Examining relationships between interpersonal emotion regulation, psychopathology, and relationship quality in female friend dyads

Dissertation

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Abstract

One way individuals can create social connections is through providing and receiving social support (i.e., enacted support). Although both social support (e.g., Piferi & Lawler, 2006) and emotion regulation (ER) have been linked to mental health (e.g., Aldao et al., 2010) outcomes, the application of an ER framework to the construct of enacted support is relatively unexplored. The current study advances our understanding by examining dyadic reports of the use of ER strategies on symptoms of psychopathology, relationship closeness, and relationship influence in female friend pairs. 121 pairs of undergraduate female friends (M_{age} = 19 years, *SD* = 1.32) completed questionnaires assessing their perception of the habitual use of ER strategies with their friend and their friend's habitual use of ER strategies with them (Gross & John, 2003; Treynor et al., 2003), symptoms of psychopathology (Fairburn & Beglin, 1994; Radloff, 1977; Mattick & Clarke, 1998; Spitzer et al., 2006), relationship closeness (Aron, Aron, & Smollan, 1992), and relationship influence (Berscheid et al., 1989). Actor-Partner Interdependence Models (APIM; Cook & Kenny, 2005) were conducted, entering provision and receipt of brooding rumination, expressive suppression, and reappraisal as predictors, and a composite psychopathology score, relationship closeness, and relationship influence as outcomes. I found that an individual's perceptions of providing and receiving brooding rumination and suppression were positively associated with her

symptoms of psychopathology (β = .14-.39, all *p*s < .03*)*. Furthermore, an individual providing brooding rumination to her friend was positively associated with her friend's level of psychopathology (β = .14, p =.02). An individual providing (β = -.17, p = .01) and receiving (β = -.21, p <.01) reappraisal was negatively associated with her friend's level of psychopathology. There were significant positive actor and partner effects for receiving reappraisal when predicting relationship closeness (β = .16, p = .01; β =.14, p = .03). Additionally, I found that there were significant positive associations between an individual's reports of providing (β = .21, p <.01) and receiving (β = .34, p <.01) rumination and her perception of relationship influence. Reappraisal showed similar positive actor effects (providing: β = .14, p = .03; receiving: β = .25, p <.01). There were also partner effects for reappraisal, such that a participant's reports of providing (β = .14, p = .03) and receiving (β = .13, p = .03) reappraisal were associated with her friend's perception of relationship influence. This study found evidence to suggest that there are relationships between the interpersonal use of emotion regulation and symptoms of psychopathology and perceptions of relationship influence. Interestingly, interpersonal ER appears to function similarly to intrapersonal ER use in predicting individual's well-being, underscoring the importance of evaluating interpersonal factors in clinical research and practice.

Dedication

"*Kindred spirits are not so scarce as I used to think. It's splendid to find that there are so many of them in the world."* – L.M. Montgomery

This dissertation is dedicated to the powerful friendships that have inspired and sustained me. I hope that I will be able to give as much to you as you have given to me. I am particularly indebted to:

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Christensen, K.A., Aldao, A., Sheridan, M.A., & McLaughlin, K.A (2015). Habitual cognitive reappraisal in context: Peer victimization moderates its association with physiological reactivity to social stress. *Cognition & Emotion*.

Aldao, A., & Christensen, K. (2015). Linking the expanded process model of emotion regulation to psychopathology by focusing on behavioral outcomes of regulation. *Psychological Inquiry*, *26(1),* 27-36.

Christensen, K. & Aldao, A. (2015). Tipping points for adaptation: Connecting emotion regulation, motivated behavior, and psychopathology. *Current Opinion in Psychology, 3,* 70-74.

Dixon-Gordon, K.L., Bernecker, S., & Christensen, K. (2015). Recent innovations in the field of interpersonal emotion regulation. *Current Opinion in Psychology*, *3,* 36-42.

Holsen, L.M., Lawson, E.A., Christensen, K.A., Makris, N., Klibanski, A., & Goldstein, J.M. (2014). Food motivation circuitry hypoactivation associated with endogenous ghrelin secretion in women with anorexia nervosa. *Psychiatry Research: Neuroimaging, 223(2)*, 94-103.

Southward, M., Christensen, K., Fettich, K., Weissman, J., Berona, J., & Chen, E.Y. (2014). Loneliness mediates the relationship between emotional dysregulation and bulimia nervosa/ binge eating disorder psychopathology in a clinical sample. *Eating and Weight Disorders- Studies on Anorexia, Bulimia, and Obesity*, *19(4)*, 509-513.

Chen, E., Fettich, K., Tierney, M., Cummings, H., Berona, J., Weissman, J., Ward A., Christensen, K., Southward, M., Gordon, K., Mitchell, J., & Coccaro, E. (2012). Factors associated with suicidal ideation in severely obese bariatric surgery-seeking individuals. *Suicide and Life-Threatening Behavior, 42(5)*, 541-549.

Fields of Study

Major Field: Psychology.

Minor field: Quantitative Psychology.

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Chapter 1: Introduction

Relationships and well-being

Interpersonal relationships play a critical role in our development and well-being. Multiple relationship theories have asserted that humans have an evolutionarily adaptive, fundamental need to belong and thus readily form relationships with other. However, merely having relationships is not sufficient for adaptation, we must have high quality relationships, in which we feel companionship, security, and support (Bagwell et al., 2005). Relationship quality is a strong predictor of well-being, such that people who have higher quality relationships report higher levels of happiness and lower levels of negative affect (e.g., Diener & Seligman, 2002). When we are socially isolated or believe that we do not have fulfilling relationships, we are more likely to experience distress and poorer physical and mental health. In light of this, understanding what factors contribute to perception of high quality relationships is important for helping individuals to develop and maintain meaningful support system networks.

Social support systems are often limited in distressed individuals; in fact, interpersonal problems may be both causes and symptoms of psychiatric disorders. People who report difficulties in their relationships also frequently report higher levels of psychopathology including depression (Hames, Hagan, & Joiner, 2013), anxiety disorders (Rappaport & D'Antono, 2014), obsessive-compulsive disorder (Rappaport et

al., 2014), and eating disorders (Arcelus, Haslam, Farrow, & Meyer, 2013). Multiple psychiatric disorders, such as schizophrenia, social anxiety, and post-traumatic stress disorder, include disruptions in social functioning as a criterion for diagnosis according to the Diagnostic and Statistical Manual, Fifth Edition (DSM-5; American Psychiatric Association, 2013). Thus, interpersonal relationships are crucial to our understanding of psychopathology, as disruptions in functioning may have bidirectional effects, with difficulties with relationships exacerbating symptoms and symptoms impairing or disrupting relationships.

