Choosing emotion regulation strategies: The effects of interpersonal cues and symptoms of Borderline Personality Disorder

DISSERTATION

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Abstract

Selecting interpersonal behavior that is best suited to a situation relies on identifying and incorporating cues. Among these cues may be the emotion of interaction partners or the intimacy of the relationship. One situation in which it may be particularly important to use information from interpersonal cues may be in the case of interpersonal emotion regulation. Emotion regulation allows us to motivate and organize behavior. Some emotion regulation strategies rely on interactions with others; these are referred to as Interpersonal Emotion Regulation strategies (IER). Use of IER when environmental cues suggest such strategies may be unwelcome or inappropriate may result in unsuccessful attempts at regulation, increased dissatisfaction in relationships, or both. One aim of the current investigation was to understand whether BPD symptoms were related to impaired use of interpersonal cues. In this study, participants (N= 174) were asked to indicate the likelihood of using IER in vignette scenarios which varied by cues of emotion (i.e., anger or neutral emotion) and relationship intimacy (i.e., high intimacy or low intimacy relationship). There was no significant difference in participant ratings of the likelihood of using interpersonal emotional regulations strategies when and anger cue was presented versus when it was not, $t(172) = -.88$, $p = .38$. Participants reported that the mean likelihood for using interpersonal emotion regulation strategies was higher when a cue of intimacy was present, when it was not, such that individuals were more likely to use F-

IER when intimacy cue was present, $t(172) = -2.82$, $p = .01$. There was also a significant difference between groups presented with intimacy cue and not presented with intimacy cue on interpersonal factors like "How good a time is this to talk to this person about how you feel?" $t(172) = -4.02$, $p<.01$. This result might mean that cues of intimacy are particularly relevant in the likelihood of engaging functional interpersonal emotion regulation strategies. The only predictor associated with the use of Dysfunctional interpersonal emotion regulation strategies was BPD symptoms. The prediction that individuals with elevated BPD symptoms would be different in their use of cues like anger and intimacy was not supported. There was no significant interaction between the presence of an intimacy cue and the presence of an anger cue, $F(1,170)=1.6$, $p = .20$. A limitation of the current study may be the strength of the emotional induction and the reliance on participants' accuracy in predicting their own behavior. Future studies could improve upon the current study by creating laboratory scenarios to more directly manipulate emotion and interpersonal cues.

Dedicated to those who have struggled to manage difficult emotions and the people who have helped them.

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Chapter 1: Introduction

Emotions and emotional expression serve social and communicative functions. In this way, emotion regulation not only serves to relieve the individual of aversive emotional states, but also to help manage and preserve interpersonal relationships. The social interactions that form and maintain interpersonal relationships are governed by a set of interpersonal cues. Some of these cues convey information about the relationship, while others convey information about the effectiveness or appropriateness of certain interpersonal behaviors in the context of a particular relationship, both in the moment and in the long term. Given that many emotion regulation strategies rely directly on interpersonal interaction, understanding how individuals use interpersonal cues to inform the use of emotion regulation strategies is central to understanding how impairments in either one of these domains may develop and/or contribute to impairments in the other. Emotional dysregulation and interpersonal dysfunction are understood to be key problem areas of Borderline Personality Disorder (BPD). For this reason, symptoms of BPD may impact the relations of emotion regulation and interpersonal functioning, both directly and through interaction effects.

Interpersonal Cues

Interpersonal relationships and the momentary interactions on which they are based are governed by a set of social rules, both explicit and implicit, indicated by verbal and non-verbal cues. Some individuals are sensitive to subtle cues embedded in social situations and adjust their behavior accordingly (Shoda, 1996). Individuals differ in the ability to detect and interpret non-verbal cues like facial expression (Hall & Murphy, 2006). A number of factors have been associated with these differences, including personality, psychological and socio-demographic characteristics, and social and occupational functioning (e.g., Davis & Kraus, 1997; Matsumoto et al., 2000; Nowicki & Duke, 1994; Pickett, Gardner, & Knowles, 2004). In 2001, Cheng and colleagues defined discriminative facility as the ability to discriminate the appropriateness of behavior in a given situation based on subtle cues about the situation's psychological meaning. They conducted a study with 50 working adults in Hong Kong to investigate the relationship between discriminative facility and the perceived quality of interpersonal interactions (Cheng, Chiu, Hong, & Cheung, 2001). Participants completed the Extended Miller Behavioral Styles Scale (EMBSS; Cheng et al., 2000) for which participants are presented with stressful situations and asked to choose among responses previously rated for appropriateness. The authors found that the ability to choose the most appropriate response was positively associated with perceived social support and the probability of pleasant interactions; they

also found that there were individual differences in the tendency to choose the appropriate response (Cheng et al., 2001). The authors made the argument that the ability to discriminatively vary strategies based on information about the environment increased the likelihood of effective outcomes.

Social information, including past behavior, facial familiarity, and emotional expressions, has been shown to influence individuals' behavior in social problem solving dilemmas (Boone, Declerck, & Suetens, 2008). In a study conducted by Boone and colleagues (2008), participants were allowed to meet in groups of four to raise trust and reduce social distance before playing a mixed motive game (akin to the Prisoner's Dilemma game) with one partner. In the analysis of partner choice, information about the social behavior of players in the previous rounds was related to the likelihood of cooperation from their interaction partner in subsequent rounds. The researchers also provided a portion of participants the opportunity to interact with one another prior to beginning the game to increase familiarity. In these cases, although the social information is peripheral to the situation itself (in that it may be about interactions with former partners or is from a situation other than the current task), it provides information about issues such as the trustworthiness of the interacting person and/or the likelihood of attaining mutual cooperation, and thereby plays a role in tacit reasoning. The data from the study suggested that participants did incorporate the interpersonal cues associated with past behavior, facial familiarity, and emotional

expressions in their strategic selection of partners, opting for partners who were more familiar, or who had cooperated in the past for cooperation in subsequent mixed-motive games.

Emotion as an interpersonal cue

Emotion is an important interpersonal cue embedded in social interactions (Averill, 1980, 1982; Campos, Campos, & Barrett, 1989; Ekman, 1992; Lazarus, 1991; Ohman, 1986). Emotions organize physiological, behavioral, experiential, and cognitive responses intrapersonally and interpersonally (e.g., Levenson, 1992). The social-functional approach to emotion describes emotion as a vehicle for organizing adaptive responses to social problems and capitalizing on social opportunities in ongoing interpersonal relationships (Keltner & Haidt, 1999). According to the social-functional approach, each emotion is understood to serve an interpersonal function. The personal experience of an emotion, or the interpretation of another's emotional expression of certain emotions (e.g., anxiety, love, desire, or gratitude), and emotional dispositions (e.g., positive affectivity) govern individual and interpersonal behaviors that facilitate the formation of social bonds (e.g., Bowlby, 1969; Buss, 1992; Hazan & Shaver, 1987; Trivers, 1971; Watson, 1988; Watson, Clark, McIntyre, & Hamaker, 1992). The expression of sadness and distress are understood to elicit sympathy, helping, and increased proximity to others (Campos et al., 1989; Eisenberg et al., 1989). Van Kleef (2009) suggests that a primary function of emotion is to guide interpersonal

interactions by communicating information about the expresser's feelings, goals, motives, and intentions.

In 2009, Van Kleef introduced the Emotions as Social Information model, which describes emotional expression as influencing observers by eliciting affective reactions in them and or/by triggering inferential processes. For example, sympathy, anger, jealousy, amusement, and embarrassment are emotions that support inferences about the intentions of the expresser and allow the perceiver to select behaviors that maintain, protect, and restore social bonds when those bonds are threatened (Averill, 1982; Eisenberg et al., 1989; Keltner & Buswell, 1997; Solomon, 1990). Van Kleef further proposed that elicitation of affective reactions or triggering of inferential processes depends on the observer's motivation and on social-contextual factors. For example, motivation to affiliate or distance oneself from the emotional expresser (e.g., social hierarchies) may regulate affective response in the same way that the social context might regulate a behavioral response or bias inferential processes. Using this conceptualization, emotion serves as a cue impacting the selection of interpersonal behaviors, including interpersonal emotion regulation strategies.

Emotional displays have also been found to communicate social intentions that inform the behavioral selection of those who receive the cue, specifically whether to strike or flee, offer comfort or play (e.g., Fridlund, 1992). Emotion is frequently communicated non-verbally. The non-verbal expression of emotion

can be richly communicative (e.g., Fridlund, 1994). Non-verbal cues can intentionally or unintentionally communicate information about an individual's interpretation of a situation, action intent, relation to another person, or emotional state (e.g., Blair, 2003, Ekman et al., 1987; Horstmann, 2003). By communicating the sender's internal state, facial and verbal expressions of emotion can also elicit or terminate behaviors of the observer. Sad expressions have been linked with the elicitation of nurturance and inhibition of aggression in observers of that emotional expression (e.g. Eisenberg et al., 1989; Miller & Eisenberg, 1988), and angry expressions have been shown to curtail behavior that violates social rules or expectations (e.g. Averill, 1982; Horstmann, 2003). Communication of emotion, particularly non-verbal communication, may not include explicit information about what is expected or desired from the person seeing the expression. In these cases emotion is an implicit cue rather than explicitly directive.

The verbal and non-verbal expression of emotion also signals characteristics of the sender and receiver's relationship; for example, displays of anger communicate the sender's relative dominance and hostility towards the receiver (Knutson, 1996).

Knutson found data to support the idea that these expressions of emotion also send information about the status of ongoing relations. Individuals use social cues like emotion to try to predict the mental states of others (Frith & Frith,

2006). Kring and Neal (1996) made the argument that the coordinated engagement of social cue interpretation is important for social interaction, and that disruptions in this process are predictive of negative interpersonal consequences, such as impaired relationship functioning. Emotion has repeatedly been identified as a cue that impacts the interpretation of social interactions (Olsson & Ochsner, 2008). Therefore, the impaired use of this cue can be expected to be associated with impairments in interpersonal functioning.

Intimacy as an interpersonal cue

Over the last 20 years, research has supported the proposition that emotional disclosure is influenced by the progression of relationship closeness from acquaintanceship through intimacy. As intimacy increases, the breadth, depth and spontaneity of communication increases (Bowers, Metts, & Duncanson, 1989; Knapp & Vangelisti, 1992). Conversely, if one perceives that the interaction partner does not care about his or her welfare, that person should be reluctant to express emotion due to the decreased likelihood of receiving a supportive response. In fact, the partner may even exploit vulnerabilities that are revealed. And although intimate disclosures can increase the perception of intimacy (Reis & Shaver, 1988), they also have the potential to violate boundaries and thereby damage relationships. The potential for harm is managed by selecting contexts appropriate for disclosure, and that selection process is guided by interpersonal cues. Existing research suggests that individuals selectively

express emotion to close others such as parents, family members, best friends, and romantic partners, and rarely to people who do not belong to these circles (Clark & Brissette, 2000, 2003; Clark, Fitness, & Brissette, 2001; Clark & Taraban, 1991, study 2; Pennebaker et al., 2001; Rime´, Mesquita, Philippot, & Boca, 1991; Zeaman & Garber, 1996). In a study by Laurenceau, Barrett, and Pietromonaco (1998, Study 2) data were obtained from participant reports of feeling understood, cared for, and accepted, as well as reports of perceived intimacy after self-disclosures during partner interactions over a period of two weeks. Self-disclosure of emotion was found to significantly predict reported feelings of intimacy, after controlling for self-disclosure of facts and partner disclosure. Highly intimate disclosures to casual acquaintances are considered less appropriate, and thus non-normative, compared to less intimate disclosures (Chaiken & Derlega, 1974). Clark and Finkel (2005) asked both partners of 88 heterosexual romantic couples to complete questionnaires assessing communal orientation, the degree to which they express emotions like anger, anxiety, happiness and joy, in two different relationship types (intimate relationships and business relationships). Participants were prompted with "When you feel (emotion word), to what extent do you express it in (relationship type)?" A significant main effect of relationship type (i.e. close relationships or business relationships) on the likelihood of disclosure was found for all 5 emotions investigated in the study (Clark & Finkel, 2005). The authors attributed this main

effect to the interpretation that a partner who cares about one's welfare would be more likely to be responsive to the individual's needs. Taken together, these studies indicate that relationship intimacy serves as a cue that impacts the likelihood of emotional disclosure, and by extension, use of interpersonal emotion regulation strategies.

Emotion Regulation

Emotion regulation refers to the processes, both intrinsic and extrinsic, that are responsible for learning to recognize, monitor, evaluate and modify emotional reactions (Thompson, 1994). Emotion regulation also enables us to reduce levels of negative emotions and maladaptive behavior that may cause distress (Cicchetti, Ackerman, & Izard, 1995). The modification of these reactions is typically necessary for initiating, motivating, and organizing adaptive behavior. Emotion regulation strategies, or patterns of strategy use, can affect relationships, well-being, and stress (Gross, 2002; Hochschild, 1983). One main function of emotion regulation strategies is to reduce negative affect. Not all strategies are equally adaptive in this pursuit. There is a transaction between interpersonal emotion regulation and the relationships in which it occurs.

Interpersonal Emotion Regulation Strategies.

One of the many connections between emotion regulation and social functioning is the role that interpersonal interactions can play in the process of emotion regulation. In 2000, Zech found that 89% (N = 1024) of participants

believed that speaking to someone about a negative emotional experience would bring some amount of relief. Speaking with others about an emotion is one strategy among those identified as *interpersonal emotion regulation strategies*. This category can be understood to include any strategy that relies on interaction with another person for the purpose of changing the valence or intensity of an emotional experience. This includes strategies such as asking for advice, seeking physical contact, or talking to someone about feelings. For example, when feeling angry about a conflict with a partner, one might choose to call a friend to ask what the friend would do in a similar situation. One might also choose to seek a hug or comforting touch. Alternatively, one might choose to talk to a friend or family member in order to express the anger experienced as a result of the conflict.

"Adaptivity" is here operationalized as the ability to use information about a situation to select behavior that increases the likelihood of achieving desired outcomes. It requires behavior change to effectively serve an individual's goals in a situation. Therefore, maladaptive behavior can be operationalized as behavior that does not change in relation to the demands of the situation. This behavior is also less likely to achieve the individual's goals, including but not limited to emotional goals, in that situation. How well suited a strategy is to a situation may be conveyed by interpersonal cues.

Interpersonal strategy selection cues

Many factors have the potential to impact the decision to regulate emotions with the help of an interaction partner. Among them are information about the intimacy of the relationship with the potential interaction partner and the partner's emotional state (e.g., negative affect). Information about the intimacy of a relationship informs interpretations about the appropriateness of emotional disclosure and the likelihood of receiving validation and support. Relationships in which emotion has been disclosed (e.g., for the purpose of interpersonal emotion regulation) can become more intimate. The perception of intimacy, therefore, may serve to communicate that a relationship partner has been willing to accept emotional disclosures in the past and may be willing to do so again in the future. Thus, cues about relationship intimacy may guide inferences about the potential response of the interaction partner; in turn, these inferences would then be expected to impact the likelihood of choosing a strategy that relies on that partner (i.e., interpersonal emotion regulation strategies) versus strategies that rely upon oneself (i.e., intrapersonal emotion regulation strategies).

