likewise track the benefits they experience from real-world supportive interactions. Social support tracks positive health outcomes including reduced mortality risk for cardiovascular disease (Berkman, Leo-Summers, & Horwitz, 1992), cancer (Ell, Nishimoto, Mediansky, Mantell, & Hamovitch, 1992), and infectious disease (Patterson et al., 1996). However, support sometimes fails to alleviate or exacerbates negative emotional experience (Allen, Blascovich, Tomaka, & Kelsey, 1991) even as it improves relationship closeness (Gleason, Iida, Shrout, & Bolger, 2008).

Research exploring this paradox has revealed that recipients' *perceptions* of social support often critically determine support success and failure. For example, when social support is overly conspicuous to recipients, it can threaten self-efficacy by conveying that support recipients cannot independently cope with challenges (Bolger & Amarel, 2007). Conversely, social support helps most when recipients perceive it as active and constructive (Gable et al., 2004), and responsive to their needs (Maisel & Gable, 2009). At the level of the individual, high perceived support—the belief that one has access to *high quality* social support—tracks salutary outcomes far more consistently than received support (see Uchino, 2009 for review).

Here, we asked participants to write about recent negative or positive experiences that they had disclosed to a close other, and to rate how well their friend responded and how much better they felt afterward. We predicted that individuals high in IER efficacy would rate social support from other individuals more favorably, irrespective of their degree of extraversion or use of intrapersonal ER. This would indicate a correspondence between IER efficacy as a trait on the one hand, and people's benefitting from particular support episodes on the other hand. Furthermore, it would indicate that appraisals of social support cannot be simply explained by preferences for social interaction, via extraversion, or use of ER strategies that do not involve other people.

Method

Participants. We recruited 800 participants from Amazon Mechanical Turk. This larger sample reflects two key design differences between Studies 3 and 4. First, we examined participants' emotional reactions to unconstrained naturalistic events in Study 4, rather than prenormed stimuli. Second, we measured continuous, rather than dichotomous, outcome variables. We reasoned that a study including these design features would require greater statistical power to detect significant relationships with the IRQ, and thus ran a larger sample for Study 4 than for Studies 1–3. Data collection ceased at target $N = 800$ and we collected 787 complete questionnaires (negative events $N = 391$; positive events $N = 396$) and 13 incomplete surveys that were not recorded by Qualtrics. Participants were U.S. citizens over the age of 18 years ($M = 33.4$ years; $SD = 10.7$) and comprised a diverse sample by gender (53.6% male) and ethnicity (78.1% Caucasian).

Procedure. We randomly assigned participants to write about either one negative or one positive event (between-subjects) from the past week which they had disclosed to a person they knew well. Specifically, participants described the event itself, how it made them feel, and why they felt that way. In addition, participants rated on a 7-point Likert scale how negative or positive they felt as a result of their reported experience. Next, participants wrote about how one person they know well responded when they disclosed the event, how that response made them feel, and why they felt that way. Participants additionally rated on a 7-point Likert scale how well the close other understood their feelings and made them feel cared for, as well as how much better they felt afterward. Lastly, participants responded to a demographics battery, the 16-item IRQ, the 8-item Extraversion subscale of the Big Five Inventory (BFI; John et al., 2008), and the 10-item Emotion Regulation Questionnaire (ERQ; Gross & John, 2003).

Analyses. We first examined participants' experience ratings to confirm that participants reported negative and positive experiences as instructed. Independent-samples *t* tests compared these experience ratings against equal-length vectors indicating no emotional response (i.e., a series of number 1s). Next, we analyzed composite social support averages of how cared for, understood, and better participants felt after disclosing their experiences to a close other. Here we reasoned that participants who endorsed the *efficacy* of IER would rate received social support more favorably.

Accordingly, we conducted a series of linear regression analyses examining the relationship between the IRQ Negative- and Positive-Efficacy (IRQ-NE/PE) subscales and composite social support ratings with and without participants' experience ratings, extraversion, and intrapersonal ER measures included as covariates (Tables 10 and 11). We further compared regression models with each covariate against models with both the covariate and the relevant IRQ Efficacy subscale. Given the IRQ's moderately high interscale correlations, we also tested whether the IRQ Negative- and Positive-*Tendency* (IRQ-NT/PT) subscales and IRQ total scores similarly predicted composite support ratings (Supplementary Table 4). When the inclusion of these covariates significantly improved model fit, beyond the IRQ Negative- or Positive-Efficacy subscale only, we report model comparison statistics within the main text. To obtain regression coefficients and 95% confidence intervals, we conducted bootstrapped regression analyses utilizing 1,000 iterations (Preacher & Hayes, 2004).

Table 10
Perceived Support Ratings by the IRQ Negative-Efficacy (IRQ-NE) Subscale, Extraversion, and Use of Intrapersonal ER: Support for Negative Experiences

Model	*b*	CI	*df*	*t*
Model 1: IRQ-NE	—	—	—	—
IRQ-NE	.13	[.095, .16]	389	7.81***
Model 2a: IRQ-NE + Extraversion	—	—	—	—
IRQ-NE	.12	[.091, .16]	388	7.33***
Extraversion (BFI)	.019	[.00, .039]	388	1.90^
Model 2b: IRQ-NE + Reappraisal	—	—	—	—
IRQ-NE	.12	[.082, .15]	388	6.82***
Reappraisal (ERQ)	.029	[.00, .058]	388	2.34*
Model 2c: IRQ-NE + Suppression	—	—	—	—
IRQ-NE	.13	[.092, .16]	388	7.30***
Suppression (ERQ)	.00	[−.035, .026]	388	−.28

Note. CI = .95.
^ $p < .10$. * $p < .05$. *** $p < .001$.

Table 11
Perceived Support Ratings by the IRQ Positive-Efficacy (IRQ-PE) Subscale, Experience Ratings, Extraversion, and Use of Intrapersonal ER: Support for Positive Experiences

Model	*b*	CI	*df*	*t*
Model 1: IRQ-PE	—	—	—	—
IRQ-PE	.076	[.040, .11]	394	5.40***
Model 2: IRQ-PE + Experience ratings	—	—	—	—
IRQ-PE	.049	[.019, .082]	393	3.83***
Experience ratings	.69	[.53, .86]	393	10.22***
Model 3a: IRQ-PE + Experience ratings + Extraversion	—	—	—	—
IRQ-PE	.041	[.011, .077]	392	2.90**
Experience ratings	.68	[.52, .84]	392	10.00***
Extraversion (BFI)	.011	[−.0032, .027]	392	1.29
Model 3b: IRQ-PE + Experience ratings + Reappraisal	—	—	—	—
IRQ-PE	.042	[.012, .078]	392	3.30***
Experience ratings	.64	[.47, .80]	392	9.42***
Reappraisal (ERQ)	.041	[.020, .063]	392	4.34***
Model 3c: IRQ-PE + Experience ratings + Suppression	—	—	—	—
IRQ-PE	.049	[.016, .081]	392	3.61***
Experience ratings	.69	[.53, .86]	392	10.12***
Suppression (ERQ)	.00	[−.021, .021]	392	−.040

Note. CI = .95.
** $p < .01$. *** $p < .001$.