Several factors may explain aspects of the connections between difficulties in relationships and psychopathology. Belongingness theory posits that relationships that contain components of reciprocity and affective concern are more desirable than those that do not, suggesting that belongingness is not merely a brief transactional or economically-motivated urge (e.g., Baumeister & Leary, 1995). When individuals fail to integrate with others or to achieve relationships that are reciprocal in caring (i.e., both members of the dyad contribute the same level of emotional resources), they experience feelings of distress, which have both psychological and physical manifestations. For example, loneliness, which occurs when there is a discrepancy between the desired and current perceived quality of relationships, is a particularly potent risk factor for poorer well-being (see review in Hawkley & Cacioppo, 2010).

In a series of studies on older adults, loneliness was associated with higher levels of depression concurrently and longitudinally over a period of three years (e.g., Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006). Furthermore, there were

bidirectional effects between depression and loneliness, suggesting that the two may in fact exacerbate each other, perhaps as a result of social withdrawal. Loneliness is also associated with poorer physical health, including higher systolic blood pressure concurrently and longitudinally at two, three, and four years (Hawkley, Thisted, Masi, & Cacioppo, 2010), as well as disorders such as diabetes, cardiovascular disease, and obesity (Mushtaq, Shoib, Shah, & Mushtaq, 2014). In one meta-analysis on mortality risk factors, social isolation and loneliness were associated with a 29% and 32% increase in mortality likelihood, respectively, underscoring the critical nature of social connection (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015).

One way in which individuals can create these social connections and form reciprocal relationships is through the furnishing and receipt of social support, which may be broadly defined as "information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations" (Cobb, 1976). This may encompass a variety of behaviors, including both intentional (e.g., offering aid to a crying friend to reduce his sadness) and incidental support (e.g., calling a friend to say hello, without directly attempting to alter an emotional state).

Social support is likely a critical factor in linking relationships to well-being. The link between social support and stress may be thought of as comprising main effects and buffering effects. As a main effect, social support is associated with positive outcomes, irrespective of stress, meaning that across all contexts social support is linked to better mental and physical health. As a buffer effect, social support protects individuals when they experience stress, thereby reducing its deleterious effects on physical and

mental health (S. Cohen & Wills, 1985). Importantly, social support can be thought of as consisting of multiple components, which include the dimensions of *perceived* (i.e., general impressions of support quality/availability) vs. *enacted* (i.e., specific instances of support provision) components of support and receipt of support vs. offer of support (See Figure 1).

Perceptions regarding *availability* of support from others	Perceptions regarding *availability* of the offer of support to others
Enacted receipt of support from others	Enacted offer of support to others

Figure 1: Social support matrix

It bears noting that the terminology used to define these dimensions can be confusing and is not necessarily intuitive. For instance, in the social support literature, enacted support may also be termed as "received" support. I have chosen to use the term "enacted" for the sake of clarity, as this literature has primarily examined how people accept support, rather than addressing that people can both offer and accept support from others. The use of the term "received support" thus fails to capture how individuals provide concrete support. Furthermore, while enacted support refers to the specific ways support is delivered/received, it is often measured by using individuals' *perceptions* of that experience. For example, a measurement of enacted support may ask a participant about her perceptions of how frequently her friend offered advice; this is not the same as

"perceived support" which refers to whether she thinks support would be available if she asked for advice.

This clarity regarding the dimensions of support is important because previous research suggests that they have differential impacts on well-being. For example, providing enacted support has been associated with lower mortality rates (S. Brown, Nesse, Vinokur, & Smith, 2003), fewer symptoms of depression (Piferi & Lawler, 2006), and increased overall well-being (Thomas, 2010). It may achieve these effects by enhancing an individual's sense of identity, thereby increasing their feelings of agency and usefulness (Liang, Krause, & Bennett, 2001).

Receiving social support from others impacts well-being, however, again, there are important distinctions that must be made between the individual's levels of perceived support, which reflects his or her beliefs about the quality and availability of support, and enacted support, which reflects frequency or types of support received. Interestingly, there tends to be low associations between perceived and enacted levels of receipt of social support (see meta-analysis in Haber, Cohen, Lucas, & Baltes, 2007) and they have differential outcomes. In one study which utilized self-reported questionnaire data, researchers found that individuals' beliefs about the availability of support (perceived support) positively predicted life satisfaction and negatively predicted negative affect, while enacted support only predicted life satisfaction (Siedlecki, Salthouse, Oishi, & Jeswani, 2014).

There is an interesting theoretical gap in understanding why enacted support does not seem to exhibit the same effects on physical and mental health outcomes as perceived

support, as would be predicted by theory. Multiple studies have found that enacted support is typically not associated with mental health outcomes, as compared to perceived support. One possible explanation is that there are confounding effects, such that individuals who are most likely to receive the most enacted support are those currently experiencing poorer physical and mental health (e.g., Larzelere, Kuhn, & Johnson, 2004). Another possibility is that because perceived support captures general aspects of satisfaction and quality, it is thus more subject to individual context, as opposed to enacted support which more closely assesses specific examples of behaviors that can be measured or quantified (e.g., J. Cohen, Lakey, Tiell, & Neeley, 2005).

On a conceptual level, the smaller associations between enacted support and mental health might be because enacted support is a more distal construct than perceived support. For instance, Uchino (2006) suggests that enacted support is situational and occurs in response to stressors, whereas perceived support can be thought of as an ongoing psychological profile that exists independently of stressors, thus exhibiting stronger influence over mental health. Further, others theorize that enacted support is a precursor of perceived support, such that only those individuals who receive consistent, effective enacted support will endorse higher levels of perceived support (Lakey & Orehek, 2011).

This idea that enacted support, and more specifically, effective enacted support is necessary to develop higher levels of perceived support is interesting, as it suggests that the way that enacted support is currently assessed may be obscuring potentially beneficial

links between enacted support and well-being. As it stands now, assessing enacted support as a blanket construct may be contributing to the lack of current findings.