Expressions of emotional state can communicate information about the availability of an interaction partner in that moment. Negative emotional expressions, like anger, can communicate that the interaction partner is not receptive to affiliative contact and thereby can be expected to reduce the likelihood of approaching that partner. Anger may impair an individual's ability

to regulate an interaction partner's emotions because of factors such as narrowed attentional focus or emotion-congruent bias in informational processing. For example, if one wishes to return to emotional baseline from sadness triggered by the harsh words of a significant other, an angry interaction partner might respond with mood congruent negative or aggressive evaluations of others, which may increase sadness or trigger anger, neither of which help obtain the goal of returning to emotional baseline. Additionally, if someone is in need of support, failure to acknowledge that need before attempting to achieve one's own emotion regulation goals may convey a lack of cooperative orientation and may affect motivation to cooperate in the future. In other words, satisfying one's own needs at the cost of attending those of an interaction partner has the potential to damage the relationship.

Borderline Personality Disorder

BPD is characterized by intense negative emotions, identity confusion, impulsive behaviors, and interpersonal difficulty. The Diagnostic and Statistical Manual of Mental Disorders 5th edition (American Psychiatric Association, 2013, APA, 2013) defines BPD as "a pervasive pattern of instability of interpersonal relationships, self-image, and affects, as well as marked impulsivity, beginning by early adulthood and present in a variety of contexts…" (p.663). Of the myriad difficulties associated with BPD, researchers and clinicians consistently identify

emotion regulation and interpersonal relationships as the main problem areas (Putnam & Silk, 2005).

In section III of the DSM-5 (APA; 2013) is an alternative model for Personality Disorders. The proposed diagnostic criteria for BPD in this section include impairments in empathy, which are described as "compromised ability to recognize the feelings and needs of others associated with interpersonal hypersensitivity (i.e., prone to feel slighted or insulted)" and "perceptions of others selectively biased toward negative attributes or vulnerabilities." (p. 766). It is proposed that these impairments are characterized by "intense, unstable, and conflicted close relationships, marked by mistrust, neediness, and anxious preoccupation with real or imagined abandonment," and "close relationships often viewed in extremes of idealization and devaluation and alternating between over-involvement and withdrawal." (p. 766).

Hill, Pilkonis, Morse, Feske, Reynolds, and Hope (2008) performed a study in which social domain dysfunction was investigated in individuals with BPD, Avoidant Personality Disorder (AVPD), and a comparison group without personality disorders. This study included a 'domain disorganization' scale, meant to reflect the extent to which behavior within each domain is consistent with the expectations of said domain based on domain descriptions created from the results of a previous study. Domain dysfunction was assessed via the Revised Adult Personality Functioning assessment (Hill, J., Harrington, R., Fudge, H.,

Rutter, M., and Pickles, A.;1989). Domain dysfunction was associated with a 16-fold increase in the probability of a categorical personality disorder diagnosis. The findings of Hill et al. indicate a relationship between personality disorder diagnoses and impairments in the use of interpersonal cues that serve as guidelines for behavior appropriate to a particular social domain. They also found that domain dysfunction was uniquely associated, not only with meeting diagnostic threshold, but also with symptom count for both AVPD and BPD. Given that symptom count for BPD was linearly related to domain dysfunction it is possible that there would be an association between symptoms and impaired interpersonal functioning even in a non-clinical sample as a result of reduced responsiveness to interpersonal cues or interpretations of situational demands.

BPD and emotional cues

Difficulties in interpersonal functioning experienced by individuals with BPD may result from differences either at the level of recognition of or response to interpersonal cues. However, there is evidence to suggest that individuals with BPD recognize emotional stimuli. Wagner and Linehan (1999) reported that when compared to controls with and without a history of childhood sexual abuse, women with BPD more accurately labeled fearful facial expressions. In fact, data from a study by Lynch, Rosenthal, Kosson, Cheavens, Lejuez, and Blair (2006) indicated that individuals with BPD are not only as accurate as controls in the recognition of emotion in a facial multi-morph task, but also respond to these cues

more quickly. In the task, participants were asked to categorize the image of a face progressing from 0% to 100% expression of a prototypic emotional expression. Participants were asked to identify, as early as possible in the progression, whether the emotion was anger, fear, sadness, surprise, disgust, or happiness. They found that individuals with BPD were generally more accurate at identifying facial expressions of anger, fear, and disgust and responded at a lower percentage of prototypical expression, and thus more quickly, than healthy controls, regardless of the valence of the emotion presented. Because the participants with BPD did not make more errors, it is unlikely that the differences were the result of impulsive responding. Rather, such findings suggest that individuals with BPD may demonstrate a superior ability to detect changes in facial features associated with emotional expression. Because individuals with BPD responded earlier in the progression than did controls, the results regarding the speed and accuracy of these individuals also cannot be attributed to skill at recognizing solely prototypic emotional expressions. Lynch et al. suggest that the rapid identification of others' emotions may be advantageous, assuming the appraisal regarding the action tendency associated with that emotion is also accurate. For individuals with BPD, who have demonstrated the ability to quickly and accurately recognize emotional cues, and still experience impairments in interpersonal functioning, it may be the case that they are not changing their behavior effectively in response to these cues. To the degree that cues embedded

in emotional expression are not impacting behavior, interpersonal behaviors, interpersonal conflict or impairment in functioning may result.

BPD and intimacy cues

Reduced discrimination among social resources may be another factor that contributes to the interpersonal difficulties of individuals with BPD. Research by Clifton, Pilkonis, and McCarty (2007) indicated that whereas participants without personality disorders were most likely to seek advice from individuals they identified as being more central to their social support networks, participants diagnosed with BPD were just as likely to seek advice from individuals they indicated were not close; thus, appearing to be less impacted by intimacy cues. Social support networks include relationships of varying levels of intimacy; individuals may benefit from being able to choose which relationships can support emotional disclosures and can be relied on for emotion regulation. If cues indicate that the closeness of a relationship does not support certain levels of emotional disclosure, attempts to regulate emotion in that relationship may be unsuccessful and may also damage the relationship if the other partner is made uncomfortable by the disclosure or by being expected to provide emotional support.

Sarason et al. (1983) defined social support as "the existence or availability of people on whom we can rely, people who let us know that they care about, value, and love us" (p. 127). Therefore, perceived social support serves as

an informational cue regarding whether potential interaction partners are available or willing to assist the individual. Social support may also refer to behaviors performed by these individuals that demonstrate that they care about, value, or love us. Among the possible expressions of social support is assistance in the process of emotion regulation in times of distress. In an earlier study (Forsythe, 2011), participants completed self-report measures including the Measure of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) and the Personality Assessment Inventory–Borderline subscale (PAI-BOR; Morey, 1991). Participants were also presented with vignettes describing an emotionally arousing situation and were prompted to identify the emotion and rate the probability of using each of four emotion regulation strategies. I found a positive correlation between the perception of social support and the use of interpersonal, particularly functional, emotion regulation strategies. These strategies included asking for advice, asking for help, seeking physical contact, or talking to someone about feelings. I also found a negative correlation between BPD symptoms and the perception of social support. The relationship between perception of social support and the selection of interpersonal emotion regulation strategies was moderated by BPD symptoms such that the relationship was less strong for individuals with higher BPD symptoms. These results were interpreted to mean that whereas individuals with lower BPD symptoms may engage in more interpersonal emotion regulation when they perceive others as helpful or willing

to help, individuals with higher BPD symptoms may engage in roughly the same level of interpersonal emotion regulation, whether or not others are perceived as available or desirable for support. The fact that social support had less impact on emotion regulation strategy selection in the presence of higher levels of BPD symptoms suggests that this cue about available resources may not be incorporated into strategy selection the same way as it might be for individuals without elevated BPD symptoms.

The Present Study

Kring (2001) proposed that the process of emotion regulation in disordered and non-disordered individuals is essentially the same. She noted, however, that individuals suffering from some form of psychopathology are impaired regarding the use of one or more emotion regulation strategies (i.e., using particular strategies too frequently, too infrequently, or in a less than optimal way). One important consideration that has been acknowledged in recent years is that sensitivity to non-verbal cues does not have to involve the accurate interpretation of those cues (Bernieri, 2001). In other words, cue sensitivity relates to cue detection and does not necessitate effective application of the cue information to behavioral responses such as the selection of emotion regulation strategies.

Use of emotion regulation strategies that rely on interpersonal interactions when cues suggest these strategies may not be welcome, and may result in

unsuccessful attempts at regulation, increased dissatisfaction in relationships, or both. Previous research suggests that interpersonal cue use may be impaired in individuals with BPD symptoms. In the present study, two relevant interpersonal cues were investigated: non-verbal emotion expression and relationship intimacy. Emotional expressions of anger convey that the individual might be at risk of incurring a hostile response from that interaction partner or that the partner might be less able to assist in regulation goals. Therefore, anger cues should be negatively associated with the likelihood of interpersonal emotion regulation. Intimacy is positively associated with the likelihood and expectation of disclosure of negative emotions in a relationship (Reiss & Shaver, 1988). Therefore, cues conveying information that a relationship is intimate should be positively associated with the likelihood of interpersonal emotion regulation.

Hypotheses

Hypothesis 1:

Hypothesis 1a: The likelihood of interpersonal emotion regulation strategy use will differ based on the presence or absence of an anger cue.

Hypothesis 1b: BPD symptoms will moderate the relationship between anger cues and the likelihood of interpersonal emotion regulation such that differences between conditions will be smaller at higher levels of BPD symptoms.

Hypothesis 2:

Hypothesis 2a: The likelihood of interpersonal emotion regulation strategy use will differ based on the presence or absence of an intimacy cue.

Hypothesis 2b: BPD symptoms will moderate the relation between cues of relationship intimacy and interpersonal emotion regulation such that differences between conditions will be smaller at higher levels of BPD symptoms.

Hypothesis 3:

There will be an interaction effect between intimacy and anger such that individuals will engage in the most interpersonal emotion regulation when an intimacy cue is present and an anger cue is not and the least amount of interpersonal emotion regulation when an intimacy cue is not present and an anger cue is present.

Chapter 2: Methods

Research Design

This study utilizes a cross-sectional, 2x2 between-subjects design. The first factor is the emotion of the interaction partner in the vignette. The two levels of this factor are anger and neutral emotion (no anger cues). The second factor is intimacy. The two levels are high intimacy and low intimacy. Data were collected from 174 participants who were assigned to each cell via stratified randomization. Each cell contained ten individuals who scored a 38 or higher on the Personality Assessment Inventory-Borderline subscale (PAI-BOR) at pre-screening. When data collection ended at the deadline for use of the participant pool, the cells contained unequal numbers of total participants. There were 44 participants who completed the condition with intimacy cue present/anger cue present, 43 participants in the anger cue present/ intimacy cue not present, and 42 participants each in the intimacy cue present/anger not present and the anger cue not present/intimacy cue not present conditions.

Participants

Participants (N = 174) were undergraduate students enrolled in an introductory psychology course at The Ohio State University. The inclusion criterion was that participants be at least 18 years of age; there were no exclusion criteria. The mean age of the participants was 19.44 (*SD* = 2.7). As proposed, all individuals with pre-screening PAI-BOR scores over 38 were invited by e-mail

message to participate in the study. These pre-screened students were regularly invited to participate in the study until 40 of these prescreened students had participated. At the time of data collection, 31 of the 174 participants scored 38 or above on the PAI-BOR at the time of the study. The demographic characteristics of this sample are presented in Table 1.

Measures

Interpersonal Emotion Regulation Vignettes; Cues (IER; unpublished). Vignettes were created to explore the impact of anger and intimacy cues. Each vignette features one level of each of the two cue variables, resulting in four possible combinations. For each combination (i.e., anger/low intimacy, anger/high intimacy, no anger/low intimacy, no anger/high intimacy), there are three vignettes, resulting in a total of 12 vignettes (see Appendix B). Each vignette begins by explaining that the reader has experienced an emotionally arousing scenario (e.g., finding out that ex- partner has stolen money from him/her) and describing the reader's relationship to someone with whom the reader will be interacting (i.e., a friend or cousin).

In each set of anger cue vignettes, the anger cue is presented in three different ways with one of each cue presentation in each of the three vignettes. In one, study participants are told that the target's posture and facial expression are consistent with anger. In the second, the text indicates that the participants clearly recognize anger, and in the third, it is mentioned that the interaction partner seems

angry. For the vignettes meant to be neutral (no anger cue) the sentences containing these cues were not presented. In the intimacy cue vignettes, the cue is a statement indicating a history of emotional intimacy in the relationship (e.g., "The two of you ended up spending lots of time together, and you bonded over navigating the new experiences that have come along with college. You have seen each other angry, stressed, and homesick. You have become very close"). In the low intimacy vignettes, this indication is replaced with the phrase "You don't know [the partner] well."

Each vignette is followed by questions regarding the likelihood of using each of eight interpersonal strategies in that scenario. The questions about interpersonal strategies were adapted from the Regulation of Emotion Questionnaire (REQ; Phillips & Power, 2007). Created to address individual differences in emotion regulation, the 21-question REQ assesses the degree to which individuals choose strategies which regulate emotions through drawing on intrapersonal/interpersonal resources (e.g., cognitive reappraisal, asking others for help, respectively). Correlations between the interpersonal scale of the REQ and the IER are presented in Table 3. The questions were preceded by the instructional prompt "How likely are you to:" and then participants were presented with strategies like "Ask this person for advice." For each prompt, participants responded with a Likert-type scale ranging from 0 - "not likely" to 5 – "very likely." Four of these questions were related to Functional Interpersonal

Emotion Regulation (F-IER; which included: “Interact with this person in some way that makes you feel better”, “Talk to this person about how this situation makes you feel”, “Ask this person for a hug or some other physical contact”, and “Ask this person for advice”) and four were related to Dysfunctional Interpersonal Emotion Regulation strategy use (D-IER; which were : “I would take my feelings out on this person verbally” “I would bump or push this person” “I would say something to make this person feel bad” “I would make this person do what I wanted or see things my way”). The vignettes, questions, and response prompts are included in Appendix A.

The dependent variable, Interpersonal Emotion Regulation (IER), was calculated by summing the likelihood ratings of the interpersonal strategy items (items 1-8) across all three vignettes. Each vignette was assessed separately for reliability of the IER. The Cronbach’s alpha of the IER in the first vignette was $\alpha = .67$, for the second vignette $\alpha = .78$, and for the third vignette, $\alpha = .76$. To create variables reflecting the use of F-IER and D-IER, the ratings of the four functional strategies and the ratings of the four dysfunctional strategies were summed and averaged across the three vignettes. F-IER and D-IER are based on the functional and dysfunctional interpersonal emotion regulation scales of the REQ. Together, the functional and dysfunctional interpersonal emotion regulation subscales of the REQ comprise the interpersonal emotion regulation subscale. These subscales both address emotion regulation strategies that rely on

interaction with another person. For this reason, the dysfunctional strategies are not reverse scored. The correlation between these scales is positive at $r = .30$, $p < .001$. In this study the F-IER had a Cronbach's alpha of $\alpha = .85$ and the D-IER had a Cronbach's alpha of $\alpha = .87$. The Cronbach's alpha of the total IER is $\alpha = .86$ (Table 2).