Results

Manipulation checks. Analysis of experience ratings verified that participants reported negative and positive events as instructed. Participants who described unpleasant events rated their experiences as highly negative on a 7-point Likert scale ($M = 5.30$; $SD = 1.40$) compared with an equal-length vector of 'not at all negative' responses (all 1s), $b = 4.30$, $t(390) = 60.56$, $p < .001$, 95% CI [4.15, 4.43]. Those participants who disclosed pleasant events rated their experiences as highly positive ($M = 6.34$; $SD = .85$) compared to an equal-length vector of 'not at all positive' responses (all 1s), $b = 5.34$, $t(395) = 124.28$, $p < .001$, 95% CI [5.26, 5.42].

Perceived support: Negative events. Following recent unpleasant events, higher IRQ Negative-Efficacy (IRQ-NE) subscale scores tracked significantly more favorable support ratings (Model 10.1; Table 10; Figure 3a). Specifically, participants who scored highly on the IRQ Negative-Efficacy subscale reported feeling more cared for, understood, and better overall after discussing a recent unpleasant event with a close other. Greater extraversion and use of reappraisal each tracked greater perceived support at trending or significant levels when added as covariates (Models 10.2a and 10.2b) but only reappraisal significantly improved upon Model 10.1 fit, $F(1, 388) = 5.46$, $p = .020$. By contrast, participants' experience ratings and use of suppression (Model 10.2c) both failed to significantly predict perceived support when added as covariates. Throughout all three cases, the IRQ Negative-Efficacy subscale maintained statistical significance. Each of the three remaining IRQ subscales also tracked perceived support (Supplementary Table 4), but only the IRQ Negative-*Tendency* (IRQ-NT) subscale significantly improved upon Model 10.1 fit when added as a covariate, $F(1, 388) = 6.22$, $p = .013$.

Perceived support: Positive events. For recent pleasant events, higher IRQ Positive-Efficacy (IRQ-PE) subscale scores tracked more positive support ratings (Model 11.1; Table 11; Figure 3b). Participants who endorsed the IRQ Positive-Efficacy subscale indicated that they felt more cared for, understood, and positive after disclosing a recent pleasant event to a close other. However, unlike negative events, participants' experience ratings of pleasant events positively tracked support ratings when entered as a covariate (Model 11.2) and significantly improved upon Model 11.1 fit, $F(1, 393) = 104.41$, $p < .001$. Accordingly, we included experience ratings as a covariate in all subsequent models. Greater use of reappraisal also predicted more positive support ratings (Model 11.3b) and significantly improved upon Model 11.2 fit when added as a covariate, $F(1, 392) = 18.84$, $p < .001$. However, extraversion and use of suppression failed to significantly track perceived support when entered as covariates (Models 11.3a/c). In all four cases (Models 11.2–11.3c), the IRQ Positive-Efficacy subscale maintained statistical significance. The IRQ Positive-*Tendency* (IRQ-PT) and *Negative*-Efficacy (IRQ-NE) subscales also tracked social support ratings at trending to significant levels with experience ratings as a covariate (Supplementary Table 4) but did not significantly improve upon Model 11.2 fit when entered as covariates.

Discussion

We found that people who perceive IER as highly efficacious reported greater benefits from recent supportive interactions with close others. Participants who endorsed the IRQ Negative-Efficacy (IRQ-NE) subscale rated support for unpleasant events more favorably, and participants who scored highly on the IRQ Positive-Efficacy (IRQ-PE) subscale rated support for pleasant events more positively. Although revealing, these correlational findings cannot establish a clear causal relationship between perceptions of IER and social support efficacy. A more positive view of IER may enhance the benefits of social support, or individuals who receive higher quality social support could develop more positive views of IER over time. In either case, these data demonstrate that broad perceptions of IER efficacy track appraisals of real-world support episodes. Rather than elicit emotions in a controlled setting, as in

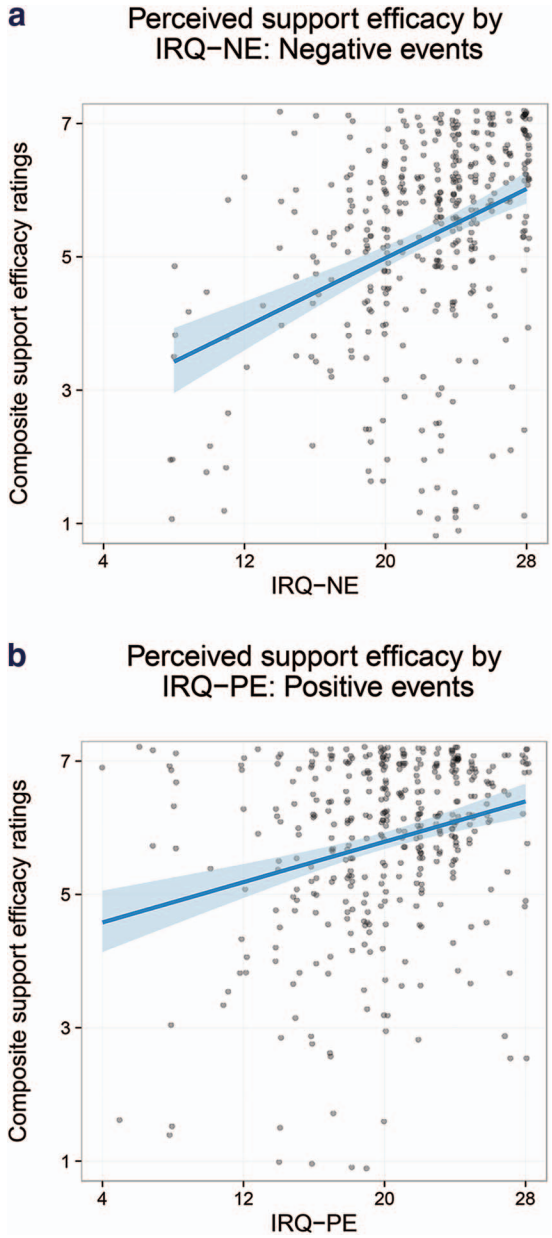

Figure 3. Composite support efficacy ratings by IRQ Efficacy subscales with scatterplots: (a) negative events by IRQ Negative-Efficacy (IRQ-NE) subscale and (b) positive events by IRQ Positive-Efficacy (IRQ-PE) subscale. Error ribbons depict 95% confidence intervals. See the online article for the color version of this figure.

Study 3, we demonstrate these relationships through participants' recent emotional experiences and disclosures. These results thus build upon our previous findings to show how perceptions of IER track specific construals of social support in naturalistic settings.

Participants' extraversion and use of *intra*-personal ER sometimes also correlated with support ratings, as did experience ratings for positive but not negative events. However, IER efficacy continued to track support ratings even when these measures were included as covariates. This suggests that perceptions of IER are not reducible to social reward sensitivity or intrapersonal ER tendencies. The emotional severity of disclosed events likewise could not wholly account for individual differences in IER efficacy.

Moreover, we replicated and extended our findings for unpleasant events with 400 new participants to further establish the predictive validity of IER (Appendix C). Briefly, we found that individuals high on IRQ Negative-Efficacy perceived social support for negative events more favorably, controlling for individual variation in five overlapping constructs: secure attachment style, negative expressivity, extraversion, and instrumental and emotional support-seeking. These data replicate and extend our original findings in a novel sample, and in turn demonstrate the reproducibility of IER predictions over perceived support.