Furthermore, while both providing and receiving support are associated with beneficial outcomes, it appears that these two functions must be balanced for individuals to maximally benefit. In other words, reciprocity, or the belief an individual has that he provides support in the same measure that he receives it, is critical. In one study examining reciprocity in Japanese university students, individuals who reported receiving more support than they provided (i.e., overbenefiting) or providing more support than they received (i.e., underbenefiting), had reduced physical and mental well-being (Jou & Fukada, 2002). Similarly, in one Dutch study, individuals who had greater reciprocity in their relationships with their colleagues reported less negative affect than those who reported less reciprocity (Buunk, Doosje, Jans, & Hopstaken, 1993). Furthermore, greater reciprocity has been associated with lower symptoms of depression in a survey of middle aged men in Japan (Takizawa et al., 2006). This suggests that relationships provide the greatest benefits to individuals when they feel that they both give and receive support on an equal level with their partners, thereby reaping the identity-enhancing benefits of providing support as well as the aid from others. Indeed, individuals who perceive their relationships as more reciprocal report lower levels of loneliness than those who perceive them as unequal (Buunk, Gibbons, & Buunk, 2013; Buunk & Schaufeli, 1999)

Taken together, the evidence suggests that relationships are an important component in maintaining our well-being and that deprivation or dissatisfaction with relationships can serve as causal factors for psychological dysfunction; however, there

remains much to be learned about what factors contribute to the perception of relationship quality and how reciprocity may be measured. Given that social support is often sought and provided when individuals are experiencing distress, one subset of social support that requires further study is examining how pairs manage each other's emotional experiences. This emotional management may be key to helping to better uncover the links between enacted support and mental health and relationship quality.

Since social support is often undertaken to manage distress, effective enacted support could be conceptualized as successful emotional regulation. There are many different ways to manage emotions, with differing degrees of effectiveness. Thus, assessing specific types of enacted support, in the form of emotion regulation strategies, is important, as it is these consistent, effective transactions that may allow individuals to develop higher levels of perceived support. To date, there has been no research from a dyadic perspective examining individuals' reports of how they receive and provide support using specific emotion regulation strategies. Furthermore, there has been no work connecting these patterns of interpersonal emotion regulation strategy use to mental health and relationship quality indices.

Applying an emotion regulation framework to the study of relationships

Emotion regulation is the process by which individuals manage the onset, intensity, and duration of their emotions (e.g., Gross, 1998, 2013). To date, the majority of the research on emotion regulation in adults has focused on *intrapersonal* processes, or the ways in which people attempt to manage their own emotions, rather than *interpersonal* processes. Interpersonal emotion regulation refers specifically to deliberate

processes by which individuals solicit help in managing their emotions and help to regulate the emotions of others (see review in Dixon-Gordon, Bernecker, & Christensen, 2015; Rimé, 2009; Zaki & Williams, 2013). Thus, only interpersonal processes in which the purpose is to influence emotional response are considered interpersonal emotion regulation. This delineation is important to understand, as social support may or may not be considered interpersonal emotion regulation, depending on the level of intentionality. In terms of extending from past work on relationships, examining interpersonal emotion regulation provides greater specificity for understanding social support processes and reciprocity.

To date, interpersonal emotion regulation has been studied primarily as a developmental construct in child-parent relationships (e.g., Cole, 2014; Cole, Martin, & Dennis, 2004; Eisenberg, 2000). In such models, the parent provides emotion regulation functions for the child while he or she is too young to conduct such processes independently (e.g., a father soothing his crying infant). The parent then provides scaffolding for the child as he or she acquires more self-regulatory ability with age. However, this reliance upon others for assistance in regulating emotions does not end with childhood and there are many types of relationships that individuals might draw from for regulatory purposes, such as friendships, romantic partners, and colleagues, as they age. Thus, the field of emotion regulation has moved towards understanding how these processes might function in adults and the roles different relationship partners play. This is an important area of work as interpersonal difficulties and problems with interpersonal emotion regulation have been theorized to contribute to the development

and maintenance of symptoms of anxiety (e.g., Hofmann, 2014) and depression (e.g., Marroquín, 2011).

Difficulties with interpersonal emotion regulation may manifest in symptoms of psychopathology in several ways. First, individuals may over-utilize others to regulate in situations in which it might be more appropriate to use intrapersonal regulation. For example, one interpersonal strategy that individuals may employ is reassurance-seeking, wherein they repeatedly solicit information about threat and safety of stimuli from others (Parrish & Radomsky, 2011; Rector, Kamkar, Cassin, Ayearst, & Laposa, 2011). Reassurance-seeking has frequently conceptualized as a safety behavior in anxiety disorders (American Psychiatric Association, 2013; Kobori & Salkovskis, 2013; Salkovskis, 1991), depression (Joiner & Metalsky, 2001; Joiner, Metalsky, Katz, & Beach, 1999), and bulimia nervosa (Mason et al., 2016). Traditionally, safety behaviors have been viewed as problematic because they can prevent individuals from learning disconfirming information about the nature of their fear (Wells et al., 1995). In this way, reassurance-seeking maintains maladaptive thoughts or behaviors through negative reinforcement processes. In other words, while this process may provide a reduction of anxiety in the short term, it may lead to rebounds in the long term, if, for example, individuals doubt the quality or genuineness of the provided reassurance. This can, in turn, lead to a vicious cycle of more anxiety and uncertainty (Parrish & Radomsky, 2011).

For instance, if a person with social anxiety requests reassurance (e.g., “Tell me that it won’t be embarrassing if I go to the party”), she might feel better and make plans

to attend, only to experience more anxiety later on and cancel at the last minute (e.g., "What if the other person was only saying that to make me feel better?"). Similarly, according to Coyne's Interpersonal Theory of depression (1976), individuals may exacerbate depressive symptoms by asking for repeated confirmation that others like or care about them. As the reassurance-seeking continues, the depressed individual may begin to be isolated or rejected by the person from whom they are seeking reassurance (Haeffel, Voelz, & Joiner, 2007). Thus, reassurance-seeking that occurs excessively or inappropriately may contribute to problems with avoidance and increase social withdrawal and feelings of isolation.