The Regulation of Emotion Questionnaire (REQ; Philips & Power, 2007) was created as a measure of individual differences in emotion regulation. This 21-question scale assesses the degree to which individuals choose strategies which regulate emotions through drawing on intrapersonal/interpersonal resources (e.g., cognitive reappraisal, asking others for help, respectively). For the purposes of this study, only the interpersonal scale of the REQ was used (REQ-I). In this sample, the Cronbach's alpha of the REQ-I was $\alpha = .72$, and the REQ-FIER yielded $\alpha = .79$, and the REQ-DIER- $\alpha = .75$ (see Table 2), none of which could be appreciably improved by removing any of the items. The correlations among the REQ-I and its constituent subscales, the REQ-FIER and the REQ-DIER are presented in Table 3.

The Personality Assessment Inventory- Borderline Subscale (PAI-BOR; Morey, 1991) was used to assess the severity of BPD symptoms. The PAI-BOR has demonstrated reliability as a measure for assessing BPD psychopathology (Morey, 1991; 1996), allowing for the assessment of BPD symptoms along a continuum. It has been shown to have moderate to good criterion and concurrent

validity; the overall correct classification rate for the presence or absence of BPD using the PAI-BOR total score (T ≥70) is 73% (Stein, Pinsker-Aspen, & Hilsenroth, 2007). The corresponding cut off score frequently used for research is 38 and is used to indicate the presence of a clinical level of BPD symptoms (Stein, Pinsker-Aspen, & Hilsenroth, 2007; Trull, 1995). In this sample, the PAI-BOR demonstrated acceptable internal reliability, with a Cronbach's alpha of .88 (see Table 2).

Procedure

Participants were given a verbal and written description of the study for the purposes of informed consent. Those who consented to participate in the study completed the PAI-BOR, the REQ, and the ERV which was created for this study. Questionnaires were administered via MediaLab computer software (Jarvis, 2007) for psychological experiments. Participants completed the questionnaires in group sessions on individual computers and without communication between participants under the supervision of a member of the research team.

Each participant read three vignettes; all from the same condition (e. g., anger/low intimacy). After each vignette, the participants were asked to answer a series of questions about the likelihood of using 8 interpersonal strategies and other aspects of their response to the hypothetical situations. Additionally, participants were asked questions about the scenario related to the variables of

interest (e. g., “What was the emotion of the person you were speaking with?”, “What was your relationship to this person?”).

Chapter 3: Results

Descriptive statistics for the measures of interest can be found in Table 3. The data were first analyzed to determine whether assumptions for the planned multiple linear regression analyses were met. The Kolmogorov-Smirnov test for normality in SPSS indicated that the scores of the IER, and associated subscales, were approximately normally distributed. The PAI-BOR was moderately skewed due to the presence of an outlier.[1] When the outlier was removed, the PAI-BOR mean was $M = 26.21$, with $SD = 11.36$. The mean score of the IER was 56.56, with $SD = 13.31$. The F-IER mean was 39.57, $SD = 10.12$ and the D-IER mean was 18.48, $SD = 8.07$. The F-IER was correlated with intimacy cue ($r = .21$, $p < .01$) and not with the anger cue, while the D-IER was correlated with neither of the cues, but was correlated with the PAI-BOR ($r = .24$, $p < .01$).

Manipulation checks were included for the intimacy and anger cues. The participants presented with the intimacy cue ($M = 11.71$, $SD = 2.56$) indicated a higher mean rating of how well they knew the person to whom they imagined

[1] The PAI-BOR distribution was moderately positively skewed due to the presence of a low outlier. All analyses were conducted with the outlier removed from the PAI-BOR. For ease of interpretation, the results of analyses conducted with the non-transformed PAI-BOR are presented in this document.

speaking than did participants in the no intimacy cue group (M = 10.06, SD = 2.31), $t(172) = -4.47$, $p<.01$.

Overall, there were 86 participants who were presented with an anger cue. As a manipulation check, participants were asked the open ended question "What emotion is the person you are speaking to feeling?" When asked after the first vignette, 17 participants identified "anger" as the emotion that the interaction partner was feeling, 35 wrote "sympathy." For the second vignette, 40 participants identified the emotion as "anger" and 11 answered "sympathy." In the third vignette, 52 participants wrote "anger" and 9 wrote "sympathy." Participants identified sympathy as the emotion that the interaction partner was feeling both in conditions where anger was presented and in conditions in which no cues about the partner's emotion were presented; although, more frequently when no anger cue was presented. In conditions where anger cue was presented some participants indicated that they believed the interaction partner was upset on their behalf including responses like "Angry about my situation".

Data Analytic Plan

Bivariate relationships were examined with *t*-tests and correlations. Where t-tests were conducted, LeVene's test for equality of variances was conducted. In the one case where equal variances could not be assumed, the

degrees of freedom not assuming equal variances was used to compare the group means.

Regression equations were used to test hypothesized interactions between the interpersonal cues and borderline personality disorder symptoms. In the following analyses, the interpersonal cues of anger and intimacy were included as variables. For each cue, cases in which the cue was presented (for intimacy: "high" intimacy) were coded as 1 and cases where the cue was not presented (for intimacy: "low" intimacy) were coded as 0. Before performing the linear regression, the PAI-BOR total variable was centered to reduce the correlation between this variable and the interaction terms which included it.

To understand how the relationship between the interpersonal cues (i.e., anger and intimacy cues) and the use of IER is impacted by BPD symptoms, a series of hierarchical linear regressions was performed. First, the analyses were performed with the total IER scores as the criterion variable. Then, analyses were conducted with the F-IER and D-IER subscales as the criterion variables, respectively. In the first step of each model, the cue and the centered PAI-BOR score were included as predictors. In the second step of the analysis, an interaction term comprised of one of the interpersonal cues (either anger or intimacy) by PAI-BOR was added to evaluate whether the relationship between

the interpersonal cue and interpersonal emotion regulation was consistent across various levels of BPD symptoms.

Primary analyses

Hypothesis 1a: The presence of an anger cue will be negatively associated with the likelihood of interpersonal emotion regulation strategy use.

Participants were not significantly more likely to use IER when there was no anger cue present (M = 57.44, SD = 14.73) then when the anger cue was present (M = 55.66, SD = 11.77), $t(172) = -.88$, $p = .38$. To determine whether there might be an impact of the presentation of an anger cue on F-IER or D-IER, additional t-tests were conducted. There was not a significant difference in the use of F-IER between participants in the anger cue condition (M = 40.56, SD = 8.61) and those not presented with an anger cue (M = 38.57, SD = 11.42). Because LeVene's test for unequal variances indicated that the variances of the two groups were unequal, the statistics assuming unequal variances are reported here: $t(157.99) = -1.29$, $p = .20$. There was also no significant difference in use of D-IER when anger cue was present (M = 18.64, SD = 8.21) and when it was not (M = 18.33, SD = 7.97), $t(172) = -.31$, $p = .80$.

Hypothesis 1b: BPD symptoms will moderate the relationship between anger cues and the likelihood of interpersonal emotion regulation, such that the negative relationship between anger cues and interpersonal emotion regulation will be less strong as BPD symptoms increase.

In a regression with IER as the criterion variable (see Table 4) and anger cue and PAI-BOR as predictors, the first step of the model, with anger cue and PAI-BOR entered was approaching statistical significance, *Adj.* $R^2 = .02$, $F(2, 170) = 2.81$, $p = .06$. PAI-BOR was a significant predictor in the first step of the model $\beta = .16$, ($t(170) = 2.16$, $p = .03$). The interaction term of PAI-BOR and anger was added in the second step of this model. Neither the interaction term nor either of the predictors in this step was significant in the model[2].

In a regression with F-IER as the criterion variable and anger cue and PAI-BOR as predictors (see Table 5), the first step of the model, with anger cue and PAI-BOR entered, was not significant, *Adj.* $R^2 < .01$, $F(2, 170) = 1.14$, $p = .32$. The second step of the model, with anger cue, PAI-BOR, and anger cue*PAI-BOR, was also was non significant, *Adj.* $R^2 = .01$, $\Delta R^2 = .01$, $F(3, 169) = 1.49$, $p = .22$).

[2] Regression equations were modeled with vignette 1, vignette 2, and vignette 3 as the criterion variable, respectively to see whether differences in the interpretation of the anger cue would impact the results. None of these models was significant.

In a regression with D-IER as a criterion variable (see Table 6), both steps of the model were significant. In the first step, (*Adj.* R^2 = .05, $F(2, 170) = 5.10$, $p = .01$), PAI-BOR was a significant predictor, $\beta = .24$, $t(170) = 3.17$, $p < .01$. Anger cue was not a significant predictor in the first or second step of the model. The interaction term included in the second step was also not significant,($t(169) = .19$, p =.85), but PAI-BOR did maintain significance as a predictor.

Hypothesis 2a: The presence of a cue indicating relationship intimacy will be positively associated with the likelihood of interpersonal emotion regulation strategy use.

Again, independent samples t-tests were conducted to evaluate the impact of the interpersonal cue on interpersonal emotion regulation. There was no significant difference between when intimacy was presented ($M = 57.97$, $SD = 12.29$) and when intimacy was not presented ($M = 55.15$, SD = 14.18), $t(172) = -1.41$, $p = .16$. There was also no significant difference in the use of D-IER when an intimacy cue was presented ($M = 17.82$, $SD = 7.29$) versus when it was not presented ($M = 19.15$, $SD = 8.78$), $t(166.40) = 1.09$, $p = .28$). In the case of F-IER, participants reported using significantly more functional interpersonal emotion regulation when an intimacy cue was presented ($M = 41.70$, $SD = 9.72$)

as opposed to when it was not (M = 37.45, SD = 10.11), $t(172) = -2.82$, $p = .01$. These results provide some support for the research hypothesis.

Hypothesis 2b: BPD symptoms will moderate the relationship between cues of relationship intimacy and interpersonal emotion regulation, such that the positive relationship between intimacy cues and interpersonal emotion regulation will be less strong as BPD symptoms increase.

A regression model with IER as the criterion variable and intimacy cue and PAI-BOR as predictors (see Table 7), was significant, *Adj.* $R^2 = .03$, $F(2, 170) = 3.70$, $p = .03$ PAI-BOR was significant in the first step. In the second step of the model, none of the predictors was significant. This model is at the threshold of significance, *Adj.* $R^2 = .03$, $\Delta R^2 < .01$, $F(3, 169) = 1.49$, $p = .05$). It may be the case that although the interaction term was not significant on its own ($t(169) = .72$, $p = .47$), its inclusion in the model impacted the variance accounted for by the PAI-BOR ($t(169) = .1.26$, $p = .21$) such that the PAI-BOR lost significance and intimacy began to approach significance as a predictor($t(169) = 1.68$, $p = .10$).

In a regression of F-IER, the first step of the model (see Table 8) with intimacy cue and PAI-BOR entered was significant, (*Adj.* $R^2 = .04$, $F(2, 170) = 4.57$, $p = .01$). Intimacy cue was a significant predictor in the first step, $\beta = .22$, $t(170) = 2.96$ $p < .01$, and in the second $\beta = .22$, $t(169) = 2.96$, $p < .01$. The

interaction term added to the second step of the model was not a significant predictor, ($t(169) = .56$, $p = .57$).

When a regression equation was modeled with intimacy cue and PAI-BOR entered as predictors in the first step, with D-IER as the criterion variable (see Table 9), the model was significant (*Adj.* $R^2 = .05$, $F(2, 170) = 5.37$, $p < .01$). In this model, intimacy cue was not a significant predictor in the first step. PAI-BOR was a significant predictor in the first step, $\beta = .23$, $t(170)=3.10$, $p < .01$. When the interaction term was added to the second step, neither PAI-BOR, $t(169) = 1.51$, $p = .13$, the intimacy cue $t(169) = -.83$, $p = .41$, nor the interaction term,, $t(169) = 1.35$, $p = .18$, was significant.

Hypothesis 3: There will be an interaction effect between intimacy and anger such that individuals will engage in the most interpersonal emotion regulation when an intimacy cue is present and an anger cue is not and the least amount of interpersonal emotion regulation when an intimacy cue is not present and an anger cue is present.

A 2x2 ANOVA analysis was performed with IER as the dependent variable and anger and intimacy cues as independent variables. There were no significant main effects of anger ($F(1,170) = .79$, $p = .38$) or intimacy ($F(1,170) =$

2.02, $p = .16$), nor was the interaction between the two significant, $F(1,170) = 1.6$, $p = .20$ (see Figure 2).

A 2x2 ANOVA was performed with F-IER as the dependent variable and anger and intimacy as fixed factors. There was a main effect of intimacy, $F(1,170) = 8.21$, $p = .01$. There was no significant main effect of anger ($F(1,170) = 1.77$, $p = .19$), nor was there a significant effect of the interaction between the two, $F(1,170) = 2.47$, $p = .12$ (see Figure 3).

When a 2x2 ANOVA was performed with D-IER as the dependent variable and anger and intimacy cues as the independent variables, there were no significant main effects for anger ($F(1,170) = .06$, $p = .80$) or intimacy ($F(1,170) = 1.16$, $p = .28$), and there was no significant effect of the interaction, $F(1,170) = .44$, $p = .51$ (see Figure 4).

Secondary analyses

Analysis of factors that may impact interpersonal emotion regulation.

Interpersonal context factors.

After responding to questions about their likelihood of using certain interpersonal emotion regulation strategies, participants were asked to rate certain interpersonal context factors which may have impacted their emotion regulation

decision[3]. With regard to these factors, no significant differences between groups were found between the group who was presented with an anger cue and the group who was not. There was a significant difference between the group presented with an intimacy cue and the group who were not on the item "How upset?" t(172) = 2.52, p = .01, such that those who were presented with an intimacy cue had a higher mean rating of how upset they would be if they did not get to talk to someone about their feelings (M = 10.01, SD = 3.51), than did participants who were not presented with an intimacy cue (M = 8.74, SD = 3.17). There was also a significant difference between the group presented with an intimacy cue and the group not presented the cue on the item "Good time?" t(172) = -4.02, $p < .01$ such that individuals had a higher mean rating of how good a time to talk it was when presented with an intimacy cue (M = 10.25, SD = 2.46), than when the intimacy cue was not presented (M = 8.62, SD = 2.89). These group differences provide additional support to the hypothesis that a cue of intimacy would be significantly positively related to interpersonal context factors

[3] Measure items have been abbreviated in text for ease of discussion. How upset would you be if you did not talk to someone to make you feel better ("How upset?"), How good a time is this to talk? ("Good time?"), How well did you know the person you imagined speaking with in the vignette? ("How well?"), How much did you think talking to this person would damage your relationship?("Damage relationship?"), How much did you believe disclosing would bring you closer? ("Bring you closer?"), "How much did your partner's emotion influence your decision to talk to them?" ("Partner's emotion?").

that may, in turn, be related to IER. There were no other significant differences on the items between the group presented the intimacy cue and the group to whom no intimacy cue was presented, although some correlational relationships are significant.