Notably, the IRQ Negative-*Tendency* (IRQ-NT) subscale also tracked participants' ratings of support for negative events. The IRQ Positive-Tendency (IRQ-PT) subscale likewise demonstrated trending predictions over support for positive events. These results mirror our earlier finding that the IRQ Negative-*Efficacy* subscale extended predictions for participants' affiliation in Study 3 beyond the IRQ Negative-Tendency subscale alone. Taken in conjunction, our Study 3 and 4 findings suggest a loose coupling between individuals' engagement and construal of IER. Seeking out IER could promote more favorable views of IER when individuals achieve their emotional goals. Alternatively, successful IER interactions could reinforce individuals to continue pursuing IER in the future. To test these two possibilities, we next examined how individuals' choices to seek out IER in daily life, and their appraisals of IER episodes, shape each other over time.

Study 5: IER Dimensions and Relationships in Social Networks

Studies 3 and 4 provide evidence that IER tracks social behaviors and experiences under emotional circumstances. In Study 5, we built upon this approach by examining how people employ IER when forming real-world social relationships, and how IER tracks individuals' ability to benefit from these relationships. We examined new relationships in the context of emerging and tractable communities: college freshmen dormitories. By leveraging social network analysis (Jackson, 2008), we consider IER's effects over not only single relationships, but also over people's ability to connect with other individuals across their dormitories.

We propose that people use IER to cultivate social bonds during major life transitions, such as beginning college. College freshmen face new challenges, such as increased workloads, greater independence, and social and developmental challenges associated with early adulthood (Compas, Wagner, Slavin, & Vannatta, 1986). How students manage their emotional responses to these challenges impacts the quality of their relationships throughout college (English et al., 2012). When college-bound young adults leave home, they lose typical access to their established social networks for coping with these stressors. However, academic housing communities provide students with opportunities to build new social ties. These relationships can ease the transition to college life, by improving academic performance and enhancing well-being (Pittman & Richmond, 2008).

Here, we examined whether students high in IER tendency and efficacy develop more numerous and supportive relationships dur-

ing their first year of college. At multiple time points during an academic quarter, we asked students in our target dorms to nominate dorm-mates from whom they had sought support, and who they viewed as supportive. We then examined how students' IER related to their peer nominations across time. By observing relationship dynamics in real-world social networks, we further examine the idea that IER helps people build and benefit from social bonds.

In particular, we tested four hypotheses concerning IER and social connectedness. First, we predicted that students high in IER tendency would nominate more peers from whom they seek support. In other words, students who typically manage their emotions through IER should be more likely to pursue IER from their peers. Second, we hypothesized that students high in IER efficacy would nominate more peers who they view as supportive. That is to say that students who generally perceive IER as helpful should be more likely to regard their peers as supportive. As in previous studies, we expected to observe both of these relationships independent of students' levels of extraversion. Evidence consistent with these predictions would conceptually extend our findings from Studies 3 and 4 in a naturalistic setting.

Third, we predicted that students high in IER tendency, who initially nominated many peers from whom they pursued support, would nominate more peers as supportive later in the quarter. In other words, we predicted that IRQ Tendency scores should show an indirect effect on perceived support at Time 2, via support-seeking at Time 1. Research on support-seeking finds that individuals weigh potential costs and benefits when deciding whether, and from whom, to recruit social support (Kim, Sherman, Ko, & Taylor, 2006; Taylor et al., 2004). For instance, people seek out individuals who provide efficient support for specific emotions (Cheung et al., 2015). Help from others may thus be most effective when it is deliberately evoked, as through intrinsic IER. This view suggests that IER-seeking would typically promote positive emotional outcomes.

Fourth, we hypothesized that freshmen high in IER efficacy, who initially nominated many peers as supportive, would nominate more peers from whom they sought support three weeks later. That is to say that IRQ Efficacy scores should exhibit an indirect effect on support-seeking at Time 2, via perceived support at Time 1. Positive and negative social interactions influence individuals' likelihood of approaching or avoiding social contact in the future (Gable & Gosnell, 2013). Likewise, positive experiences with IER may reinforce the continued pursuit of IER. Together, evidence for these predictions would uncover the temporal dynamics of IER, and demonstrate that people who seek out support later experience its benefits, and visa-versa.

Method

Participants. We recruited 197 college students from four freshman dormitories at a large private university on the west coast as part of a larger study of social network structure (Morelli, Ong, Makati, Jackson, & Zaki, 2017). To recruit participants, we first contacted the university housing office to identify dormitories whose residents demonstrated high response rates to surveys. Next, we invited residents to participate in the study via e-mail. We successfully recruited 59% to 67% of students at each of the four dormitories, for a total sample of 197 participants. Four participants withdrew from the study due to time commitments ($N = 193$). Students were college freshmen at least 18 years of age ($M = 18.27$ years; $SD = .46$) and comprised a diverse sample with respect to sex (47.7% male) and ethnicity (35.2% Caucasian).

Procedure. On the third week of the school term (Time 1), participants completed an online Qualtrics survey featuring a set of social network nominations, as well as the 16-item IRQ and the Big Five Inventory (BFI; John et al., 2008). Three weeks afterward (Time 2), participants again completed a Qualtrics survey including the same social network nominations. In particular, participants were asked to list the names of up to eight people in their dormitory in response to the following questions, which were presented in randomized order: "(a) Whom have you asked for advice about your social life? (b) Who do you turn to when something bad happens? (c) Whom do you share good news with? (d) Who makes you feel supported and cared for? (e) Who is most empathetic? (f) Who usually makes you feel positive?" Participants responded via free response text entry forms that offered autocompleted suggestions of their fellow residents. Participants were free to nominate any peers who resided in their same dormitory. As a result, participants could nominate fellow residents who were not also participants in this study.

Analyses. We conducted parallel factor analyses over participants' peer nominations to identify the ideal number of explanatory factors. At both time points, we calculated how many total peers each participant nominated, within their dorm, in response to each of the six nomination questions. As in Study 1, we sampled 1,000 iterations for all parallel factor analyses and subsequently performed oblique rotations (minimum residual) following our expectation that factors would moderately intercorrelate. We again followed Hu and Bentler's (1999) recommendation to evaluate absolute model fit by standardized root-mean-square residual (SRMR), root mean square error of approximation (RMSEA), and Tucker-Lewis Index (TLI) metrics. Smaller SRMR/RMSEA values ($\leq .08$ acceptable) and larger TLI values ($\geq .90$ acceptable) signal better model fit (Browne & Cudeck, 1992; Byrne, 1994). After each round of factor analysis, we examined item-factor correlations and only retained factors with more than one item loading $r \geq .5$ (DeVellis, 2012). We further examined the conceptual content of each surviving factor, estimated reliability (α), and calculated interfactor correlations within and across time points.

Next, we ran a series of linear regression analyses to test whether these peer nomination composite totals tracked IRQ measures of IER tendency and efficacy at Time 1 and Time 2. Factor analyses of students' peer nominations yielded two distinct factors, describing how students recruit support from their peers, and how they perceive that support. Notably, these two factors did not distinguish between support for negative versus positive emotions. We therefore generated two IRQ composites reflecting IER tendency and efficacy, by collapsing across IRQ Negative-Tendency and Positive-Tendency scores, and IRQ Negative-Efficacy and Positive-Efficacy scores. We further examined the effect of IRQ scores on nominations, with and without extraversion included as a covariate. We also compared regression models with each covariate against models with both the covariate and the relevant IRQ composite. This approach allowed us to test whether participants' nominations simply reflected their general enjoyment of social contact, irrespective of their emotional goals. As in Studies 3 and

4, we obtained regression coefficients and 95% confidence intervals through bootstrapped regression analyses sampling 1,000 iterations (Preacher & Hayes, 2004).