Second, individuals may underutilize others in situations in which an individual's capacity to self-regulate may be impaired or when others may provide more effective support. For example, depression is characterized by cognitive patterns in which an individual has an overly negatively view of their self, the world, and the future (Beck, Rush, Shaw, & Emery, 1979). As such, they may be more inclined to make negative appraisals of situations and have lower cognitive flexibility (e.g., Trivedi & Greer, 2014). These individuals may benefit, thus, from the use of interpersonal emotion regulation from others who may be less subject to these cognitive biases and able to provide a more balanced perspective (see study in healthy controls in Levy-Gigi & Shamay-Tsoory, 2017).

Beyond examining *if* individuals tend to use interpersonal emotional regulation strategies, we can also examine *which* strategies are used. Work on *intra*personal emotion regulation suggests that habitual usage of certain strategies is differentially associated

with mental health outcomes. In one meta-analysis, the habitual usage of acceptance (i.e., non-judgmental acknowledgement of emotions), problem-solving (i.e., finding solutions to problems), and cognitive reappraisal (i.e., reinterpreting the meaning of an emotion or stimulus) were negatively associated with symptoms of depression, anxiety, substance use, and eating disorders; whereas, the habitual usage of avoidance, rumination (i.e., preservative thinking on the causes and consequences of emotions), and suppression (i.e., pushing down thoughts or inhibiting facial expressions) were positively associated with symptoms of psychopathology (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Similarly, in a meta-analysis of the effectiveness of strategies in modulating affect found that certain strategies (e.g., cognitive reappraisal) are more effective than others (e.g., expressive suppression) (Webb, Miles, & Sheeran, 2012).

Strategies that are associated with better mental health and higher effectiveness tend to be characterized as putatively adaptive, while strategies that are associated with worse mental health and lower effectiveness tend to be characterized as putatively maladaptive. Such classification provides rough guidelines for understanding strategy usage, although there are certainly circumstances in which using putatively adaptive strategies may be detrimental, such as reappraising a situation that could be changed instead of taking action. Similarly, using putatively maladaptive strategies may be beneficial in some contexts, such as suppressing a negative facial expression when one is interacting with a superior (see theoretical review in Aldao, 2013; Christensen, Aldao, Sheridan, & McLaughlin, 2017; Troy, Shallcross, & Mauss, 2013).

The current literature applying this framework to interpersonal contexts is limited but previous studies suggest that there are also differential effects when strategies are used interpersonally. Previous work suggests that the use of putatively maladaptive emotion regulation strategies in conjunction with another person (e.g., rumination, suppression) has detrimental effects on mood and physiology, including increases in depression and anxiety, blood pressure, and cortisol levels (Butler et al., 2003; Byrd-Craven, Geary, Rose, & Ponzi, 2008; Byrd-Craven, Granger, & Auer, 2011; Rose, Carlson, & Waller, 2007). For example, co-rumination, which is defined as the excessive discussion of problems with others and includes speculating, rehashing the past, and dwelling on negative affect (Rose, 2002), is associated with detrimental effects on both mood and physiology (Rose, 2002; Rose et al., 2007). Co-rumination has been found to be a double-edged sword for young women: in a sample of adolescents, girls who reported engaging in higher levels of co-rumination reported increased levels of closeness in their friendships; however, they also experienced increased levels of depression and anxiety prospectively — a pattern that was not found in boys (Rose et al., 2007). Recent research suggests that rumination may be contagious in college-aged women, such that women whose roommate is high in rumination, may themselves become more likely to habitually ruminate three months later. (Haeffel & Hames, 2014).

A subtype of co-ruination called co-brooding, in which dyads ruminate on the personal characteristics that may have "led" to a certain outcome, is associated with depression and adjustment problems for both members of a romantic couple following a major stressor (Horn & Maercker, 2016). Similarly, a longitudinal study of 371 Dutch

children found that co-brooding was uniquely associated with prospective increases in depressive symptoms, above and beyond intrapersonal brooding and baseline depressive symptoms (Bastin, Bijttebier, Raes, & Vasey, 2014). Taken together, such findings suggest that co-brooding comprises a risk factor for depressive psychopathology.

Suppression has also been associated with negative interpersonal consequences. Suppression use is negatively associated with interpersonal functioning, such that those who habitually use suppression tend to have worse interpersonal functioning (Gross & John, 2003). The use of suppression by one individual in a social situation may also have detrimental effects on the conversation partner's physiological reactivity and impair relationship development. In a study by Butler and colleagues (2003), when one member of a female pair utilized expressive suppression, both participants experienced higher blood pressure responses and the other member of the pair reported that they liked the suppressor less and were less willing to form a relationship with her, then if she was not suppressing her facial expressions.

Adaptive strategies might also play an important role in interpersonal emotion regulation. This is particularly true for cognitive reappraisal, which consists of thinking about a situation differently in order to feel less negative emotion (Gross, 1998) and is a cornerstone of cognitive-behavioral therapy (e.g., Beck et al., 1979). A number of recent studies have shown that cognitive reappraisal (Nils & Rimé, 2012) does indeed lead to reductions in negative affect. Co-reappraisal, for example, has shown positive effects, as evidenced by decreases in prospective depression and anxiety (Panzarella, Alloy, & Whitehouse, 2006). Similarly, following a major stressor, women in couples who utilized

co-reappraisal reported fewer depressive symptoms (Horn & Maercker, 2016). Co-reappraisal may provide effective interventions for individuals in distress by allowing him or her to receive feedback that more accurately reflects a situation or, if he or she is unable to generate reappraisal statements due to the elevated negative affect, examples of reappraisal to implement (e.g., Grecucci, Theuninck, Frederickson, & Job, 2015; Levy-Gigi & Shamay-Tsoory, 2017).

Although this work suggests that interpersonal emotion regulation may have important effects on well-being and that there are likely differential effects depending on the type of strategy employed, there has yet to be a study that specifically examines dyadic reports of the use of multiple emotion regulation strategies in relation to symptoms of psychopathology and relationship quality. Further, the application of an emotion regulation framework to the construct of enacted support is relatively unexplored and may provide valuable information about what may constitute effective enacted support.