Correlations among factors.

Correlational analyses were conducted with the IER, F-IER, D-IER and questions related to the selection of strategy use included with each vignette. The results of those correlational analyses can be found in Table 10. Among the results of those analyses, the likelihood ratings of "Good time?" were positively correlated with "How well?" ($r = .44$, $p < .01$), such that ratings of "it was a good time to talk" increased as ratings of how well participants knew the interaction partner increased. "How well?" was significantly negatively correlated with "Damage?" ($r = -.25$, $p < .01$) indicating a related result that the better participants believed they knew the interaction partner, the less likely they rated that speaking to this partner might damage the relationship. Good time?" and "Bring you closer?" were also strongly positively correlated ($r = .55$, $p < .01$), such that as ratings of "Good time?" increased, so did ratings that engaging with the interaction partner would increase the intimacy of the relationship. It seems that the perception of whether it was a good time to talk was strongly related to interpretations about the relationship with the interaction partner. "How well?" was significantly

positively correlated with ratings of "Bring you closer?" (r = .31, p < .01), such that if participants believed they already knew the person with whom they were speaking, they were more likely to think that engaging the other person in interpersonal emotion regulation would make their relationship closer. There was a small positive correlation between "Partner emotion" and "Good time" (r = .19 p = .01). The only information about "the other person's emotion" provided in the experiement was the anger cue presented. This result indicates that, in this case, the anger cue in this study may have a positive relationship with the likelihood of IER. However, what this cue represented to the participants may yet be unclear. "Partner emotion" was also positively correlated with both IER (r = .29, p <.01) and F-IER (r = .30, p<.01). Some of the open ended participant responses included indications that the anger cue was interpreted as an empathic emotional response.

"Imagined intensity" was correlated (r = .16, p = .03) with ratings of "Good time?" Individuals may have interpreted the "Good time?" question as addressing the appropriateness of interpersonal emotion regulation for their imagined emotional state rather than in reference to the emotional state of the interaction partner (anger cue was not correlated with this timeliness variable, r =.02, p = .81). "Imagined intensity" was correlated with IER, r = .17, p = .03, likely driven by the significant positive relationship between "Imagined intensity"

and F-IER, $r = .15$, $p = .05$. The correlation between "Imagined intensity" and D-IER was not significant, $r = .12$, $p = .11$. The more intensely participants imagined feeling the emotion induced by the vignette, the more likely they were to rate that it was a good time to talk about that emotion.

The items with significant correlations with the emotion regulation variables were included in regression equations with IER (see Table 11), F-IER (see Table 12), and D-IER (see Table 13) as criterion variables, respectively. In the first step of each model, intimacy, the interpersonal cue which was a significant predictor of IER and F-IER, and PAI-BOR were included as predictors. All three models were significant. In the model of IER the first step was significant (*Adj.* $R^2 = .03$, $F(2, 170) = 3.70$, $p = .03$). The second step was also significant (*Adj.* $R^2 = .45$, $\Delta R^2 = .42$, $F(11, 161) = 13.75$, $p < .01$). Intimacy was not a significant predictor in the first step, but PAI-BOR was a significant predictor in the first step, $\beta = .17$, $t(170) = 2.25$, $p = .03$). In the second step, with the interpersonal context factors included, intimacy was a significant predictor ($\beta = .15$, $t(161) = 2.25$, $p = .03$) and PAI-BOR was no longer significant. For IER "Good time?" "How upset?", and "Bring you closer?" are all significant predictors in the second step of the model. The first step of the model was also significant in the model of F-IER (*Adj.* $R^2 = .04$, $F(2, 170) = 4.57$, p

=.01), The second step of the model, with the interpersonal context factors included was also significant (*Adj.* R^2 =.55, Δ R^2 = .51, $F(11, 161) = 20.13$, $p <$ .01). Intimacy was a significant predictor in the first step of F-IER ($\beta = .22$, $t(170) = 2.96$, $p < .01$) but not in the second step. PAI-BOR was not a significant predictor in either step of the model. For F-IER "How upset?" and "Bring you closer?" each predict unique variance in the second step of the model. A similar model, with D-IER as the criterion variable, was significant in the first step (*Adj.* R^2 =.05, $F(2, 170) = 5.37$, p =.01) and also in the second (*Adj.* R^2 =.27, Δ R^2 = .22, $F(11, 161) = 6.82$, $p < .01$). Consistent with previous analyses, PAI-BOR was the only significant predictor of D-IER in the first step of the model ($\beta = .23$, $t(170)=3.10$, $p < .01$) and was no longer significant in the second step, $\beta = .12$, $t(161)=1.77$, p = .08. "Partner emotion?" was also a significant predictor in the second step of the model. Intimacy was not a significant predictor in either step of the model. The interpersonal context factor "Damage the relationship?" was a significant predictor of variance when added to the second step of all three models; the IER ($\beta = .32$, $t(161)=5.18$, $p < .01$), F-IER ($\beta = .20$, $t(161) = 3.54$, $p < .01$), and D-IER($\beta = .41$, $t(161) = 5.66$, $p < .01$). From these analyses it appears that "Damage the relationship?", "How upset?", and "Bring you closer?"

predict the most variance in IER. F-IER appears to be more similar to the overall IER in terms of which factors predict variance than D-IER.

BPD symptoms

Correlatonal analyses were conducted with contextual factors and the PAI-BOR. As scores on the PAI-BOR increased, so did the belief that talking to the other person would damage the relationship ($r = .24$, $p < .01$). There was also a significant correlation between BPD symptoms and how upset participants predicted they would be if they did not get to talk to someone about their emotions ($r = .20$, $p = .01$).

As intensity of emotional experience may be a characteristic feature of BPD, a regression analysis of IER including "Imagined intensity?" and PAI-BOR as predictors was conducted. The model was significant (*Adj.* $R^2 = .04$, $F(2, 170) = 4.15$, $p = .02$), neither imagined intensity, $t(170)=1.92$, $p = .06$ nor PAI-BOR, $t(170) = 1.86$, $p = .06$ were significant predictors. The interaction of the two was not significant, $t(169) = -.11$, $p < .92$. A similarly structured regression model of F-IER was not significant, (*Adj.* $R^2 = .01$, $F(2, 170) = 2.06$, $p = .13$). The regression of D-IER was significant, *Adj.* $R^2 = .05$, $F(2, 170) = 5.79$, $p > .01$. PAI-BOR was a significant predictor in the first step $t(170)=2.90$, $p < .01$, but

was not significant in the second step ($t(169) = .68$, $p = .50$) of the model, in which the interaction term ($t(171)=.18$, $p = .86$) was included.

Chapter 4: Discussion

The abilities to effectively regulate emotion and to maintain interpersonal relationships are important to adaptive social functioning. Interpersonal emotion regulation lies at the intersection of the two. Understanding the relationship between interpersonal and emotion regulatory processes may help provide insight into impairments in either or both of those domains. BPD is one example of a disorder associated with impairments in both emotion regulation and interpersonal functioning and these impairments may be related to one another. This study was aimed at clarifying the relationship between interpersonal cues in interpersonal emotion regulation strategy selection and the possible relationship with BPD symptoms.

Anger as a cue

Anger cues did not appear to impact interpersonal emotion regulation in the present study. Not only was there no difference in overall interpersonal emotion regulation strategy use, but examination of functional and dysfunctional strategies separately also evidenced no difference between groups when cues that the interaction partner was angry were presented. When participant evaluations of contextual information were analyzed, there was a significant positive relationship between how much individuals rated being influenced by the interaction partner's emotion and the use of interpersonal emotion regulation strategies, specifically

functional interpersonal emotion regulation strategies. Based on the frequent report of "sympathy" on the open ended manipulation check item, one possibility is that participants believed that the interaction partner was displaying an emotional response of sympathy, or in some cases, sympathetic anger. If this were the case, then the partner's emotion would serve as information that the partner cares about them or has empathy for them, which in turn may convey that a regulation attempt with this partner is supported by the contextual evidence. In future studies, additional efforts would need to be made to make it clear to participants that the interaction partner knows nothing about the story or that the partner's emotion is not related to the participant's experience.

Intimacy as a cue

The likelihood of interpersonal emotion regulation did appear to be impacted by cues of intimacy in the relationship with the interaction partner. There was no significant relationship with intimacy when both types of strategies were analyzed together. However, when functional and dysfunctional emotion regulation strategies were analyzed separately, results indicated a significant difference between the groups in the use of functional strategies and not in the use of dysfunctional strategies. As described earlier, the functional strategies which participants were asked to rate are those that enlist the interaction partner to help regulate emotion in a variety of ways. These ways include providing advice,

distraction, or comforting physical contact. Correlational analyses also revealed a relationship between interpersonal emotion regulation strategy use and the belief that sharing about the emotion would bring the interaction partners closer together. The relationship between emotional disclosure and social integration is well documented (Nils & Rimé, 2012). These authors found that simply verbally expressing emotion did not have a significant impact on the decrease of the negative emotion. Rather, they found that the empathic response of the listener conferred relief from emotional distress in the moment. The results of the present study are consistent with these findings. If the empathic response of the listener is the important factor in relief from emotional distress, the intimacy of the relationship may serve as the most useful cue in terms of the benefit of disclosing to the interaction partner described. Based on that premise, given that intimacy was the cue that predicted functional interpersonal emotion regulation strategy use, the participants in this study appeared to be attending to the cue that would give them the most valuable information in terms of their likelihood of attaining relief from emotional distress.

Factors associated with interpersonal emotion regulation

The data from the present study did not support an interaction between anger and intimacy cue, which suggests that the likehilood of interpersonal strategy use was not impacted by anger infromation about interaction partners of

different intimacy levels. Participant responses to the manipulation check item included "sympathy" as the emotion that the interaction partner was feeling. Some participants reports indicated that even when the partners emotion was identified as anger it could be attributed to an empathic response to their emotion; For example, responses like "Anger over what happened to me" indicate that the partner is perceived to be responding to the participant's emotion. Given that even the response of "anger" may have included individuals who believed the anger was actually an affiliative cue, it is difficult to identify the role of this particular cue of partner emotion in this context. The identification of the anger cue as related to empathic response is consistent with the positive correlation between "Partner emotion?" and the evaluation that it was a "good time to talk."

The results of the correlational analyses may begin to highlight possibilities as to why cues about the partner's emotional state did not have the hypothesized impact on the use of interpersonal emotion regulation strategies. One interesting result was that the more intensely participants imagined feeling the emotion induced by the vignette, the more likely they were to rate that it was a good time to talk about that emotion. There was no significant correlation between this intensity and participants' rating of the likelihood of using dysfunctional strategies. This suggests that it is not simply intensity of emotion that drives the selection of dysfunctional emotion regulation strategies.

In thinking about the factors that impact decision making around interpersonal emotion regulation, these findings may be related to the significant correlation between BPD symptoms and the item "How upset would you be if you did not talk to someone to make you feel better?" This relationship may be explained by the intensity of the emotional experience or by perceived inability to regulate emotions without assistance. Given the emotion regulation difficulty that is characteristic of BPD, frequent experiences of failed emotion regulation attempts might contribute to an individuals perceived inability to effectively regulate emotion on his or her own. One explanation, supported by the significant positive correlation between BPD symptoms and IER scores, might be that individuals with high BPD symptoms, may be more frequently seeking to regulate emotion with interaction partners. The fact that there was a positive relationship between the ratings of a possibility that an emotional disclosure might damage the relationship and the likelihood of using interpersonal strategies may indicate a simple acknowledgment that expressing strong negative emotion may lead to relationship damage. Not only the dysfunctional strategies, which are more intuitively linked to relationship damage, but both functional and dyfunctional emotion regulation strategies had a positive relationship with this interpersonal context factor. This is important to our overall understanding of interpersonal emotion regulation strategy selection because it highlights the important fact that

although interpersonal cues serve as relevant information, they are not the only information, or even the most important when it comes to interpersonal emotion regulation strategy selection. Intimacy accounted for the most significant portion for the variance, and even so, only accounted for just under 4% of the variance. Further analysis did not uncover any one factor that accounted for a larger portion of the variance. The factors that had the strongest correlations with the likelihood of IER were the factors "Good time?" and "Bring you closer?" indicating that participants are likely considering the consequences of interpersonal regulation when selecting those strategies. More information is needed about the factors that individuals are considering most strongly in their decision about whether it is a "good time" to regulate with a partner.

Dysfunctional strategy use

Strategies that involve behaviors like "asking for advice" and "asking for a hug" are typically more appropriate as the intimacy of a relationship increases and could be associated with negative outcomes if enacted without the appropriate determination about the intimacy of the relationship. As discussed previously, one mechanism by which these strategies confer their benefit is the empathic response of the listener (Nils & Rimé, 2012). Dysfunctional strategies may be less related to the perceived intimacy of the relationship as the regulatory function of the behavior likely does not rely as heavily on the response of the interaction

partner. Strategies like "I would take my feelings out on this person verbally" or "I would say something to make this person feel bad" fall into the category of verbally expressing emotion, and do not increase opportunities for empathic response from the listener in the way that functional strategies do. From this perspective, it makes sense that the use of dysfunctional strategies would not be impacted by intimacy, even though the use of functional strategies is. Similar results were found in a previous study where perception of social support was also found to have a significant relationship with functional interpersonal emotion regulation strategy use, but not with dysfunctional interpersonal emotion regulation strategy use (Forsythe, 2011, unpublished).

Cole, Martin, and Dennis (2004) introduced a definition of emotion regulation that distinguished between behavior intended to change the emotion and behavior that results from the activated emotion. In Eisenberg and Spinrad's (2004) paper on emotion-related regulation, the authors wrote that "some behaviors are simply expressions of the emotion or behaviors that are linked to the emotion and do not involve an intent to change the emotional state, the behavior associated with it, or the situation causing the emotion" (p. 336). Dysfunctional strategies may belong to this category of behaviors that result from emotion without the explicit attempt to regulate it. Alternatively, individuals

could either gain, or believe they will gain, short term relief simply from the expression of certain emotions.

BPD symptoms and dysfunctional strategy use.

The prediction that individuals with elevated BPD symptoms would be different in their use of cues like anger and intimacy was not supported. BPD symptoms were a significant predictor of dysfunctional emotion regulation strategy use across cues. As a predictor, BPD symptoms significantly predicted more unique variance in the models of dysfunctional strategy use than either intimacy or anger cue predicted in any of the models. The strength of BPD symptoms as a predictor was specific to dysfunctional interpersonal strategies, as they were not a significant predictor of variance in functional interpersonal emotion regulation strategies, which may serve as an indication that the likelihood of using dysfunctional interpersonal strategies may be particularly important to understand for those with BPD. As the interaction term comprised of BPD and the interpersonal cue was not significant for either model, the data from this study do not support a moderating effect of BPD symptoms on the relationship between interpersonal cues and interpersonal strategies.