These linear regression analyses revealed that IRQ Tendency and Efficacy tracked peer nominations at both Time 1 and Time 2 (see *Results* below). We further examined whether peer nominations at Time 1 mediated IRQ predictions over peer nominations at Time 2. These analyses allowed us to test our prediction that support-seeking and perceived support would track one another across time, via IER tendency and efficacy. Mediation models tested the relationships between IRQ scores and peer nominations at Time 1 (*a*), peer nominations at Time 1 and Time 2 (*b*), and IRQ scores and peer nominations at Time 2, with (*c'*) and without (*c*) peer nominations at Time 1 included as a covariate. When direct effects between IRQ and peer nominations at Time 2 (*c*) were not statistically significant, we instead tested for indirect effects via peer nominations at Time 1 (Rucker, Preacher, & Tormala, 2011). These analyses established whether IER tendency and efficacy *indirectly* tracked Time 2 support-seeking and perceived support, via nominations at Time 1, despite no direct relationship. These indirect effect models examined relationships between IRQ scores and peer nominations at Time 1 (*a*), and peer nominations at Time 1 and Time 2 (*b*). Mediation and indirect effect analyses were also bootstrapped utilizing 1,000 iterations.

Results

Factor analyses. Parallel factor analyses confirmed that two factors, reflecting support-seeking and perceived supportiveness, described participants' peer nominations at both time points. Parallel factor analysis of nomination totals at Time 1 first suggested a 3-factor solution. The first two factors loaded at least two items at $r \geq .5$, but the third factor only loaded a single item. Therefore, we proceeded with a 2-factor solution. Each factor in this model loaded three items at $r \geq .5$, none of which cross-loaded at the $r \geq .5$ threshold. This model accounted for 68% of variance in responding and showed strong model fit (Supplementary Table 5). As hypothesized, conceptual analysis revealed two unique factors reflecting participants' (a) seeking support from others, and (b) perceived support from others. Specifically, the first factor loaded peer nominations concerning seeking advice, sharing bad news, and sharing good news, whereas the second factor loaded nominations for perceived empathy, feeling supported and cared for, and feeling positive.

Parallel factor analysis of peer nominations at Time 2 likewise suggested a 2-factor solution. This model accounted for 72% of variance in responding and also showed strong model fit (Supplementary Table 5). At Time 2, item-factor loadings matched those observed at Time 1 with $r \geq .5$ and no items cross-loaded at the $r \geq .5$ threshold. All factors exhibited high reliability (αs = .83–.89; Supplementary Table 6) and moderate to high correlations (rs = .44–.80; Supplementary Table 7) at both time points. Furthermore, the 2-factor solutions outperformed 1-factor solutions at both time points, which accounted for 59% and 67% of variance, respectively. We therefore analyzed IRQ relations with the support-seeking and perceived support factors at both time points.

Support-seeking nominations. Consistent with our first prediction, participants high on IRQ Tendency nominated more peers from whom they had sought advice, and with whom they had shared good or bad news, at both time points (Models 12.1 and 12.3; Table 12). Individuals with high extraversion also nominated more peers for support-seeking at Time 1 (significant) and Time 2 (trending) when extraversion was added as a covariate (Models 12.2 and 12.4). However, extraversion only significantly improved model fit at Time 1, $F(1, 190) = 4.84$, $p = .029$. In both models, IRQ Tendency maintained statistical significance. Participants with high IRQ Efficacy scores also nominated more peers from whom they had sought support at both time points (Supplementary Table 8). However, including IRQ Efficacy as a covariate only significantly improved model fit at Time 2, $F(1, 190) = 4.08$, $p = .045$.

Table 12
Peer Nomination Totals by IRQ Tendency (IRQ-NT/PT) Composites and Extraversion: Support-Seeking Nominations at Time 1 and Time 2 (3 and 6 Weeks)

Model	*b*	CI	*df*	*t*
Time 1 (3 weeks)				
Model 1: IRQ-NT/PT	—	—	—	—
IRQ-NT/PT	.10	[.045, .16]	191	3.37***
Model 2: IRQ-NT/PT + Extraversion	—	—	—	—
IRQ-NT/PT	.085	[.026, .14]	190	2.78**
Extraversion (BFI)	.38	[.054, .73]	190	2.20*
Time 2 (6 weeks)				
Model 3: IRQ-NT/PT	—	—	—	—
IRQ-NT/PT	.079	[.017, .14]	191	2.61**
Model 4: IRQ-NT/PT + Extraversion	—	—	—	—
IRQ-NT/PT	.065	[.0029, .13]	190	2.09*
Extraversion (BFI)	.34	[.0074, .65]	190	1.91^

Note. CI = .95.
^ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Perceived support nominations. Consistent with our second hypothesis, participants who scored highly on IRQ Efficacy nominated more peers as empathic, supportive, caring, and positive, at both time points (Models 13.1 and 13.3; Table 13). By contrast, participants' degree of extraversion failed to significantly track these nominations at either time point when entered as a covariate (Models 13.2 and 13.4). With the inclusion of extraversion, IRQ Efficacy maintained significance and trending significance at Time 1 and Time 2, respectively. Participants' IRQ Tendency scores did not significantly track their perceived support nominations at either time point (Supplementary Table 9).

Mediation and indirect effect analyses: Across-nominations. Consistent with our third prediction, individuals high in IER tendency nominated more peers from whom they sought support at Time 1, and in turn nominated more peers as supportive at Time 2. Specifically, we detected a significant indirect effect of IRQ Tendency scores on perceived support at Time 2, via support-seeking at Time 1. As we reported above, participants high in IRQ Tendency sought support from more of their peers at Time 1, but did not view more peers as supportive at Time 2. Nonetheless, participants who sought support from more peers at Time 1 did nominate more of their peers as supportive at Time 2. A bootstrapped indirect effect analysis confirmed a statistically significant indirect effect of participants' IRQ Tendency scores on their perceived support nominations at Time 2, via support-seeking at Time 1 (Figure 4a), $ab = .049$, $z = 3.00$, $p = .003$, 95% CI [.017, .090].

Table 13
Peer Nomination Totals by IRQ Efficacy (IRQ-NE/PE) Composites and Extraversion: Perceived Support Nominations at Time 1 and Time 2 (3 and 6 Weeks)

Model	*b*	CI	*df*	*t*
Time 1 (3 weeks)				
Model 1: IRQ-NE/PE	—	—	—	—
IRQ-NE/PE	.10	[.019, .18]	191	2.42*
Model 2: IRQ-NE/PE + Extraversion	—	—	—	—
IRQ-NE/PE	.096	[.017, .17]	190	2.17*
Extraversion (BFI)	.095	[−.28, .43]	190	.52
Time 2 (6 weeks)				
Model 3: IRQ-NE/PE	—	—	—	—
IRQ-NE/PE	.10	[.0068, .20]	191	2.28*
Model 4: IRQ-NE/PE + Extraversion	—	—	—	—
IRQ-NE/PE	.090	[.0011, .19]	190	1.94^
Extraversion (BFI)	.17	[−.21, .54]	190	.86

Note. CI = .95.
^ $p < .10$. * $p < .05$.