Present study

The present study seeks to explore and describe how interpersonal emotion regulation is reported as being provided and received in friendship dyads to better characterize its associations with mental health and relationship quality. In order to do this, I brought female friendship pairs to the lab and had each participant answer questionnaires describing 1) her habitual intrapersonal use of emotion regulation strategies, 2) how her friend provides interpersonal emotion regulation to her (i.e, enacted support received), and 3) how she provides interpersonal emotion regulation to her friend

(i.e., enacted support provided). Participants also answered questions about their symptoms of depression, generalized anxiety disorder, social anxiety disorder, and eating disorders, as well as evaluations of their relationship quality.

Female friendships, particularly those of college-aged women, represent an important area of study. As children enter adolescence, the peer group becomes critical for providing support. The transition from high school to college represents a potent social change time point, particularly for those who begin to live independently from their parents. Some researchers have hypothesized that at times of change, individuals become more susceptible to adopting the cognitive styles of peers (e.g., Haeffel & Hames, 2014), which makes understanding patterns of interpersonal and intrapersonal emotion regulation important for this vulnerable group. For college-aged women, peers have been shown to influence a variety of maladaptive behavioral outcomes including binge-drinking, aggression, risk-taking, and disordered eating (e.g., Borsari & Carey, 2001; Gardner & Steinberg, 2005; Keel, Forney, Brown, & Heatherton, 2013; Li & Guo, 2016). I chose to restrict this sample to female friend pairs due to the paucity of research on this group and because research has found greater effects of interpersonal emotion regulation in female dyads and in women in heterosexual relationships (e.g., Parkinson, Simons, & Niven, 2016; Rose, 2002; Rose et al., 2007).

By understanding how different interpersonal emotion regulation patterns are associated with mental health and relationship outcomes, we may be able to identify at-risk individuals and create interventions for this population that incorporate friends. For example, friend pairs that are high in co-rumination may be at greater risk for depressive

symptoms, and thus teaching those friend pairs more adaptive strategies may help to reduce this risk. Furthermore, college-aged students may live at considerable distance from their families and thus their in-person support network may increasingly consist of their peers. As such, the friendship dynamic may be an important relationship that therapists may leverage in their interventions.

Therapies such as family-based therapy (FBT) for eating disorders (e.g., Hill, Peck, Wierenga, & Kaye, 2016; Lock et al., 2010; Lock & le Grange, 2005) and obsessive-compulsive disorder (e.g., Remmerswaal, Batelaan, Smit, van Oppen, & van Balkom, 2016) incorporate use of family members as support during the therapeutic process. Although traditionally this has consisted of parents aiding their children (as in FBT) or spouses aiding their partners, expanding upon the definition of support to include friends, particularly among those who have limited access to or poor relationships with family members, may be an effective way of improving treatment outcomes. Thus, learning how individuals use interpersonal regulation with their friends may be of interest in helping to augment therapies.

This study is among the first to examine interpersonal emotion regulation from a variety of perspectives including examining self-reported intrapersonal emotion regulation, provision of interpersonal emotion regulation, and receipt of interpersonal emotion regulation. By utilizing a paired design, I was able to examine how these patterns of emotion regulation correspond to an individual's beliefs about relationships as well as her mental health symptoms.

Hypotheses

In all of the interdependence statistical models for the dyads, I expected that each respondent's report of the enacted support she receives or provides would be associated with her own report of symptoms of psychopathology and relationship quality. Further, in this study, I sought to examine if the respondent's perceptions of providing and receiving support were associated with *her friend's* report of symptoms of psychopathology and relationship quality. I did not have a priori hypotheses about if I would expect to find these partner effects for all of the models.

H_1. Given that higher habitual usage of "adaptive" emotion regulation strategies is linked to better mental health, I predicted that greater use of reappraisal would be associated with lower symptoms of psychopathology (i.e., depression, anxiety, social anxiety, and eating disorders) for each individual. Similarly, given that higher habitual usage of "maladaptive" emotion regulation strategies is linked to poorer mental health, I predicted that greater use of brooding and suppression would be associated with higher symptoms of psychopathology.

H_2. Given that greater interpersonal use of brooding and reappraisal have been associated with higher relationship closeness, whereas greater use of suppression has been associated with decreased rapport and relationship formation, I predicted that greater report of providing and receiving brooding and reappraisal would be associated with higher relationship quality whereas greater use of suppression would be associated with lower relationship quality.

H_3. I predicted that individuals who reported their relationship as having greater reciprocity (i.e., the individual reports providing and receiving emotion regulation on a similar level) would report lower symptoms of psychopathology than those who reported less reciprocity in their relationship.

H_4. I predicted that individuals who reported their relationship as having greater reciprocity would report higher relationship closeness than those who reported less reciprocity in their relationship.

Chapter 2: Method

Sample

The sample consisted of 252 women (126 dyads) aged 18-25 recruited from the community via flyers and from the Psychology Research Experience Program (REP). Each dyad was recruited as a pair of friends and arrived to the lab together for the study administration. Five dyads were removed from the analysis due to incomplete data (participant terminated study early n_{dyad}=1; researcher terminated study early n_{dyad} =1, experimenter error n_{dyad} = 3) resulting in an analytic sample of 242 women (121 dyads). The Ohio State University Institutional Review Board approved all procedures and materials for this study.

Self-Report Measures

Demographics and psychopathology questionnaires.

Demographics Questionnaire. This was a short questionnaire designed to obtain demographic information about participants, including age, race, ethnicity, sexual orientation, and marital status.

Centers for Epidemiological Studies- Depression Scale (CES-D). The CES-D (Radloff, 1977) is a 20-item questionnaire that assesses current depressive symptoms scored on a 3-point scale with higher scores indicating greater depression. The measure has shown good internal consistency (α = .89; Radloff, 1977). In this study, the internal

consistency of this measure was excellent (α = .90).

Eating Disorders Examination – Questionnaire (EDE-Q). The EDE-Q (Fairburn & Beglin, 1994) is a self-report adaptation of the Eating Disorder Examination (Fairburn & Beglin, 1994). It contains a total of 41 items assessing 4 areas of concern: dietary restraint, shape concern, weight concern, and eating concern. The total score and subscales have shown good internal reliability (α's from .78 to .92; Luce & Crowther, 1999). In this study, the total score reliability was excellent (α = .89) with good reliability in the subscales (α = .80-.92).