Of the factors analyzed, BPD symptoms were only significantly correlated with the evaluation that an attempt to talk to the person about emotions might damage the relationship, and how upset individuals rated they would be if they

were unable to use interpersonal emotion regulation. These relationships may speak to a feedback loop of interpersonal problems in which individuals with BPD symptoms are motivated to regulate their emotions using interpersonal strategies, are more likely to engage dysfunctional strategies, and have the experience that their interpersonal regulation attempts damage relationships.

Limitations

With the understanding that emotional arousal does impact cognitive processing and decision making (Lowenstein & Lerner, 2003), one limitation of the present study is that we were unable to fully replicate that arousal and so may not be fully capturing how individuals might respond when in acute need of emotion regulation strategies. Lowenstein and Lerner describe that at lower levels of emotional intensity, emotions play a major advisory role, and at higher levels of intensity, emotions can reduce cognitive processing ability. Given that these vignettes may not necessarily have increased emotional arousal to a threshold that would impact decision making, we still lack a fully accurate picture of how emotion regulation decision making may be affected by high levels of emotional arousal. This limitation may also be relevant for our ability to detect a moderating impact of BPD symptoms as emotional intensity a common characteristic of BPD symptom presentation. Not only were participants not experiencing the kind of emotional arousal that might influence strategey

selection in a real-life situation, but the options for responding presented may not have included responses that adequately reflect how participants might respond in a naturalistic setting, and therefore may not have been applicable or believable to the participants.

In an unpublished study (Forsythe, 2011), participants were given the opportunity to identify individuals they would consider close friends. Activating thoughts of specific individuals in their friendship networks could have increased the accuracy of reporting by providing an anchor that might have encouraged the reflection on real behaviors in past and possibly similar situations. The fact that the current study did not contain cues that helped remind participants of their own behavior patterns may be a limitation of the present study.

The present study addressed a limited range of emotions for participants to attempt to regulate. Due to beleifs about emotions like sadness or anxiety or how they may be perceived by others, participants may vary more in their likelihood of attempting to address those emotions with an interaction partner. Related to this limitation is the fact that the vignettes may have induced emotions that were closely related to anger, and anger was the cue given about the interaction partner's emotion. This may partially explain the perception of the partner's emotion as an empathic or sympathetic response. At the least, some participants misinterpreted the anger emotion displayed by the partner as a response to their

distress, and may have impacted the interpretation that it was a good time to speak with the interaction partner about their emotion, thereby increasing the likelihood of regulating emotions with that partner.

Future directions

Much of the data in the current study relied on participants hypothesizing about their behavior, a future direction might be the creation of a laboratory study that allows for more direct manipulation of emotion or interaction partner cues to reduce the reliance on accurate hypothesizing. For instance, individuals could be asked to join the study in relationship dyads (acquaintance, close friendship, or assigned by researcher) and asked to describe to this partner a time they had a specific intense emotional experience (betrayal, rejection, loss), immediately after description, they could be asked to provide ratings to the interpersonal emotion regulation question prompts. Another way to enhance the scope of this type of study would be to explore the impact of interpersonal emotion regulation on relationships, in the future, researchers could ask dyads to report on the use of interpersonal emotion regulaiton within the context of their relationship. Specifically, individuals could be asked to report on frequency of interpersonal emotion regulation requests, intensity of the emotions they are called on to help regulate, and whether and how frequently dysfunctional emotion regulation strategies are used in the context of their relationship. A study like this may be

able to provide more information about whether the use of functional strategies too frequently or outside of the appropriate contexts could also damage relationships, and may allow for comparison of that damage to the damage caused by the use of dysfunctional strategies.

Conclusions

Individuals reported that they would be more likely to use functional interpersonal emotion regulation strategies in relationships described as more intimate, but did not rate being less likely to use these strategies when anger cues were presented. The intensity with which participants rated imagining feeling the emotion was related to the perception that it was a good time to communicate about that emotion to the interaction partner, as well as the likelihood of interpersonal emotion regulation. This was likely due to the significant positive relationship between imagined intensity and the use of functional interpersonal emotion regulation, as imagined intensity was not related to the likelihood of using dysfunctional interpersonal emotion regulation. Neither anger nor intimacy was a significant predictor of the use of dysfunctional strategies. The prediction that individuals with elevated BPD symptoms would be different in their use of the anger or intimacy cues was not supported. BPD symptoms were the only significant predictor of the likelihood of using dysfunctional emotion regulation strategies. There was also a correlation between BPD symptoms and how upset

participants rated that they would be if they were not able to communicate with someone about their emotions.

The aim of this study was to understand more about the relationship between interpersonal cues and emotion regulation that relies on interpersonal interactions. It appears that cues about the intimacy of an interpersonal relationship have a stronger relationship with the likelihood of engaging another person in emotion regulation attempts than cues about the partner's emotional state. The data from this study do support a relationship between the use of interpersonal emotion regulation strategies and information that indicates a likely supportive and empathic response from the listener.

Continuing to refine our understanding of what happens when individuals fail to accurately assess or properly use information about the intimacy of a relationship may be important to understanding the transaction between emotion regulation in both typical and disordered functioning; exploring the nuances of this transaction may contribute to understanding the impairments in functioning that lie at the juncture between interpersonal relationships and emotion regulation.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Averill, J. R. (1982). Emotions: Hard- or soft-wired? *Behavioral and Brain Sciences*, 5, 424-424.

Bernieri, F. J. (2001). Toward a taxonomy of interpersonal sensitivity. In J. A. Hall, & F. J. Bernieri (Eds.), *Interpersonal Sensitivity: Theory and measurement* (pp. 3–19). Mahwah, NJ: Erlbaum.

Blair, R. J. (2003). Facial expressions, their communicatory functions and neuro-cognitive substrates. *Philosophical Transactions of the Royal Society: Biological Sciences*, *358*, 561-572.

Boone, C., Declerck, C. H., & Suetens, S. (2008). Subtle social cues, explicit incentives and cooperation in social dilemmas. *Evolution and Human Behavior*, *29*, 179-188.

Bowers, J. W., Metts, S. M., & Duncanson, W. T. (1985). Emotion and interpersonal communication. In M. L. Knapp & G.R. Miller (Eds.), *Handbook of interpersonal communication* (pp. 502-559). Beverly Hills, CA: Sage.

Bowlby, J. (1969). Disruption of affectional bonds and its effects on behavior. *Journal of Contemporary Psychotherapy*, *2*, 75-86.

Buss, D. (1992). Manipulation in close relationships: Five personality factors in interactional context. *Journal of Personality*, *60*, 477-499.

Campos, J. J., Campos, R. G., & Barrett, K. C. (1989). Emergent themes in the study of emotional development and emotion regulation. *Developmental Psychology, 25,* 394-402.

Carpenter, R.W., Trull, T.J., (2013) Components of Emotion Dysregulation in Borderline Personality Disorder: A Review. *Personality Disorders*. 15, 335-343.

Chaikin, A., & Derlega, V. J. (1974). Variables affecting the appropriateness of self-disclosure. *Journal of Consulting and Clinical Psychology*, *42*, 588-593.

Chapman, A., Leung, D.W., Lynch, T.R., (2008) Impulsivity and emotion Dysregulation in Borderline Personality Disorder. Journal of Personality Disorders, 22(2), 148–164, New York: Guilford http://guilfordjournals.com/doi/pdf/10.1521/pedi.2008.22.2.148

Cheng, C., Chiu, C., Hong, Y., & Cheung, J. (2001). Discriminative facility and its role in the perceived quality of interactional experiences. *Journal of Personality*, *69*, 765-786.

Cicchetti, D., Ackerman, B., & Izard, C. E. (1995). Emotions and emotion

regulation in developmental psychopathology. *Development and Psychopathology*, *7,* 1–10.

Clark, M. S., & Brissette, I. (2000). Relationship beliefs and emotion: Reciprocal effects. In N. H. Frijda, A. S. R. Manstead, & S. Bem (Eds.), *Emotions and beliefs: How feeling influence thoughts* (pp. 212–240). Cambridge, England: Cambridge University Press.

Clark, M. S., & Brissette, I. (2003). Two types of relationship closeness and their influence on peoples emotional lives. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 824–838). Oxford, England: Oxford University Press.

Clark, M. S., & Taraban, C. (1991). Reactions to and willingness to express emotion in communal and exchange relationships. *Journal of Experimental Social Psychology*, *27*, 324–336.

Clark, M. S., & Brissette, I. (2000). Relationship beliefs and emotion: Reciprocal effects. In N. H. Frijda, A. S. R. Manstead, & S. Bem (Eds.), *Emotions and beliefs: How feeling influence thoughts* (pp. 212–240). Cambridge, England: Cambridge University Press.

Clark, M. S., Fitness, J., & Brissette, I. (2001). Understanding people's perceptions of relationships is crucial to understanding their emotional lives. In G. J. O. Fletcher & M. S. Clark (Eds.), *Handbook of social*

psychology: Interpersonal processes (pp. 253-278). Oxford, England: Blackwell.

Clark, M. S., & Finkel, E. J. (2005). Willingness to express emotion: The impact of relationship type, communal orientation, and their interaction. *Personal Relationships*, *12,* 169-180.

Cole, P. M., Martin, S. E., & Dennis, T. A. (2004). Emotion regulation as a scientific construct: Methodological challenges and directions for child development research. *Child Development, 75*, 317 – 333.

Davis, M. H., & Kraus, L. A. (1997). Personality and empathic accuracy. In W. Ickes (Eds.), *Empathic accuracy* (pp. 144–168). New York: Guilford.

Eisenberg, N., Fabes, R. A., Miller, P. A. Fultz, J., Shell, R., Mathy, R. M., & Reno, R. R. (1989). Relation of sympathy and personal distress to prosocial behavior: A multi-method study. *Journal of Personality and Social Psychology, 57*, 55-66.

Eisenberg, N. & Spinrad, T. (2004) Emotion-Related Regulation. *Child Development*, *75,*334 – 339. DOI: 10.1111/j.1467-8624.2004.00674.x

Ekman, P., Friesen, W. V., O'Sullivan, M., Chan, A., Diacoyanni-Tarlatzis, I., Heider, K., … Tzavaras, A. (1987). Universal and cultural differences in the judgments of facial expressions of emotion. *Journal of Personality and Social Psychology*, *53* ,712-717.

Ekman, P. (1992). Facial expression of emotion: New findings, new questions. *Psychological Science, 3*, 34-38.

Ekman, P. (1993). Facial expression and emotion. *American Psychologist*, *48*, 384-392.

Faul, F., Erdfelder, E., Lang, A.G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*, 175-191.

Feldman, B., L., & Gross, J. J. (2001). Emotional intelligence: A process model of emotion representation and regulation. In T. J. Mayne & G. A. Bonanno (Eds.), *Emotions: Current issues and future directions* (pp. 286–311). New York: Guilford.

Forsythe, V. A. (2011). *The moderating effect of borderline personality symptoms on the relationship between the perception of social support and interpersonal emotion regulation. (*unpublished master's thesis). The Ohio State University, Columbus, OH.

Fridlund, A. J. (1992). The behavioral ecology and sociality of human faces. *Emotion*, *13,* 90-121.

Fridlund, A. J. (1994). *Human facial expressions: An evolutionary view*. San Diego: Academic Press.

Frijda, N.H., Mesquita, B.: The social roles and functions of emotions. In:

Kitayama, S., Markus, H.R. (eds.) Emotion and Culture, pp. 51–87. United Book Press,Baltimore, MD, USA (1994)

Frith, C., & Frith, U. (2006). How we predict what other people are going to do? *Brain Research*, *1079*, 36-46.

Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, *39*, 281–291.

Hall, J., Murphy, N. A., & Mast, M. S. (2006). Recall of nonverbal cues: Exploring a new definition of interpersonal sensitivity. *Journal of Nonverbal Behavior*, *30*, 141-155.

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, *52*, 511-524.

Hill, J., Pilkonis, P., Morse, J., Feske, U., Reynolds, S., Hope, H., & Broyden, N. (2008). Social domain dysfunction and disorganization in borderline personality disorder. *Psychological Medicine, 38,* 135–146.

Horstmann, G. (2003). What do facial expressions convey: Feeling states, behavioral intentions, or actions requests? *Emotion*, *3*, 150-166.

Jarvis, B. G. (2008). MediaLab (Version 2008) [Computer Software]. New York, NY: Empirisoft Corporation.

Keltner, D., & Young, R. C. (1997). Embarrassment: Its distinct form and appeasement functions. *Psychological Bulletin*, *122*, 250-270.

Keltner, D., & Kring, A. M. (1998). Emotion, social function, and psychopathology. *Review of General Psychology*, *2*, 320-342.

Keltner, D., & Haidt, J. (1999). Social functions of emotions at four levels of analysis. *Cognition & Emotion*, *13*, 505-521.

Knapp, M. L., & Vangelisti, A. (1992). *Interpersonal communication and human relationships*. Boston, MA: Allyn and Bacon.

Knutson, B. (1996). Facial expressions of emotion influence interpersonal trait inferences. *Journal of Nonverbal Behavior*, *20*, 165-18.2

Kring, A. M. (2001). Emotion and psychopathology. In J. J. Mayne, & G. A. Bonanno (Eds.), *Emotions: Current issues and future directions* (pp. 337–361). New York: Guilford.

Kring, A. M., & Neale, J. M. (1996). Do schizophrenic patients show a disjunctive relationship among expressive, experiential, and psychophysiological components of emotion? *Journal of Abnormal Psychology*, *105,* 249-257.

Kurzban, R., & Aktipis, C. A. (2007). Modularity and the social mind: Are psychologists too self-ish? *Personality and Social Psychology Review*, *11*, 131-149.

Laurenceau, J. P., Barret, L. F., & Pietromonaco, P.R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure, partner

disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of Personality and Social Psychology*, *74*, 1238-1251.

Lazarus, R. S. (1991). Cognition and motivation in emotion. *American Psychologist*, *46,* 352-367.

Levenson, R. (1992). Autonomic nervous system differences among emotions. *Psychological Science*, *3*, 23-27.

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. London: Guilford.

Lynch, T. R., Rosenthal, Z. M., Kosson, D. S. Cheavens, J. S., Lejuez, C. W., & Blair, R. J. R. (2006).Heightened sensitivity to facial expression of emotion in borderline personality disorder. *Emotion*, *6*, 647-655.

Matsumoto, D., LeRoux, J., Wilson-Cohn, C., Raroque, J., Kooken, K., Ekman, P., ...Goh, A. (2000). A new test tomeasureemotionrecognition ability: Matsumoto and Ekman's Japanese and Caucasian Brief Affect Recognition Test (JACBART). *Journal of Nonverbal Behavior*, *24,* 179–209.

Miller, P. A., & Eisenberg, N. (1988). The relation of empathy to aggressive and externalizing anti-social-behavior. *Psychological Bulletin*, *103,* 324-344.

Morey, L. C. (1991). *Personality assessment inventory: Professional manual*. Odessa,FL: Psychological Assessment Resources.