Following our fourth prediction, individuals high in IER efficacy nominated more peers as supportive at Time 1, and in turn nominated more peers from whom they sought support at Time 2. In particular, perceived support at Time 1 significantly mediated IRQ Efficacy predictions over support-seeking at Time 2. As we previously reported, participants high on IRQ Efficacy perceived more peers as supportive at Time 1, and sought support from more of their peers at Time 2. Participants who nominated more of their peers as supportive at Time 1 further nominated more peers from whom they sought support at Time 2. When we included nominations for Time 1 perceived support in the model, *c* reduced such that mediation was statistically significant in a bootstrapped Sobel test analysis (Figure 4b), $ab = .051$, $z = 2.30$, $p = .021$, 95% CI [.0090, .091].

Discussion

Students' engagement with IER tracked the development of their real-world support networks during the transition to college. First, freshmen high in IRQ Tendency nominated more peers from whom they sought advice, and with whom they shared good and bad news. Second, students who scored highly on IRQ Efficacy measures nominated more of their peers as empathetic, supportive, caring, and positive. Third, students who sought support from more of their peers early in the academic quarter viewed their peers as more supportive after three weeks. Fourth, students who perceived more of their peers as supportive early in the quarter sought support from more peers three weeks later.

Our findings thus clarify how people leverage IER to build new social ties in naturalistic settings. Individuals' general tendency to use IER predicts whether they seek out their peers' support or not during a major life transition. Likewise, individuals' beliefs about IER efficacy track their perceptions of support from their peers. These results suggest that people inclined toward IER enrich their social networks by developing more supportive relationships over time. These data further highlight the temporal dynamics of IER and how it tracks the development of helpful relationships over time through a feed-forward cycle. People who tend to employ IER by seeking support from others later find that support beneficial, which might reinforce them to pursue IER again in the future.

Extraverted students also nominated more peers from whom they sought support, but did not perceive their peers as more supportive. However, students who scored highly on the IRQ still recruited their peers' support more often and viewed their peers as more supportive, controlling for their level of extraversion. This suggests that students' general affinity for social contact could not explain the relationship between IER and their degree of social connectedness. Although we probed social networks across time, these data are correlational, and therefore do not warrant strong causal inference. Nonetheless, our results are consistent with the idea that people pursue IER to promote their emotional goals. Our findings likewise support the view that positive experiences with IER may reinforce individuals to approach IER in the future. Moreover, we find that people may use IER to build close relationships during major life transitions.

General Discussion

We present IER as a key interpersonal phenomenon with far-reaching implications for social and emotional well-being. How individuals engage with IER poses vital implications for relevant social behaviors, experiences, and traits. People who favor IER report experiencing more positive emotion, sharing their emotions more openly, behaving more prosocially toward others, and enjoying greater social connectedness. These individuals also seek out others more often during emotional experiences, and report greater benefits from real-world social support. In addition, they

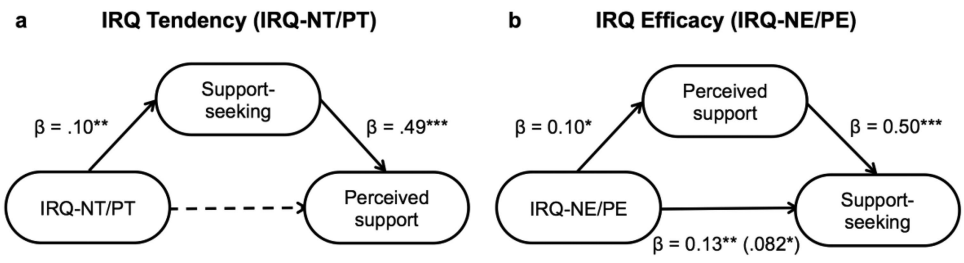

Figure 4. Peer nomination totals by IRQ Tendency and Efficacy composites across Time 1 and Time 2: (a) Indirect effect of IRQ Tendency (IRQ-NT/PT) composite on perceived supportiveness at Time 2, via support-seeking at Time 1, and (b) Mediated effect of IRQ Efficacy (IRQ-NE/PE) on support-seeking at Time 2, via perceived supportiveness at Time 1. * $p < .05$, ** $p < .01$, *** $p < .001$.

develop more supportive relationships within emerging social networks during a major life transition. Critically, these findings cannot be explained by constructs related to IER, such as individuals' use of intrapersonal ER or degree of extraversion. In sum, our data suggest that the way people draw upon IER may powerfully shape their social and emotional lives.

To generate these insights, we examined intrinsic IER through the lens of individual differences. We developed and validated the 4-factor, 16-item Interpersonal Regulation Questionnaire (IRQ), which measures how individuals engage with IER. In two independent samples, the IRQ exhibited highly desirable psychometric properties, such as strong model fit statistics and high reliability. We further show that individual differences in IER are stable over time, as evidenced by the IRQ's high test-test reliability across three months. The IRQ converges with related constructs, dissociates from unrelated constructs, and predicts relevant behaviors and perceptions. Finally, the IRQ clarifies the structure of IER and provides insight into the real-world consequences of how people engage with IER.

IER Tendency and Efficacy

We find that people independently vary by their tendency to pursue IER, and their perceptions of IER's efficacy for managing their emotions. IER tendency and efficacy moderately correlate, such that people who use IER frequently also tend to perceive IER as efficacious. However, some people seek out IER without viewing it favorably, whereas others find IER helpful but fail to pursue it. Furthermore, these two dimensions of intrinsic IER track distinct aspects of individuals' social and emotional lives.

Individuals who typically use IER are more likely to seek out others during emotional circumstances. In Study 3, participants with high IER tendency sought out other people more often in response to experimentally induced emotions. In Study 5, students with high IER tendency likewise nominated more peers from whom they had recently asked advice, and shared good or bad news. Our findings accord with prior evidence that people often manage their own emotions by seeking out other individuals (Schachter, 1959). For instance, people benefit from sharing emotional experiences with others (Jolly, Tamir, & Mitchell, 2015; Páez, Rimé, Basabe, Wlodarczyk, & Zumeta, 2015), and disclosing their own thoughts and feelings (Tamir & Mitchell, 2012; Tamir et al., 2015). Sharing experiences with others engages reward-related brain systems (Kühn et al., 2011; Schilbach et al., 2010) even when individuals cannot interact (Wagner et al., 2015).

In addition, people who perceive IER as more efficacious experience greater benefits from specific instances of social support. In Study 4, participants with high IER efficacy rated recent supportive interactions more favorably. In Study 5, students with high IER efficacy similarly nominated more peers as supportive, caring, empathetic, and positive. The belief that IER is generally helpful could lead individuals to appraise social support as constructive and responsive (Gable et al., 2004; Maisel & Gable, 2009). Conversely, the belief that IER is unhelpful may lead individuals to construe support negatively, such that it threatens their self-efficacy or fosters inequality within their relationships (Bolger & Amarel, 2007; Gleason, Iida, Bolger, & Shrout, 2003).

Future studies should test these predictions by administering standardized social support and evaluating individuals' appraisals of that support. Under such conditions, individuals high in IER efficacy may view identical instances of support more positively than those with low IER efficacy. Alternatively, people with a rosier outlook on IER may instead elicit higher quality support from others. Researchers could test this possibility by video recording individuals' attempts to seek support from others and having independent judges rate the quality of elicited support. This approach could determine whether people recruit better support when they view IER favorably.

We further find that individuals' decisions to seek out IER may interact with their perceptions of IER efficacy over time. First, recruiting support from other people may promote individuals' regulatory goals. In Study 5, students with high IER tendency initially sought support from more of their peers, and later nominated more peers as supportive. Likewise, in Study 4, participants who tend to use IER sometimes rated their supportive interactions with others more favorably. Although correlational, these data suggest that actively seeking out IER may enhance individuals' chances of successfully regulating their emotions. Indeed, people promote their regulatory goals when they strategically pursue IER from many different individuals (Cheung et al., 2015).