Generalized Anxiety Disorder-7 (GAD-7). The GAD-7 (Spitzer, Kroenke, Williams, & Löwe, 2006) is a 7-item, brief clinical measure used for assessing symptoms and identifying probable cases of generalized anxiety disorder (GAD). Each item ranges from 0 "not at all" to 3 "nearly every day" for a total score of 21. The GAD-7 specifically asks about problems that may have been experienced over the past two weeks. A score of 10 or greater on the GAD-7 represents a reasonable cutoff for identifying cases of GAD. Cut points of 5, 10, and 15 might be interpreted as representing mild, moderate, and severe levels of anxiety on the GAD-7. Most patients with high scores suffer from chronic symptoms and show greater deficits in functioning across many domains. The internal consistency of the GAD-7 is excellent (α = .92). In this study, the total score reliability was excellent (α = 91).

Social Interaction Anxiety Scale (SIAS). The SIAS (Mattick & Clarke, 1998) is a 20-item self-report inventory that assesses symptoms of social anxiety disorder, particularly anxiety experienced in dyads or groups. Items are scored on a 5-point scale

ranging from 0 to 4 and total scores range from 0 to 80. A score of 34 has been identified as a clinical cutoff score (E. J. Brown et al., 1997). The SIAS has demonstrated excellent internal reliability in both clinical and undergraduate samples (α's > .89; Mattick & Clarke, 1998). In this study, the total score reliability was excellent (α = .93).

Habitual intrapersonal emotion regulation questionnaires.

Emotion Regulation Questionnaire (ERQ). The ERQ (Gross & John, 2003) measures the habitual use of two emotion regulation strategies: cognitive reappraisal (6 items) and expressive suppression (4 items). It has been extensively used in the literature on emotion regulation and it has shown good to very good internal consistency (α's for reappraisal > .75; α's for expressive suppression > .68; Gross & John, 2003). In this protocol, participants used the ERQ to indicate their own emotion regulation patterns, as well as of their friend. They also answered a modification of the questionnaire indicating how their friend uses these strategies to help regulate the respondent's emotions (friend's use on participant) and how the respondent uses these strategies to help regulate their friend's emotions (participant's use on friend). In this study, the reappraisal variability fell within the good to excellent range (α = .88-92), while the suppression variability fell within the acceptable to good range (α = .79-.87).

Ruminative Responses Scale – Brooding (RRS-B). The RRS (Treynor, Gonzalez, & Nolen-Hoeksema, 2003) is a 22-item measure that assesses the tendency to engage in ruminative behavior in response to stress. Treynor and colleagues (2003) have removed those items with a high content overlap with depressive symptoms and

identified a subset of questions that focus on brooding rumination. The Brooding subscale contains 5 items and reflects the moody rumination at the core of Nolen-Hoeksema's (1991) rumination theory (e.g., "What am I doing to deserve this"). It has shown good internal consistency (α = .77; Treynor et al., 2003). In this protocol, participants used the RRS-B to indicate their own tendency to ruminate, as well as that of their friend. They also answered a modification of the questionnaire indicating how their friend uses these strategies to help regulate the respondent's emotions (friend's use on participant) and how the respondent uses these strategies to help regulate their friend's emotions (participant's use on friend). In this study, the internal reliability of this measure fell within the good to excellent range (α = .81-.84).

Relationship closeness questionnaire.

Inclusion of Other in Self Questionnaire (IOSQ). The IOSQ (Aron et al., 1992) is a single-item measure that assesses relationship closeness by having participants select the image of two circles that best represents the respondent and their partner. There are six options to choose between, ranging from two independent circles to two completely overlapping circles. The IOSQ is one of the most widely used measures of self-other inclusion in the literature.

Relationship Closeness Inventory (RCI). The RCI (Berscheid, Snyder, & Omoto, 1989) is a questionnaire designed to assess the influence of identified people on the respondent's emotions, thoughts, and behaviors (e.g., "My friend does not influence my moods", "My friend influences how I spend my free time" and "My friend influences the way I feel about the future"). This questionnaire can be customized to

reflect specific relationships, in this case, that of the participant and their friend at the experimental session. In this study, the internal reliability of this measure was good (α = .84).

Study Procedure

Participants were scheduled via email (those who responded to flyers) or via the REP system. Those who contacted the lab or who signed up via the REP system were instructed that in order to participate, they must bring a female friend who will also consent to participate. Scheduled participants came to the lab space, where they signed the consent form prior to beginning study procedures. Participants completed the questionnaires in separate rooms, were debriefed, and were compensated for their participation.

Statistical Analysis

First, I examined the questionnaire data to ensure that it met assumptions of normality. Subsequently, I calculated Cronbach's alpha for questionnaires to verify the internal reliability of the measures. Given that there were significant correlations between all the measures of psychopathology (r = .25- .70; all ps <.01), instead of examining the associations between emotion regulation and symptoms of each type of psychiatric disorder individually, I chose to create a composite psychopathology variable. On a conceptual level, the combination of these disorders may also be justified, as they are all internalizing disorders. The use of a composite variable is also in line with previous literature examining the associations between intrapersonal emotion regulation and psychopathology, which has found that ER is associated in similar ways to the disorders

examined in this study (e.g,. Aldao & Nolen-Hoeksema, 2010; Kring & Sloan, 2009). I created the composite psychopathology variable by creating z-scores for respondent's self-reported symptoms of depression (CES-D; Radloff, 1977), of anxiety (GAD-7; Spitzer et al., 2006), of eating disorders (EDE-Q; Fairburn & Beglin, 1994), and of social anxiety (SIAS; Mattick & Clarke, 1998) and adding them ($\alpha = .74$, acceptable range). A similar pattern of findings was observed when analyzing the associations between emotion regulation and each disorder; therefore, to aid in the ease of interpreting findings, I report only the results with the composite variable.

I created a reciprocity variable to evaluate the respondents' perceived balance between providing ER to her friend and receiving ER from her friend. To do this, I used standardized difference scores (SDS; see use of SDS in De Los Reyes et al., 2011), by calculating z-scores for each respondent's reports of offered and received support for each strategy and then subtracting the z-score of received support from the z-score of offered support. Thus, more positive values indicate an imbalance in favor of offering support (i.e., underbenefiting), while negative values indicate an imbalance in favor of receiving support (i.e., overbenefiting).