Nowicki, S. Jr., & Duke, M. P. (1994). Individual differences in the nonverbal communication of affect: The diagnostic analysis of nonverbal accuracy scale. *Journal of Nonverbal Behavior*, *18*, 9–35.

Ohman, A. (1986). Face the beast and fear the face: Animal and social fears as prototypes for evolutionary analyses of emotion. *Psychophysiology*, *23*, 123-145.

Olsson, A., & Ochsner, K. (2008). The role of social cognition in emotion. *Trends in Cognitive Sciences, 12*, 65-71.

Parks, M. R., & Floyd, K. (1996). Meanings for closeness and intimacy in friendship. *Journal of Social and Personal Relationships*, *13*, 85-107.

Pennebaker, J. W., Zech, E., & Rime´, B. (2001). Disclosing and sharing emotion: Psychological, social and health consequences. In M. S. Stroebe, R. O. Hansson, W. Stroebe, & H. Schut (Eds.), *Handbook of bereavement research: Consequences, coping, and care* (pp. 517–543). Washington, DC: American Psychological Association.

Pickett, C. L., Gardner, W. L., & Knowles, M. (2004). Getting a cue: The need to belong and enhanced sensitivity to social cues. *Personality and Social Psychology Bulletin*, *30*, 1095–1107.

Rimé, B., Paez, D., Basabe, N., & Martinez, F. (2010). Social sharing of emotion,

posttraumatic growth and emotional climate: Follow-up of Spanish citizens' response to the collective trauma of March 11th terrorist attacks in Madrid. *European Journal of Social Psychology, 40*, 1029–1045.

Shoda, Y. & Smith, R. E. (2004). Conceptualizing personality as a Cognitive-Affective Processing System: A framework for models of maladaptive behavior patterns and change. *Behavior Therapy,35, 147-165.*

Solomon, Z., & Mikulincer, M. (1990). Life events and combat-related posttraumatic stress disorder: The intervening role of locus of control and social support. *Military Psychology*, *2*, 241-256.

Stein, M. B., Pinsker-Aspen, J. H., & Hilsenroth, M. J. (2007). Borderline pathology and the Personality Assessment Inventory (PAI): An evaluation of criterion and concurrent validity. *Journal of Personality Assessment*, *88*, 81-89.

Philips, K., & Power, M. (2007). A new self-report measure of emotion regulation in adolescents: The regulation of emotions questionnaire. *Clinical Psychology and Psychotherapy*, *14*, 145–156.

Putnam, K., & Silk, K. R. (2005). Emotion dysregulation and the development of borderline personality disorder. *Development & Psychopathology*, *17*, 899-925.

Reis, H. T., & Shaver, P. (1988). Intimacy as an interpersonal process. In Duck, S. (Ed.), *Handbook of personal relationships: Theory, research, and interventions*, (pp. 367-389). Oxford, England: John Wiley & Sons.

Rime´, B., Mesquita, B., Philippot, P., & Boca, S. (1991). Beyond the emotional event: Six studies on the social sharing of emotion. *Cognition and Emotion*, *5,* 436–466.

Scherer, K. R. (1986). Voice, stress, and emotion. *Dynamics of stress: Physiological, psychological, and social perspectives* (pp. 157-179). New York, NY: Plenum Press

Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. In Fox, N.A. (Ed.), The development of emotion regulation: Biological and behavioural considerations. *Monograph of the Society for Research in Child Development*, *59*, 25–52.

Trivers, R. L. (1971). Evolution of reciprocal altruism. *The Quarterly Review of Biology*, *46,* 35-57.

Van Kleef, G. A. (2009). How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science*, *18*, 184-188.

Van Kleef, G. A., De Dreu, C. K. W., & Manstead, A.S.R. (2010). An interpersonal approach to emotion in social decision making: The

emotions as social information model. *Advances in Experimental Social Psychology*, *42*, 45–96.

Wagner, A. W. & Linehan, M. M. (1999). Recognition of facial expressions of emotion ability among women with borderline personality disorder. *Journal of Personality Disorders, 13,* 329-344.

Watson, D. (1988). Intra-individual and inter-individual analyses of positive and negative affect: Their relation to health complaints, perceived stress, and daily activities. *Journal of Personality and Social Psychology*, *54*, 1020-1030.

Watson, D., Clark, L. A., McIntyre, C. W., & Hamaker, S. (1992). Affect, personality, and social activity. *Journal of Personality and Social Psychology, 63,* 1011-1025.

Zeaman, J., & Garber, J. (1996). Display rules for anger, sadness, and pain: It depends on who is watching. *Child Development*, *67*, 957–973.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, *52*, 30- 41.

Zimet, G. D., Powell, S. S., Farley, G. K., Werkman S. & Berkoff, K. A. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of Personality Assessment*, *55*, 610- 617.

Appendix A
Tables

Table 1
Demographic Characteristics of Participants (N=174)

Characteristic	%	Frequency (N)
Sex		
Men	53.4	93
Women	43.8	76
Other/No response	2.8	5
Age		
18-24	96	166
25-29	2.3	4
30 and up	1.7	3
Ethnicity		
Caucasian	68.1	110
African American	9.0	16
Asian	18.0	32
Hispanic - American	3.4	6
Other/No response	5.1	9

Table 2

Reliability Estimates of the Main Measures

Emotion Regulation Vignettes	Cronbach's Alpha
Interpersonal Emotion Regulation	. 86
Functional Interpersonal emotion regulation (F-IER)	.85
Dysfunctional Interpersonal emotion regulation (D-IER)	.87
Regulation of Emotion Questionnaire-Interpersonal (REQ-I)	.72
Regulation of Emotion Questionnaire-Functional Interpersonal (REQ-FIER)	.79
Regulation of Emotion Questionnaire-Dysfunctional Interpersonal (REQ-DIER)	.75
Personality Assessment Inventory-Borderline Subscale (PAI-BOR)	.88

Table 3

Means, Standard Deviations and Correlations among the Main Measures

	M	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. Intimacy cue	__	__	__							
2. Anger cue	__	__	__	__						
3. IER Total	56.56	13.31	.11	.07	__					
4. F-IER	39.57	10.12	.21**	.10	.88**	__				
5. D-IER	18.48	8.07	-.08	.02	.68**	.30**				
6. PAI-BOR	26.21	11.36	-.08	-.04	.17*	.05	.24**	---		
7. REQ IER	26.66	5.52	-.05	.14	.52	.52**	.23**	.13	---	
8. REQ F-IER	18.55	4.69	< .01	.12	.51**	.51**	.09	-.11	.86**	---
9. REQ D-IER	8.11	2.68	-.12	.09	.38*	.13	.38**	.48**	.49**	.30**

Note. * $p < .05$, ** $p < .01$. Interpersonal Emotion Regulation (IER), Functional Interpersonal Emotion Regulation (F-IER), Dysfunctional Interpersonal Emotion Regulation (D-IER), Personality Assessment Inventory-Borderline Subscale (PAI-BOR).

Table 4

Regression of Interpersonal Emotion Regulation Strategy Use with Anger Cue, PAI-BOR, and the Interaction of the Two as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.02			
Anger			0.07	0.33
PAI-BOR			0.17	0.02
Step 2	0.04	0.02		0.04
Anger			0.07	0.32
PAI-BOR			0.06	0.57
Anger*PAI-BOR			0.18	0.08

Note. The predictors include the level of anger cue (Anger), Personality Assessment Inventory Borderline Subscale score (PAI-BOR), and the interaction between the two (Anger*PAI-BOR).

Table 5

Regression of Functional Interpersonal Emotion Regulation Strategy Use With Anger Cue, PAI-BOR, and the Interaction of the Two as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	<0.01			
Anger			0.10	0.19
PAI-BOR			0.06	0.45
Step 2	0.01	0.009		0.22
Anger			0.10	0.18
PAI-BOR			0.05	0.62
Anger*PAI-BOR			0.16	0.11

Note. The predictors include the level of anger cue (Anger), Personality Assessment Inventory Borderline Subscale score (PAI-BOR), and the interaction between the two (Anger*PAI-BOR).

Table 6

Regression of Dysfunctional Interpersonal Emotion Regulation Strategy Use with Anger Cue, PAI-BOR, and the Interaction of the Two as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.05*			
Anger			0.03	0.70
PAI-BOR			0.24	< .01
Step 2	0.04*	0.01		0.02
Anger			0.03	0.70
PAI-BOR			0.23	0.02
Anger*PAI-BOR			0.03	0.80

Note. * $p < .05$ The predictors include the level of anger cue (Anger), Personality Assessment Inventory Borderline Subscale score (PAI-BOR), and the interaction between the two (Anger*PAI-BOR).

Table 7

Regression of Interpersonal Emotion Regulation Strategy Use with Intimacy cue, PAI-BOR, and the Interaction of the Two as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.03*			
Intimacy			0.12	0.11
PAI-BOR			0.18	0.12
Step 2	0.03*	0.002		0.05
Intimacy			0.12	0.11
PAI-BOR			0.13	0.21
Intimacy*PAI-BOR			0.09	0.39

Note. * $p < .05$. The predictors include the level of intimacy cue (Intimacy), Personality Assessment Inventory Borderline Subscale score (PAI-BOR), and the interaction between the two (Intimacy*PAI-BOR).

Table 8

Regression of Functional Interpersonal Emotion Regulation Strategy Use with Intimacy Cue PAI-BOR, and the Interaction of the Two as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.04*			
Intimacy			0.22	< 0.01
PAI-BOR			0.07	0.34
Step 2	0.04*	0.002		0.03
Intimacy			0.22	< 0.01
PAI-BOR			0.03	0.80
Intimacy*PAI-BOR			0.07	0.47

Note. * $p < .05$. The predictors include the level of intimacy cue (Intimacy), Personality Assessment Inventory Borderline Subscale score (PAI-BOR), and the interaction between the two (Intimacy*PAI-BOR).

Table 9

Regression of Dysfunctional Interpersonal Emotion Regulation Strategy Use with Intimacy Cue, PAI-BOR, and the Interaction of the Two as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.05**			
Intimacy			0.06	0.39
PAI-BOR Center			0.24	< 0.01
Step 2	0.056**	0.006		0.01
Intimacy			0.06	0.40
PAI-BOR Center			0.15	0.13
PAI-BOR*Intimacy			0.14	0.17

Note. * $p < .05$. The predictors include the level of intimacy cue (Intimacy), Personality Assessment Inventory Borderline Subscale score (PAI-BOR), and the interaction between the two (Intimacy*PAI-BOR).

Table 10

Likelihood of Interpersonal Emotion Regulation Strategy Use and the Interpersonal Context Factors That May Impact Strategy Use

	1	2	3	4	5	6	7	8	9	10	11	12
1.IER	__											
2.F-IER	.88**	__										
3.D-IER	.66**	.30**	__									
4. PAI-BOR	.17*	.05	.24**	__								
5. Good time?	.43**	.51**	.08	-.08	__							
6. Damage relationship?	.34**	.16*	.51**	.24**	-.02	__						
7. Bring you closer?	.43**	.56	.04	-.03	.55**	-.004	---					
8. Partner's emotion?	.29**	.30	.15	.09	.19*	.07	.25**	---				
9.How intense?	.17*	.15	.12	.14	.10	.11	.04	.03	--			
10. How upset?	.48**	.53**	.12	.20*	.30**	.05	.39	.33**	-.03	--		
11. How well?	.18*	.27**	-.11**	-.12	.44**	-.25**	.35*	.18*	.17*	.05	--	
12. Closeness	.15	.27**	-.12	.07	.25**	-.18*	.31**	.44**	.03	.26**	.37*	-
13. Imagine?	.18*	.24**	-.01	.06	.16*	-.07	.09	-.02	.60**	.13	.32**	.10

Note. * $p < .05$ **p<.01. Measure items have been abbreviated in text for ease of discussion. How good a time is this to talk? ("Good time?"), How much did you think talking to this person would damage your relationship?("Damage relationship?"), How much did you believe disclosing would bring you closer? ("Bring you closer?"), "How much did your partner's emotion influence your decision to talk to them?" ("Partner's emotion?"). How intensely did you imagine feeling the motion presented in the vignette? ("How intense?"), How upset would you be if you did not get to talk to someone about your feelings? ("How upset?"). How well did you know the person you imagined speaking with in the vignette? ("How well?") How much did the closeness of the relationship influence your decision to talk to them? ("Closeness") How easy was it to imagine your emotions in the situation? ("Easy to imagine?").

Table 11

Regression of Interpersonal Emotion Regulation Strategy Use with Intimacy Cue, PAI-BOR, and Interpersonal Context Factors as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.03			0.03
Intimacy			.13	0.10
PAI-BOR Center			.17	0.03
Step 2	0.45**	0.42		<.01
Intimacy			0.12	0.03
PAI-BOR Center			0.03	0.62
"Imagine?"			0.08	0.32
"How intense?"			0.08	0.31
"Good time?"			0.17	0.03
"Damage relationship?"			0.32	<.01
"Bring you closer?"			0.16	0.03
"Partner's emotion?"			0.10	0.13
"Closeness?"			0.04	0.53
"How upset?"			0.34	<.01
"How well?"			0.40	0.69

Note. * $p < .05$ **p<.01. Measure items have been abbreviated in text for ease of discussion. How good a time is this to talk? ("Good time?"), How much did you think talking to this person would damage your relationship?("Damage relationship?"), How much did you believe disclosing would bring you closer? ("Bring you closer?"), "How much did your partner's emotion influence your decision to talk to them?" ("Partner's emotion?"). How intensely did you imagine feeling the motion presented in the vignette? ("How intense?"), How upset would you be if you did not get to talk to someone about your feelings? ("How upset?"). How well did you know the person you imagined speaking with in the vignette? ("How well?"), How much did the closeness of the relationship influence your decision to talk to them? ("Closeness"),How easy was it to imagine your emotions in the situation? ("Easy to imagine?").

Table 12

Regression of Functional Interpersonal Emotion Regulation Strategy Use with Intimacy Cue, PAI-BOR, and Interpersonal Context Factors as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	B	*p*
Step 1	0.04*			
Intimacy			0.06	< 0.01
PAI-BOR Center			0.22	0.41
Step 2	0.55**	0.51		<.01
Intimacy			0.23	<.01
PAI-BOR Center			0.06	0.27
"Imagine?"			0.11	0.12
"How intense?"			0.07	0.32
"Good time?"			0.10	0.16
"Damage relationship?"			0.20	<.01
"Bring you closer?"			0.26	<.01
"Partner's emotion?"			0.06	0.29
"Closeness?"			0.02	0.74
"How upset?"			0.40	<.01
"How Well?"			0.10	0.15

Note. * $p < .05$ **p<.01. Measure items have been abbreviated in text for ease of discussion. How good a time is this to talk? ("Good time?"), How much did you think talking to this person would damage your relationship?("Damage relationship?"), How much did you believe disclosing would bring you closer? ("Bring you closer?"), "How much did your partner's emotion influence your decision to talk to them?" ("Partner's emotion?"). How intensely did you imagine feeling the motion presented in the vignette? ("How intense?"), How upset would you be if you did not get to talk to someone about your feelings? ("How upset?"). How well did you know the person you imagined speaking with in the vignette? ("How well?"), How much did the closeness of the relationship influence your decision to talk to them? ("Closeness"), How easy was it to imagine your emotions in the situation? ("Easy to imagine?").