Second, successful experiences with IER may reinforce individuals to seek out support again in the future. In Study 5, students with high IER efficacy initially perceived more of their peers as supportive, and recruited support from more peers in the future. Similarly, in Study 3, participants who viewed IER as efficacious were sometimes more likely to seek out other people in response to viewing emotional images. These findings suggest that individuals may be more likely to pursue IER when they experience it positively. This idea coincides with the view that people are more likely to use ER strategies that they view favorably (Gross, 2015).

Implications for Social-Emotional Well-Being

People's use of IER holds important implications for their social and emotional well-being. First, individuals who favor IER report sharing their emotions with others more openly. People may share their emotions to achieve a range of emotional goals (Pennebaker, 1997). For instance, when people express their emotions clearly, they enhance observers' understanding of their feelings (Jakobs, Manstead, & Fischer, 1999; Parkinson, 2005; Williams, Nook, & Zaki, 2018). Individuals may communicate their emotions to observers in order to recruit their support (Gable et al., 2004), or to simply feel better understood after venting (Rimé, 2009). Second, people inclined toward IER report experiencing greater empathy for others. Feeling empathy for other individuals can also bolster one's own well-being (Morelli, Lee, et al., 2015; Morelli, Lieberman, et al., 2015). For example, people who extend empathy to others during stressful circumstances appear to also improve *their own* emotions (Cosley, Mccoy, Saslow, & Epel, 2010; Doré et al., 2017; Taylor, 2006). Future research may investigate whether individuals communicate their emotions or empathize with others for the express purpose of regulating their own emotions.

The way individuals engage with IER further tracks their experience of positive emotion and social connectedness. We find that people disposed toward IER actively foster more fulfilling relationships, which could advance their well-being in multiple ways. Having greater access to social resources helps individuals to perceive stressful events as less threatening, and thus alleviates

their negative emotional reactions (Coan et al., 2006). Closer relationships also provide people with higher quality support following life challenges (Cohen & Wills, 1985) and more opportunities for supportive interactions in the future (Rose, Carlson, & Waller, 2007). Aside from support for negative emotions, strong social ties also provide occasions for positive social interactions (Lakey & Orehek, 2011). In the future, researchers should examine whether people also build social bonds to promote their long-term emotional goals.

Intrinsic and Extrinsic IER

People use IER to influence both their own and others' emotions. Here, we have considered individuals' attempts to change *their own* emotions (*intrinsic* IER following Gross, 2015; Zaki & Williams, 2013). Researchers have previously studied how individuals perceive their access to social support (Cohen & Hoberman, 1983; Zimet et al., 1990), but not how well people believe support works to manage their emotions. Likewise, researchers have investigated how often people tend to use particular ER strategies (Carver et al., 1989; Gross & John, 2003; Niven, Totterdell, Stride, & Holman, 2011), but these measures include limited items related to IER. With the IRQ, we examine how people engage with IER globally, via their tendency to recruit IER, and to perceive IER as efficacious.

Our work further complements research on how people regulate *other individuals'* emotions (*extrinsic* IER following Gross, 2015; Zaki & Williams, 2013). Researchers in this domain have identified individuals' emotional goals for others (e.g., to improve or worsen targets' affect) and degree of cognitive or behavioral engagement with targets as two key dimensions of extrinsic IER (Niven et al., 2009). People also sometimes attempt to increase or decrease others' experience of positive and negative emotions to advance *their own* emotional goals (Netzer et al., 2015). Beyond extrinsic IER, individuals further regulate the collective emotions of their social groups via *group-based ER* (Goldenberg, Halperin, van Zomeren, & Gross, 2015). For instance, individuals adjust their own experience of guilt and anger, according to their perception of the collective's reaction, to alter their group's affective response (Goldenberg et al., 2014).

These emerging fields of study highlight the importance of research investigating the complex affective dynamics that scaffold IER episodes (Butler, 2015). We believe that the continued study of individual differences in IER, both intrinsic and extrinsic, will clarify how diverse social behaviors and emotional goals shape IER episodes. For example, future work may explore whether individuals with high extrinsic IER tendency provide support to other people more often, or whether individuals with high extrinsic IER efficacy are perceived as more supportive.

New Insights into Social-Emotional Phenomena

Interpersonal emotion regulation draws disparate social and emotional phenomena together under a common regulatory framework. Emotional goals are central to this framework, as they are in emotion regulation theory (Gross, 1998). By reframing social coping in terms of individuals' emotional goals, IER interweaves emotion regulation with stress and coping theory. In particular, IER claims that emotional goals drive individuals to use social behaviors, and inform how they evaluate the usefulness of those behaviors, for regulating their emotions (Zaki & Williams, 2013). Our findings support these key IER predictions and thus provide new insights into long-studied forms of social coping.

First, an IER framework reveals the motivation behind the diverse social behaviors that individuals use for emotion regulation. For instance, women with early stage breast cancer vent to other people and seek out their support (Carver et al., 1993; Culver, Arena, Antoni, & Carver, 2002). According to stress and coping theory, such behaviors are coping responses to perceived threats (e.g., Lazarus & Folkman, 1984). This account, however, does not specify how perceived threats drive such behaviors. Moreover, individuals also respond to positive events by seeking out other people and sharing their good news (Langston, 1994; Gable et al., 2004). It is thus unclear why individuals use highly similar social coping behaviors following negative and positive events.

IER proposes that salient events generate emotional goals, and that these goals motivate individuals to regulate their emotions through social interaction. The threat of breast cancer can induce a goal to feel less negative emotion, and thus drive an individual to vent or seek support. Likewise, a positive event can generate the goal to feel more positive emotion, and motivate an individual to share her good news. Indeed, individuals with high IRQ Tendency scores—who use IER to feel less negative emotion and more positive emotion—report increased use of venting, support-seeking, and emotional expression (Study 2), and are more likely to seek out other people (Study 3) and elicit their support (Study 5) in response to both negative and positive events. Future IER research should examine whether other emotional goals (e.g., to feel more negative emotion or less positive emotion) motivate other social behaviors, similar to how they drive unique forms of *intra*-personal ER (e.g., Giuliani et al., 2008; Tamir et al., 2011).

Second, an IER framework further clarifies how individuals evaluate the usefulness of social interaction for emotion regulation. Prior research links how individuals appraise potential threats and how they cope with those threats (Lazarus & Folkman, 1984). For instance, people seek support from other individuals when they are unsure how to respond to academic, financial, and health stressors (Folkman & Lazarus, 1985; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). However, it is unclear how individuals appraise the usefulness of social behaviors such as support-seeking, or how they know to use such behaviors for coping at all. It is also unknown how these interactions inform individuals' appraisals of their relationships (Collins, 1996), their need for social contact (Baumeister & Leary, 1995), and their access to support (Uchino, 2009).

In IER, people form such appraisals by comparing the outcomes of social interactions against their emotional goals. Individuals generate favorable appraisals of interactions that promote their goals for emotion regulation. After venting in response to the threat of breast cancer, an individual compares how she actually feels versus her goal of feeling less negative emotion. Similarly, after sharing the good news of a positive event, she compares her resulting emotional state against her goal of feeling more positive emotion. Emotional goals thus provide a benchmark for individuals to evaluate the benefits of social interaction for emotion regulation. Consistent with this view, individuals high on IRQ Efficacy—who find IER useful for decreasing negative emotion and

increasing positive emotion—report enjoying and desiring close relationships to a greater extent (Study 2), and appraise social support (Study 4) and support providers (Study 5) more favorably following real-world negative and positive events. Future studies of IER should test whether directly manipulating individuals' goals for their own emotions influences how they appraise social regulatory behaviors (e.g., Netzer et al., 2015).