I used Actor-Partner Interdependence Models (APIM; Cook & Kenny, 2005) to test hypotheses of interest. APIM utilizes an analytic approach that assumes that the data collected are interdependent, rather than independent; in other words, this method accounts for the fact that in dyadic data, each participant cannot truly be considered independent from the other participants. I set up the models using a perspective that the two members of the dyads are indistinguishable, that is, not differentiated by a within-

dyad dichtotomous variable (i.e., gender, husband/wife, parent/child). In the absence of any dichotomous factors to separate the members of the pair and any theoretical reason for doing so, it is advised to treat the members of the pair as indistinguishable (Kenny & Ledermann, 2010).

APIM allows one to assess the magnitude and existence of actor and partner effects for indistinguishable pairs by using a multi-level approach (Kenny & Ledermann, 2010). Actor effects refer to within-person associations (e.g., the respondent's perception of providing reappraisal to predict the respondent's symptoms of psychopathology). Partner effects refer to between-person associations (e.g., the respondent's perception of providing reappraisal to predict her friend's symptoms of psychopathology). This may result in several different types of models. In a non-significant model, neither the actor nor partner effects are significant. In an actor only model, the partner effect is zero (e.g., the respondent's perception of providing reappraisal does not predict her friend's symptoms of psychopathology) and the actor effect is significant. In a partner only model, the actor effect is zero (e.g., the respondent's perception of providing reappraisal does not predict her own symptoms of psychopathology) and the partner effect is significant. In a couple model, both actor and partner effects are significant and approximately equal in size (e.g., the respondent's perception of providing reappraisal negatively predicts both her and her friend's symptoms of psychopathology). In a contrast model, both actor and partner effects are significant and similar in magnitude but with different signs (e.g., The respondent's perception of providing reappraisal negatively

predicts her symptoms of psychopathology and positively predicts her friend's symptoms of psychopathology).

The *k* parameter in APIM is also calculated to identify the relative influence that one individual (actor) has upon the other (partner) and to help determine the model of best fit. *k* is calculated by dividing the partner effect by the actor effect ($k = -1$ for a contrast model, $k = 0$ for an actor-only model or partner-only model, $k = 1$ for a couple model). To evaluate the model of best fit, one can examine the significance of the actor and partner effects and then consult *k* and the confidence interval surrounding it. When the confidence interval is broad or encompasses more than one possible model value of *k,* it suggests the possibility that the true model may be between a maybe a hybrid of a couple/contrast and actor-only/partner-only model.

I utilized a web-based interface for conducting APIM (Kenny, 2015), which uses several specifications. First, it uses multi-level modeling using generalized least squares (GLS) estimation. To compute the confidence interval for *k*, it uses the Monte Carlo bootstrap method with 40,000 cases. Outliers are identified and removed by using standardized residuals greater than 3. This technique does not provide an overall *p* value for the model; however, it does allow an estimation of the variability accounted for by the model (i.e., R^2). The program also allows to test interactions between actor and partner effects, which would allow one to see if actor or partner effect functions differently as a result of different levels of the respondent or her friend's responses (for example, if individuals who report providing high reappraisal see different associations with

psychopathology when their friend reports providing high reappraisal versus low reappraisal).

Modeling H_1. To test H_1, I ran APIM for each of the emotion regulation strategies (brooding for RRS, suppression from ERQ, and reappraisal from ERQ) predicting the psychopathology composite score (see Figure 2) for participants' perception of both providing and receiving emotion regulation to/from their friend. For *providing* emotion regulation, I predicted that, at minimum, I would find evidence for an actor-only model such that the respondent's report of providing a strategy would predict her symptoms of psychopathology. I further predicted that the actor effects would be negative for reappraisal and positive for suppression and rumination. Similarly, for *receiving* emotion regulation, I predicted that, at minimum, I would find evidence for an actor-only model, such that the respondent's report of receiving a strategy would predict her symptoms of psychopathology. I further predicted that the actor effects would be negative for reappraisal and positive for suppression and rumination. The purpose of this analysis was to examine if partner effects would also be found in the same direction, supporting a couple model.