Table 13

Regression of Dysfunctional Interpersonal Emotion Regulation Strategy Use with Intimacy Cue, PAI-BOR, and Interpersonal Context Factors as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.05**			
Intimacy			0.06	0.41
PAI-BOR Center			0.23	< 0.01
Step 2	0.27**	0.22		<.01
Intimacy			0.03	0.74
PAI-BOR Center			0.13	0.08
"Imagine?"			<.01	0.96
"How intense?"			0.07	0.40
"Good time?"			0.15	0.09
"Damage relationship?"			0.41	<.01
"Bring you closer?"			<.01	0.98
"Partner's emotion?"			0.15	0.05
"Closeness"			0.13	0.12
"How upset?"			0.01	0.88
"How Well?"			0.11	0.19

Note. * $p < .05$ **p<.01. Measure items have been abbreviated in text for ease of discussion. How good a time is this to talk? ("Good time?"), How much did you think talking to this person would damage your relationship?("Damage relationship?"), How much did you believe disclosing would bring you closer? ("Bring you closer?"), "How much did your partner's emotion influence your decision to talk to them?" ("Partner's emotion?"). How intensely did you imagine feeling the motion presented in the vignette? ("How intense?"), How upset would you be if you did not get to talk to someone about your feelings? ("How upset?"). How well did you know the person you imagined speaking with in the vignette? ("How well?"), How much did the closeness of the relationship influence your decision to talk to them? ("Closeness"), How easy was it to imagine your emotions in the situation? ("Easy to imagine?").

Table 14

Regression of Interpersonal Emotion Regulation Strategy Use with PAI-BOR, "How intense?" and the Interaction of the Two as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.04*			
PAI-BOR Center			0.14	0.06
Intensity			0.15	0.06
Step 2	0.03*	0.01		0.04
PAI-BOR Center			0.17	0.53
Intensity			0.15	0.06
PAI-BORcenter*Intensity			0.03	0.92

Note. * $p < .05$. The predictors include Personality Assessment Inventory Borderline Subscale score (PAI-BOR), the participant rating of "How intensely did you imagine feeling the motion presented in the vignette?" (Intensity), and the interaction between the two (Intensity*PAI-BOR).

Table 15

Regression of Functional Interpersonal Emotion Regulation Strategy Use with PAI-BOR, "How intense?" and the Interaction of the Two as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.01			
PAI-BOR Center			0.03	0.39
Intensity			0.15	0.05
Step 2	< 0.01	0.006		0.25
PAI-BOR Center			<.01	0.99
Intensity			0.15	0.05
PAI-BORcenter*Intensity			0.03	0.91

Note. * $p < .05$. The predictors include Personality Assessment Inventory Borderline Subscale score (PAI-BOR), the participant rating of "How intensely did you imagine feeling the motion presented in the vignette?" (Intensity), and the interaction between the two (Intensity*PAI-BOR).

Table 16

Regression of Dysfunctional Interpersonal Emotion Regulation Strategy Use with PAI-BOR, "How intense?" and the Interaction of the Two as Predictors

Step and Predictor Variables	Adj. R^2	ΔR^2	β	*p*
Step 1	0.05*			
PAI-BOR Center			0.22	< 0.01
Intensity			0.09	0.23
Step 2	0.05*	0.006		0.01
PAI-BOR Center			0.18	0.50
Intensity			0.09	0.23
PAI-BORcenter*Intensity			0.05	0.86

Note. * $p < .05$. The predictors include Personality Assessment Inventory Borderline Subscale score (PAI-BOR), the participant rating of "How intensely did you imagine feeling the motion presented in the vignette?" (Intensity), and the interaction between the two (Intensity*PAI-BOR).

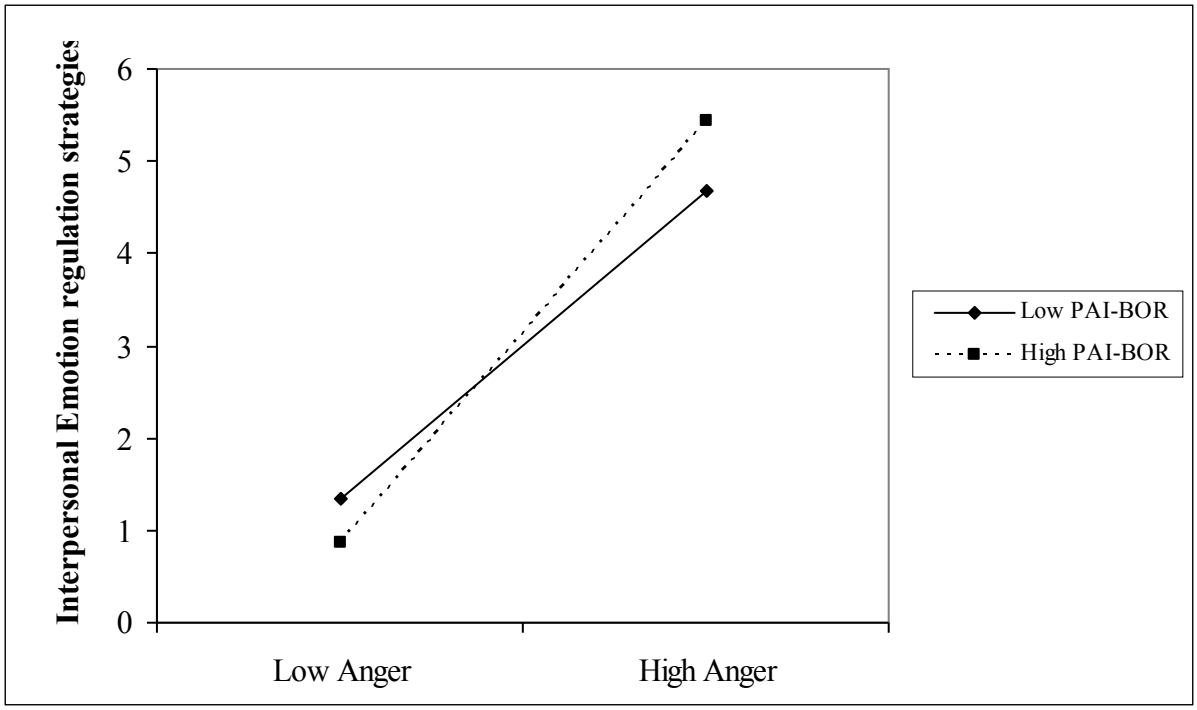

Figure 1. Plot of the interaction of anger cue and BPD symptoms in the Hierarchical Linear Regression of Interpersonal Emotion Regulation strategy use (p = .08).

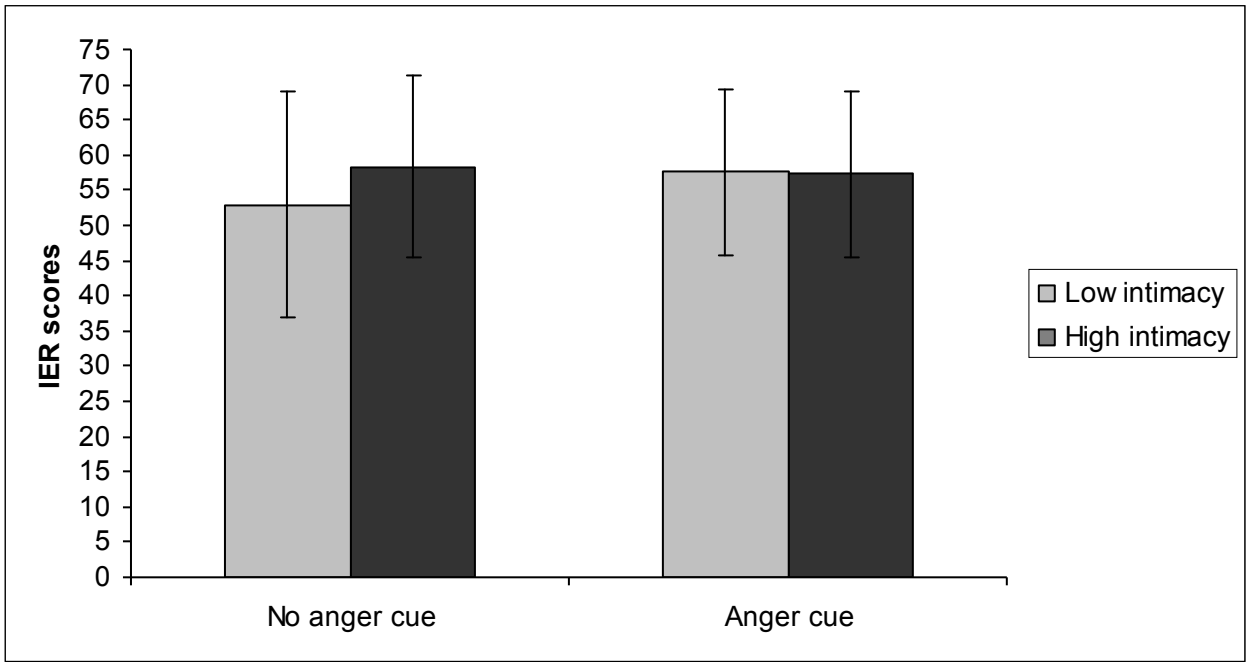

Figure 2. A comparison of the mean (SD) total likelihood of interpersonal emotion regulation strategy use for combinations of intimacy and anger cue presentation.

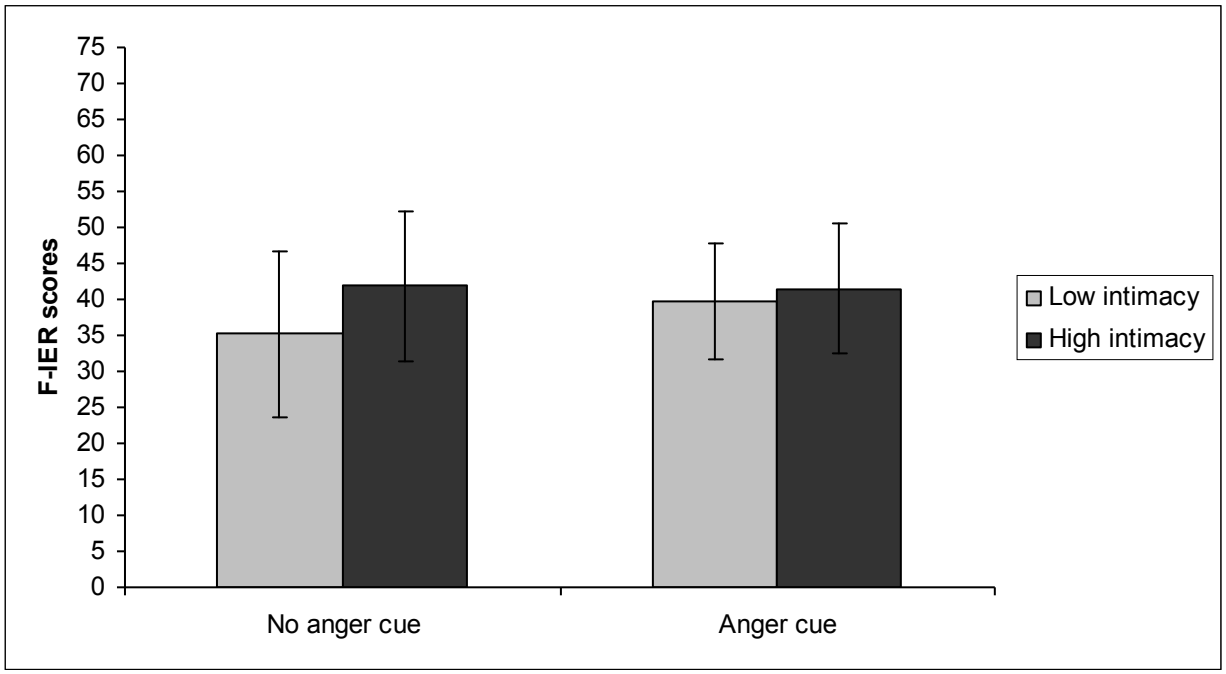

Figure 3. A comparison of the mean (SD) total likelihood of functional interpersonal emotion regulation strategy use for combinations of intimacy and anger cue presentation.

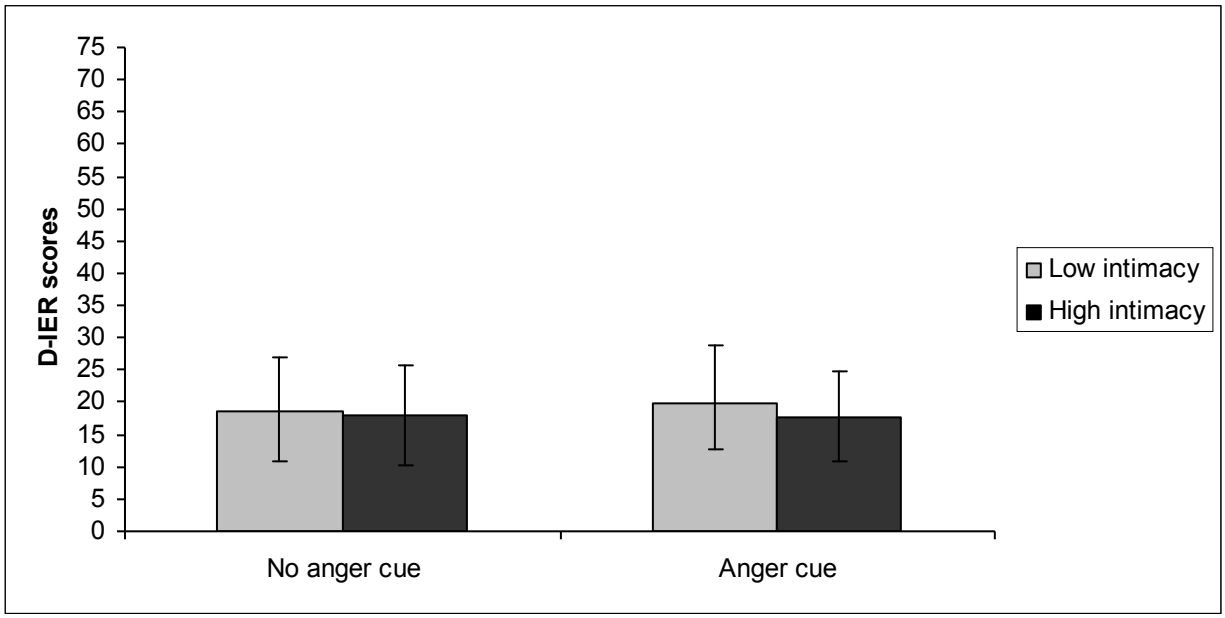

Figure 4. A comparison of the mean (SD) total likelihood of dysfunctional interpersonal emotion regulation strategy use for combinations of intimacy and anger cue presentation.