Emotional goals further expose novel connections between the social behaviors that people use for emotion regulation and how they appraise those interactions. When facing controllable stressors, individuals higher on optimism are more likely to pursue social support (Scheier, Weintraub, & Carver, 1986). This finding suggests that individuals anticipate emotional benefits when they seek out social contact. Indeed, Study 5 found bidirectional relationships between how individuals pursue and perceive support over time. Participants with high IRQ Tendency scores initially sought support from more of their peers, and later viewed their peers as more supportive. In addition, participants high on IRQ Efficacy perceived greater support from their peers, and sought more of their peers' support at a later point in time. This pattern of evidence is consistent with the IER postulate that emotional goals motivate social behaviors and inform how those behaviors are appraised. Namely, individuals who advance their emotional goals through social contact may be more likely to appraise those interactions as successful, and thus more likely to pursue social contact again in the future. This interpretation follows the idea that people tend to return to regulatory strategies that have served them in the past (Gross, 2015).

Throughout our work, emotional goals emerge as a core mechanism underlying social forms of coping. These goals resolve long-standing questions about what drives individuals to use social coping and how they appraise its usefulness. Moreover, emotional goals provide new ways of understanding landmark findings in the stress and coping literature. By reframing social behaviors and appraisals in terms of emotional goals, IER extends insights from emotion regulation to the domain of social coping. Likewise, the IRQ builds upon prior measures of social coping by linking variation in social behaviors and appraisals with individuals' emotional goals. Individuals high on the IRQ use a variety of social behaviors to manage their emotions and they appraise those interactions favorably in multiple different ways. The IRQ further reveals novel connections between social behaviors and appraisals through their mutual reliance upon emotional goals. This approach parallels how the Emotion Regulation Questionnaire (ERQ) measures *intra*-personal emotion regulation in terms of individuals' emotional goals (Gross & John, 2003). More broadly, the IRQ complements the ERQ by advancing the study of emotional goals through individual differences.

Critically, although IER partially overlaps with other social and emotional phenomena, it is not entirely redundant with any one of them. In our replication of Study 4, participants high on IRQ Negative-Efficacy (IRQ-NE) perceived greater benefits from real-world support for recent negative events (Appendix C), and this relationship held even when controlling for attachment style and support-seeking. These findings suggest that IER relates to these other constructs, but also cannot be reduced to any one of them. Additional replications of Studies 3 and 4 could likewise test the overlap between IER and these constructs in the context of affiliation or receiving support for positive events. More broadly, future research with the IRQ can further clarify how IER relates to overlapping social emotional phenomena across diverse contexts.

Future Directions in IER Research

Here we show that people appear to manage their emotions by pursuing contact with others, seeking out their support, and building close relationships. Ongoing studies of IER may likewise identify commonplace social behaviors that serve to manage individuals' emotions. Such behaviors may rely more or less upon other individuals' feedback. In some cases, one individual's regulation may depend upon another person's helpful response (*response-dependent* following Zaki & Williams, 2013). In other cases, an individual may benefit from social interaction, independent of how another person responds (*response-independent* following Zaki & Williams, 2013). Researchers may better identify novel forms of IER by considering both of these potential sources.

Furthermore, little is known about the conditions under which specific IER strategies may succeed or fail to promote individuals' emotional goals. For instance, the presence of other people can amplify individuals' positive emotions (Wagner et al., 2015) or exacerbate their stress responses (Allen, Blascovich, & Mendes, 2002; Allen et al., 1991). These social influences over emotion further vary by individuals' degree of familiarity with observers (Edens, Larkin, & Abel, 1992; Jakobs, Manstead, & Fischer, 2001). By manipulating similar social and emotional features in the laboratory, researchers could provide crucial insights into how people engage with IER across diverse settings.

Future research could likewise clarify how people's IER style impacts their real-world relationships with others. We find that IER may promote new social ties in emerging social networks. Although intriguing, there is much more to learn about how particular IER strategies impact different types of relationships. Previous studies of empathy and social support have examined friendly (Meyer et al., 2013), romantic (Coan et al., 2006; Eisenberger et al., 2011), and parent–child relationships (Conner et al., 2012). Research on intrinsic IER should likewise examine how people navigate IER differently across distinct relationships.

In addition, individuals may use and benefit from IER differently depending upon the demographics of their social networks. Some *intra*-personal ER strategies, for example, are more effective than others at certain points throughout the life span (McRae et al., 2012; Silvers et al., 2012; Urry & Gross, 2010) or across distinct cultural contexts (Butler, Lee, & Gross, 2007, 2009). IER may likewise influence relationships differently across various types of social networks. For instance, individuals in East Asian cultures sometimes forgo social support when support-seeking risks burdening other individuals (Kim et al., 2006; Taylor et al., 2004). Further investigation of these circumstances may clarify the social and cultural conditions under which IER proves more or less adaptive for relationships (Dixon-Gordon et al., 2015).

Researchers should also consider how individuals with distinct psychopathologies may recruit or benefit from IER less often (Hofmann, 2014). For example, people with high social anxiety may manage their emotions by avoiding, rather than approaching, other individuals (Mattick & Clarke, 1998). Likewise, individuals with autism or depression may find social interactions less enjoyable, which could undermine their experience of IER (Blanchard, Horan, & Brown, 2001; Chevallier, Kohls, Troiani, Brodkin, &

Schultz, 2012). We find that people who avoid or disparage IER report reduced social engagement and greater loneliness. Reduced engagement with IER could socially isolate individuals with psychopathology over time, and thus exacerbate their symptomology (Hawkley & Cacioppo, 2010). Worsening symptoms could further isolate these individuals, and ultimately increase their risk for morbidity and mortality. Future IER research with clinical populations could clarify which mental illnesses feature breakdowns in IER. Such research could also determine whether different illnesses distinctly impede individuals' tendency to recruit IER, or to perceive IER favorably. Improved understanding of how individuals with psychopathology draw upon IER could thus present new opportunities for both prevention and targeted intervention.

Conclusions

We find that individuals' tendency to use IER, and to perceive IER as efficacious, comprise two key dimensions of intrinsic IER. These dimensions in turn track affiliative behaviors, perceptions of support, the development of supportive relationships, and numerous aspects of social-emotional well-being. We present the Interpersonal Regulation Questionnaire (IRQ) as a reliable and validated measure of IER tendency and efficacy.

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(*Appendices follow*)

Appendix A

The Interpersonal Regulation Questionnaire (IRQ)

Williams, W. C., Morelli, S. A., Ong, D. C., & Zaki, J. (2018). Interpersonal emotion regulation: Implications for affiliation, perceived support, relationships, and well-being. *Journal of Personality and Social Psychology, 115,* 224-254. http://dx.doi.org/10.1037/pspi0000132

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Instructions

Present all 16 items in fully randomized order with the following 7-point Likert scale: (1) *strongly disagree* (2) *disagree* (3) *somewhat disagree* (4) *neither agree nor disagree* (5) *somewhat agree* (6) *agree* (7) *strongly agree.*

Scoring

To determine each subscale score, calculate the sum of responses to each group of four items. To determine the total score, calculate the sum of all four subscale scores.

Negative-Tendency (IRQ-NT)

1. When something bad happens, my first impulse is to seek out the company of others.
2. When I'm having trouble, I cannot wait to tell someone about it.
3. I just have to get help from someone when things are going wrong.
4. I manage my emotions by expressing them to others.

Negative-Efficacy (IRQ-NE)

5. I appreciate having others' support through difficult times.
6. Sometimes I just need someone to understand where I'm coming from.
7. It really helps me feel better during stressful situations when someone knows and cares about what I'm going through.
8. I really appreciate having other people to help me figure out my problems.

Positive-Tendency (IRQ-PT)

9. When things are going well, I just have to tell other people about it.
10. When something good happens, my first impulse is to tell someone about it.
11. When things are going well, I feel compelled to seek out other people.
12. When I want to celebrate something good, I seek out certain people to tell them about it.

Positive-Efficacy (IRQ-PE)

13. I'm happier when I'm with my friends than when I'm by myself.
14. Being with other people tends to put a smile on my face.
15. I find that even just being around other people can help me to feel better.
16. I really enjoy being around the people I know.

(*Appendices continue*)

Appendix B

Convergent and Discriminant Measures

Affective Experience

Carver, C. S., & White, T. L. (1994). The Behavioral Activation System Scale: Reward Responsiveness subscale.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). The Perceived Stress Scale.

Watson, D., Clark, L. A., & Tellegen, A. (1988). The Positive and Negative Affect Schedule.

Interpersonal ER

Carver, C. S. (1997). Brief COPE: Using Emotional Support, Using Instrumental Support, and Venting Subscales.

Intrapersonal ER

Carver, C. S. (1997). Brief COPE: Active Coping and Self-Distraction subscales.

Gross, J., & John, O. (2003). Emotion Regulation Questionnaire: Reappraisal subscale.

Nonsocial Personality

John, O. P., Naumann, L. P., & Soto, C. J. (2008). The Big Five Inventory: Conscientiousness, Openness, and Neuroticism subscales.

Patton, J. H., & Stanford, M. S. (1995). Barratt Impulsiveness Scale: Self-Control Subscale.

Prosociality

Davis, M. H. (1983). Interpersonal Reactivity Index: Empathic Concern and Perspective-Taking subscales.

John, O. P., Naumann, L. P., & Soto, C. J. (2008). The Big Five Inventory: Agreeableness subscale.

Social Connectedness

Baron-Cohen, S., Wheelwright, S., Skinner, R., Martin, J., & Clubley, E. (2001). Adult Autism Spectrum Quotient: Social Skill and Communication subscales.

Collins, N. L. (1996). Revised Adult Attachment Scale–Close Relationships Version

Leary, M. R., Kelly, K. M., Cottrell, C. A., & Schreindorfer, L. S. (2013). Need To Belong Scale.

Mattick, R. P., & Clarke, J. C. (1998). Social Interaction Anxiety Scale.

Mehrabian, A. (1976). Measure of Sensitivity to Rejection.

Russell, D. (1996). UCLA Loneliness Scale.

Social Desirability

Strahan, R., & Gerbasi, K. (1972). Short, homogeneous versions of the Marlow-Crowne Social Desirability Scale.

Social Sharing of Emotion

Gross, J. J., & John, O. P. (1997). Berkeley Expressivity Questionnaire.

Gross, J., & John, O. (2003). Emotion Regulation Questionnaire: Suppression subscale.

John, O. P., Naumann, L. P., & Soto, C. J. (2008). The Big Five Inventory: Extraversion subscale.

Social Standing

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Subjective Socioeconomic Status (SES) Scale.

(*Appendices continue*)

Appendix C

Replication of Study 4

To further establish the predictive validity of IER, we replicated and extended one condition from Study 4 with a new sample. First, we sought to replicate our original finding that individuals high on IER efficacy perceived social support more favorably following real-world negative experiences. Second, we tested whether this relationship could be explained by individual variation in secure attachment style, negative expressivity, extraversion, or instrumental and emotional support-seeking.

A group of 400 new participants completed the same procedure described in Study 4 for recent negative experiences only. We recruited 400 participants from Amazon Mechanical Turk and ceased data collection at target $N = 400$. We collected 398 complete questionnaires and 2 incomplete questionnaires. We removed data from one participant who completed the survey twice (final $N = 396$). Participants were U.S. citizens over 18 years of age ($M = 36.5$ years; $SD = 11.1$ years) and diverse with respect to gender (48.7% male) and ethnicity (78.5% Caucasian).

After writing about a recent negative experience, and rating the quality of support they received, participants completed the IRQ, the AAS closeness subscale, the BEQ negative expressivity subscale, the BFI extraversion subscale, and the COPE instrumental and emotional support-seeking subscales. As in the original study, participants rated their negative experiences as very negative on a 7-point Likert scale ($M = 5.33$; $SD = 1.34$) compared with an equal-length vector of 'not at all negative' responses (all 1s), $b = 4.32$, $t(395) = 64.34$, $p < .001$, 95% CI [4.20, 4.46]. We conducted linear regression analyses that examined the relationship between the IRQ Negative-Efficacy (IRQ-NE) subscale and composite support ratings with and without covariates.

First, we replicated our original finding that participants who scored highly on the IRQ-NE rated recent support more favorably (Table C1). Second, we found that the IRQ-NE maintained statistical significance with four of the five tested covariates and retained marginal significance with the fifth covariate, including AAS closeness, BEQ negative expressivity, BFI extraversion, COPE instrumental support-seeking, and COPE emotional support-seeking.

In summary, we find that IER predicts how individuals perceive social support for real-world negative events, independent of individual differences in secure attachment style, negative expressivity, extraversion, and instrumental and emotional support-seeking. These data replicate and extend our original findings in a novel sample to further establish the predictive validity of IER.

Table C1
Perceived Support Ratings by the IRQ Negative-Efficacy (IRQ-NE) Subscale, Closeness, Negative Expressivity, Extraversion, Instrumental Support, and Emotional Support: Support for Negative Experiences

Model	*b*	CI	*df*	*t*
Model 1: IRQ-NE	—	—	—	—
IRQ-NE	.090	[.052, .13]	394	5.33***
Model 2a: IRQ-NE + Closeness	—	—	—	—
IRQ-NE	.065	[.023, .11]	393	3.55***
Closeness (AAS)	.046	[.013, .080]	393	3.23**
Model 2b: IRQ-NE + Negative expressivity	—	—	—	—
IRQ-NE	.095	[.058, .13]	393	5.48***
Negative expressivity (BEQ)	−.015	[−.039, .012]	393	−1.28
Model 2c: IRQ-NE + Extraversion	—	—	—	—
IRQ-NE	.079	[.046, .12]	393	4.63***
Extraversion (BFI)	.030	[.0080, .048]	393	2.89**
Model 2d: IRQ-NE + Instrumental support	—	—	—	—
IRQ-NE	.061	[.020, .10]	393	3.26**
Instrumental support (COPE)	.16	[.049, .28]	393	3.30**
Model 2e: IRQ-NE + Emotional support	—	—	—	—
IRQ-NE	.034	[−.0063, .075]	393	1.78^
Emotional support (COPE)	.28	[.17, .39]	393	5.47***

Note. CI = .95.
^ $p < .10$. ** $p < .01$. *** $p < .001$.

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