Appendix B
Emotion Regulation Vignettes -Cued

Cell 1: Anger Cue and High Intimacy
Cell 2: Anger Cue and Low Intimacy
Cell 3: No Anger and High Intimacy
Cell 4: No Anger and Low Intimacy

MediaLab format:

1) Instructions:

- Please read the following vignettes and try to imagine yourself in each situation as best you can. Following each vignette you will be asked to answer questions regarding your feelings and likely behaviors.

2) Questions

1. The same questions presented following vignette 1, cell 1in this document follow each vignette in the study.

2. Questions will be presented with 1-5 Likert-type response options.

Ex. How likely are you to do each of the following?

a. Not Very Likely
b. Somewhat Likely
c. I'm not sure
d. Likely
e. Very Likely

Cell 1: Anger/High Intimacy

Vignette 1 Cell 1: Ex spends your money

You have plans to meet your friend .You have really been looking forward to this visit. You and this person have been friends since the 3rd grade. When it was time to start college, the two of you moved to different cities. You rarely get to spend time together, but when you do, you catch up easily. You care about each other a lot, and often check in to see how the other one is doing. You think this is part of what keeps your friendship strong. This person has really helped you feel better in the past when you were very upset. Aside from just being excited to see them, you are also glad because you have had something on your mind. You recently broke up with your significant other, which your friend already knows. Your significant other recently asked to use your e-bay account to make an order, and then paid you the amount listed for the order. You just found out that they continued to make orders using your account. When you checked, they had purchased 800 dollars of merchandise without asking you, telling you, or paying you. You are very upset.

Please rate, on a scale from 1-5 how upset you would be to find that your former significant other had purchased 800 dollars of merchandise without asking you, telling you, or paying you.

You have not yet spoken to anyone about this and are still thinking about how upset you are and how much you would like to talk about it when your friend walks up to meet you. You begin to catch up with them. While talking you see that your friend looks angry about something. You know this person well enough to see that they are angry.

How likely are you to do each of the following?

1. Interact with this person in some way that would make you feel better.
2. Talk to this person about how this situation makes you feel.
3. Ask this person for a hug or some other physical contact.
4. Ask this person for advice.
5. I would take my feelings out on this person verbally.
6. I would bump or push this person.
7. I would say something to make this person feel bad.

8. I would make this person do what I wanted or see things my way.

Emotion salience

9. What is the emotion you imagine you would feel in this situation?
10. How easy was it to imagine your emotions in the situation?
11. How intensely did you imagine feeling this emotion?

Strategy use

12. How much do you believe that talking to this person about how you feel would make you feel better?
13. How well does talking to this person about how you feel fit your relationship?
14. What emotion is the person you are speaking to feeling?
15. How likely are you to talk to someone about how you feel in general/relative to other strategies?
16. How much does talking to someone about how you feel usually work to make you feel better?
17. How good a time is this to talk to this person about how you feel?

Manipulation checks about the vignette

18. What emotion do you think the person you were talking to was feeling?
19. How well did you know the person you imagined speaking to in the vignette?
20. What is your relationship to this person?

Factors influencing strategy use

21. How disappointed or upset would you be if you were counting on talking to someone about your feelings and couldn't?
22. How upset would you be if you did not talk to someone to make you feel better?
23. How upset would you be if you did nothing to make yourself feel better?
24. How much did each of the following influence the probability that you would talk to the other person?

- My emotion

- Other person's emotion
- Closeness of the relationship
- _____

25. How much do you think talking to this person about your feelings would damage your relationship?

26. How much do you think that talking to this person about your feelings would bring you closer together?

Vignette 2 Cell 1: Co-worker blames you for a mistake

When you were first preparing to start school, you knew you would be around a lot of people, but you were worried that you would never really become close with anyone. You ended up living near to someone you had talked to a few times in high school but did not know very well. The two of you ended up spending lots of time together and you bonded over navigating the new experiences that have come along with college. You have seen each other angry, stressed, and homesick. You have become very close. Today, you are really looking forward to seeing this person. Talking to them usually helps you manage your emotions, and right now, you are really upset. This person knows that you have been working really hard all month on a project for your job. You were hoping that if you did a good job on this project, you would get a promotion. When you went to work yesterday, you were told that you were thanked for the work you had done so far, and told that you would no longer be a part of the project. You were really sad not to be a part of the project anymore and were really confused about what had happened, you thought you had been doing a good job. You even caught a mistake made by a co-worker that was slowing the project down. This morning, you found out that your co-worker had gone to your boss and blamed you for the mistake. You feel betrayed, and insulted. You are very upset.

Please rate, on a scale of 1-5 how upset you would be that your co-worker had blamed you for a mistake, resulting in your removal from a project that you were hoping would lead to a promotion.

You have not yet spoken to anyone about it and are still thinking about how upset you are and how much you would like to talk about it when your friend walks up to meet you. You begin to catch up with them. While talking you see that their jaw is clenched and the muscles in their face are tense. In fact, their whole body seems tense. That and their tone of voice tell you that something is wrong.

Vignette 3 Cell 1: Roommate health emergency

You are very close to your family, but there is one cousin with whom you are very close. The two of you are nearly the same age, and always kept each other company at family gatherings. When you were younger you would play together, and now that you are older you talk about everything from Halloween costumes, to relationship issues, to fears about choosing the right career path. You enjoy the things that are similar about your personalities and both of you believe that you really benefit from the differences. You will be seeing this cousin tomorrow. You are really looking forward to seeing your cousin because you have had something on your mind for a while. You had a discussion with your roommate, during which you were very firm. You said some things you really needed to say, you could tell her feelings were hurt, but she agreed to think about what you had said. Normally you would be able to check in with her, and make sure that things were ok between the two of you, but she had a health emergency and has been admitted to the hospital. You are very upset.

Please rate, on a scale of 1-5 how upset you would be that you spoke harshly to a friend just before she was admitted to the hospital for a health emergency.

You have not yet spoken to anyone about it yet. You are still thinking about how upset you are and how much you would like to talk about it when you see your cousin. You begin to catch up with your cousin. While talking you begin to notice that your cousin appears angry.

Cell 2: Anger/Low Intimacy

Vignette 1 Cell 2: Ex spends your money

You have plans to meet your friend. Although you do not know them well, you have been looking forward to this visit. You are very interested in talking to them. Today, you have had something on your mind. You recently broke up with your significant other, which your friend already knows. Your significant other recently asked to use your e-bay account to make an order, and then paid you the amount listed for the order. You just found out that they continued to make orders using your account. When you checked, they had purchased 800 dollars of merchandise without asking you, telling you, or paying you. You are very upset.

Please rate, on a scale from 1-5 how upset you would be to find that your former significant other had purchased 800 dollars of merchandise without asking you, telling you, or paying you.

You have not yet spoken to anyone about it and are still thinking about how upset you are and how much you would like to talk about it when your friend walks up to meet you. You begin to catch up with them. You know your friend well enough to see that they are angry about something.

Vignette 2 Cell 2: Co-worker blames you for a mistake

When you were first preparing to start school, you knew you would be around a lot of people, but you were worried that you would never really become close with anyone. You ended up living near to someone you had talked to a few times in high school but did not know very well. This person knows that you have been working really hard all month on a project for your job. You were hoping that if you did a good job on this project, you would get a promotion. When you went to work yesterday, you were told that you were thanked for the work you had done so far, and told that you would no longer be a part of the project. You were really sad not to be a part of the project anymore and were really confused about what had happened, you thought you had been doing a good job. You even caught a mistake made by a co-worker that was slowing the

project down. This morning, you found out that your co-worker had gone to your boss and blamed you for the mistake. You are very upset.
Please rate, on a scale of 1-5 how upset you would be that your co-worker had blamed you for a mistake, which resulted in your removal from a project that you were hoping would lead to a promotion.

You have not yet spoken to anyone about it and are still thinking about how upset you are and how much you would like to talk about it when your friend walks up to meet you. While talking you see that their jaw is clenched and the muscles in their face are tense. In fact, their whole body seems tense. That and their tone of voice tell you that something is wrong.

Vignette 3 Cell 2: Roommate health emergency

You are very close to your family, but there is one cousin you see more than twice a year. The two of you are nearly the same age, and always kept each other company at family gatherings. You will be seeing this cousin tomorrow. You are really looking forward to seeing this person. Today, there is something that has been on your mind. You had a discussion with your roommate, during which you were very firm. You said some things you really needed to say, you could tell her feelings were hurt, but she agreed to think about what you had said. Normally you would be able to check in with her, and make sure that things were ok between the two of you, but she had a health emergency and has been admitted to the hospital. You are very upset.

Please rate, on a scale of 1-5 how upset you would be that you spoke harshly to a friend just before she was admitted to the hospital for a health emergency.

You have not yet spoken to anyone about it yet. You are still thinking about how upset you are and how much you would like to talk about it when you see your cousin. You begin to catch up with your cousin. While talking you see that your cousin looks angry about something. While talking, you begin to notice that your cousin appears angry.

Cell 3: No Anger/ High Intimacy

Vignette 1 Cell 3: Ex spends your money

You have plans to meet your friend. You have really been looking forward to this visit. You and this person have been friends since the 3rd grade. When it was time to start college, the two of you ended up having to move to different cities. You rarely get to spend time together, but when you do, you catch back up easily. You care about each other a lot, and often check in to see how the other one is doing. You think this is part of what keeps your friendship strong. This person has really helped you feel better in the past when you were very upset. Aside from just being excited to see them, you are also glad because you have had something on your mind. You recently broke up with your significant other, which your friend already knows. Your significant other had asked to use your e-bay account to make an order. They had paid you the amount listed for the order. You just found out that they continued to make orders using your account. When you checked, they had purchased 800 dollars of merchandise without asking you, telling you, or paying you. You are very upset.

Please rate, on a scale from 1-5 how upset you would be to find that your former significant other had purchased 800 dollars of merchandise without asking you, telling you, or paying you.

You feel betrayed, and insulted. You have not yet spoken to anyone about it and are still thinking about how upset you are and how much you would like to talk about it when your friend walks up to meet you. You begin to catch up with them.

Vignette 2 Cell 3: Coworker blames you for a mistake

When you were first preparing to start school, you knew you would be around a lot of people, but you were worried that you would never really become close with anyone. You ended up living near to someone you had talked to a few times in high school but did not know very well. The two of you ended up spending lots of time together and you bonded over navigating the new experiences that have come along with college. You have seen each other angry, stressed, and homesick. You have become very close. Today, you are really looking forward to seeing them. Talking to them usually helps you manage your emotions, and right now, you are really upset. This person knows that you have been working really hard all month on a project for your job. You were hoping that if you did a good job on this project, you would get a promotion. When you went to work yesterday, you were told that you were thanked for the work you had done so far, and told that you would no longer be a part of the project. You were really sad not to be a part of the project anymore and were really confused about what had happened, you thought you had been doing a good job. You even caught a mistake made by a co-worker that was slowing the project down. This morning, you found out that the same co-worker had gone to your boss and blamed you for the mistake. You feel betrayed, and insulted. You are very upset.

Please rate, on a scale of 1-5 how upset you would be that your co-worker had blamed you for a mistake, which resulted in your removal from a project that you were hoping would lead to a promotion.

You have not yet spoken to anyone about it and are still thinking about how upset you are and how much you would like to talk about it when your friend walks up to meet you. You begin to catch up with them.

Vignette 3 Cell 3: Roommate health emergency

You are very close to your family, but there is one cousin with whom you are very close. The two of you are nearly the same age, and always kept each other company at family gatherings. When you were younger you would play together, and now that you are older you talk about everything from Halloween costumes, to relationship issues, to fears about choosing the right career path. You enjoy the things that are similar about your personalities and both of you believe that you really benefit from the differences. You will be seeing this cousin tomorrow. You are really looking forward to seeing your cousin because you have had something on your mind for a while. You had a discussion with your roommate, during which you were very firm. You said some things you really needed to say, you could tell her feelings were hurt, but she agreed to think about what you had said. Normally you would be able to check in with her, and make sure that things were ok between the two of you, but she had a health emergency and has been admitted to the hospital.

Please rate, on a scale of 1-5 how upset you would be that you spoke harshly to a friend just before she was admitted to the hospital for a health emergency.

You have not yet spoken to anyone about it yet. You are still thinking about how upset you are and how much you would like to talk about it when you see your cousin. You begin to catch up with your cousin.

Cell 4: No Anger and Low intimacy

Vignette 1 Cell 4: Ex spends your money

You have plans to meet your friend. Although you do not know this person well, you have been looking forward to this visit. You are very interested in talking to them. Today, you have had something on your mind. You recently broke up with your significant other, which your friend already knows. Your significant other had asked to use your e-bay account to make an order. They had paid you the amount listed for the order. You just found out that they continued to make orders using your account. When you checked, they had purchased 800 dollars of merchandise without asking you, telling you, or paying you. You are very upset.

Please rate, on a scale from 1-5 how upset you would be to find that your former significant other had purchased 800 dollars of merchandise without asking you, telling you, or paying you.

You feel betrayed, and insulted. You have not yet spoken to anyone about it and are still thinking about how upset you are and how much you would like to talk about it when your friend walks up to meet you. You begin to catch up with them.

Vignette 2 Cell 4: Coworker blames you for a mistake

When you were first preparing to start school, you knew you would be around a lot of people, but you were worried that you would never really become close with anyone. You ended up living near to someone you had talked to a few times in high school but did not know very well. This person knows that you have been working really hard all month on a project for your job. You were hoping that if you did a good job on this project, you would get a promotion. When you went to work yesterday, you were told that you were thanked for the work you had done so far, and told that you would no longer be a part of the project. You were really sad not to be a part of the project anymore and were really confused about what had happened, you thought you had been doing a good job. You even caught a mistake made by a co-worker that was slowing the project down. This morning, you found out that your co-worker had gone to your boss and blamed you for the mistake. You feel betrayed, and insulted. You are very upset.

Please rate, on a scale of 1-5 how upset you would be that your co-worker had blamed you for a mistake, resulting in your removal from a project that you were hoping would lead to a promotion.

You have not yet spoken to anyone about it and are still thinking about how upset you are and how much you would like to talk about it when your friend walks up to meet you. You begin to catch up with them.

Vignette 3 Cell 4: Roommate health emergency

You are very close to your family, but there is one cousin you see more than twice a year. The two of you are nearly the same age, and always kept each other company at family gatherings. You will be seeing this cousin tomorrow. You are really looking forward to seeing your cousin. Today, there is something that has been on your mind. You had a discussion with your roommate, during which you were very firm. You said some things you really needed to say, you could tell her feelings were hurt, but she agreed to think about what you had said. Normally you would be able to check in with her, and make sure that things were ok between the two of you, but she had a health emergency and has been admitted to the hospital. You are very upset.

Please rate, on a scale of 1-5 how upset you would be that you spoke harshly to a friend just before she was admitted to the hospital for a health emergency.

You have not yet spoken to anyone about it yet. You are still thinking about how upset you are and how much you would like to talk about it when you see your cousin. You begin to catch up with your cousin.