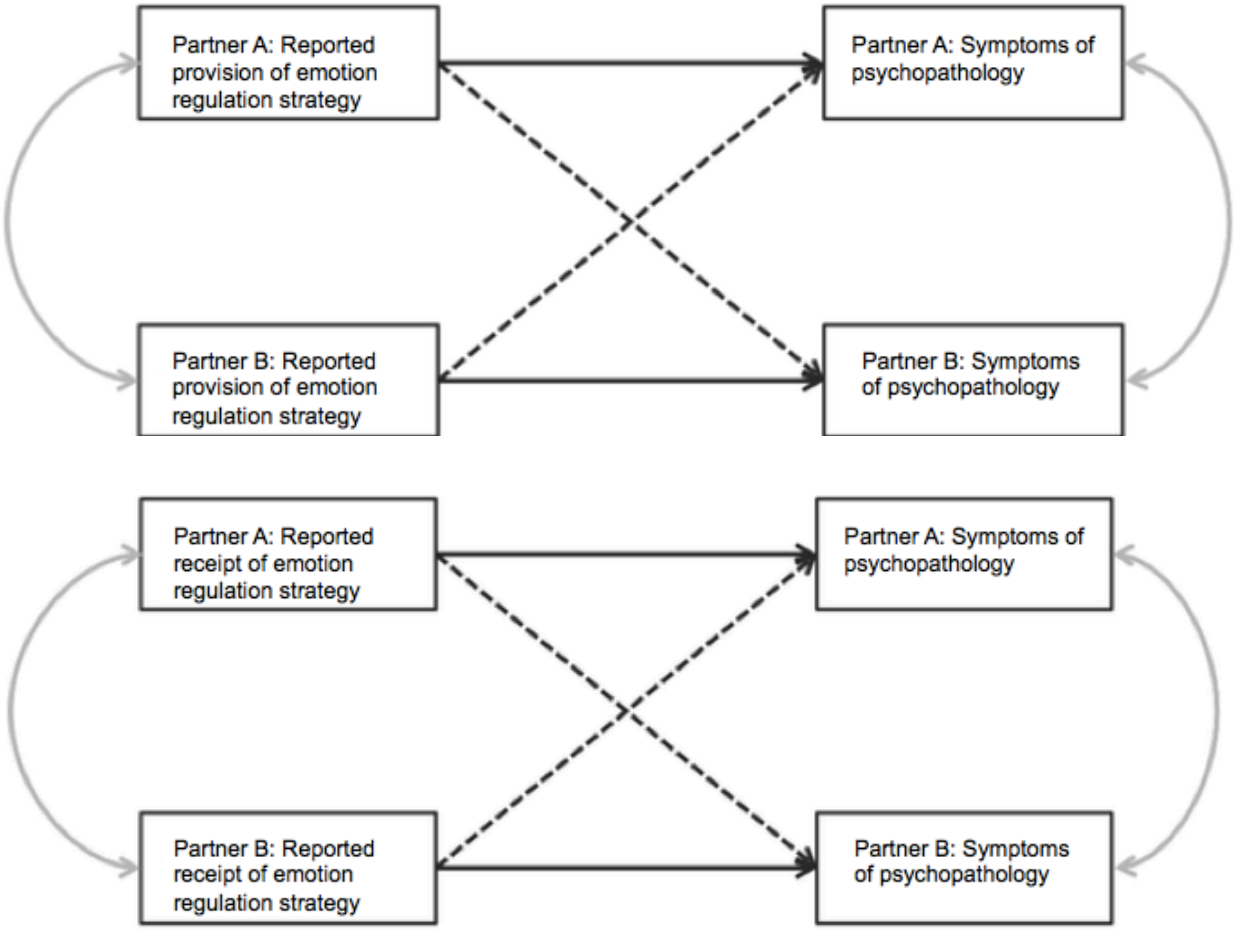

Figure 2: APIM for H1

Modeling H_2. To test H_2, I ran APIM for each of the emotion regulation strategies (brooding from RRS, suppression from ERQ, and reappraisal from ERQ) predicting relationship closeness using the IOSQ and relationship influence using the RCI (see Figure 3) for participants' perception of both providing and receiving emotion regulation to/from their friend. For *providing* emotion regulation, I predicted that, at minimum, I would find evidence for an actor-only model, such that the respondent's report of providing a strategy would predict her perception of relationship influence and closeness. I further predicted that the actor effects would be positive for brooding and reappraisal and negative for suppression. Similarly, for *receiving* emotion regulation, I predicted that, at minimum, I would find evidence for an actor-only model, such that the respondent's report of receiving a strategy would predict her perception of relationship influence and closeness. I further predicted that the actor effects would be positive for brooding and reappraisal and negative for suppression. The purpose of this analysis was to examine if similar partner effects would also be found in the same direction, supporting a couple model.

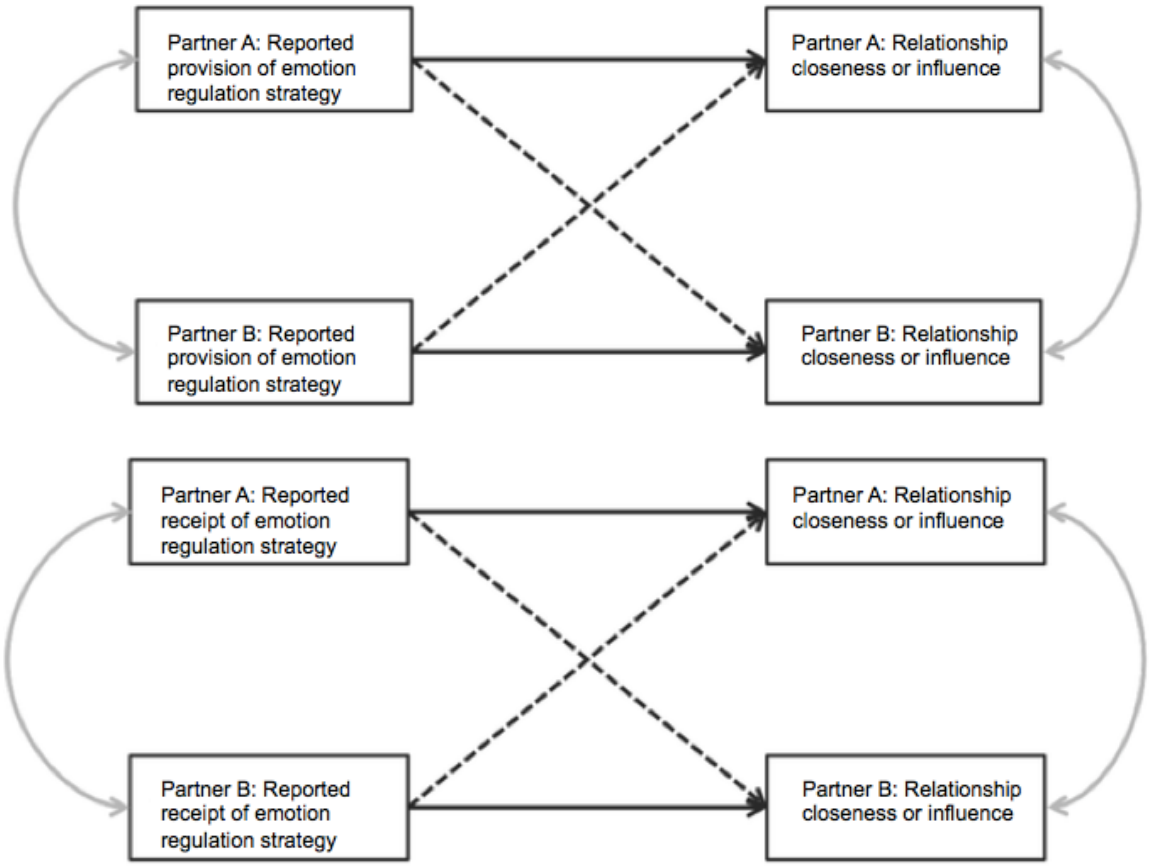

Figure 3: APIM for H2

Modeling H_3. To test H_3, I ran APIM for the reciprocity variable predicting the psychopathology composite score (see Figure 4). I predicted that, at minimum, I would find evidence for an actor-only model, such that the respondent's report of reciprocity would be negatively associated with her symptoms of psychopathology. The purpose of this analysis was to examine if similar partner effects would also be found in the same direction, supporting a couple model.

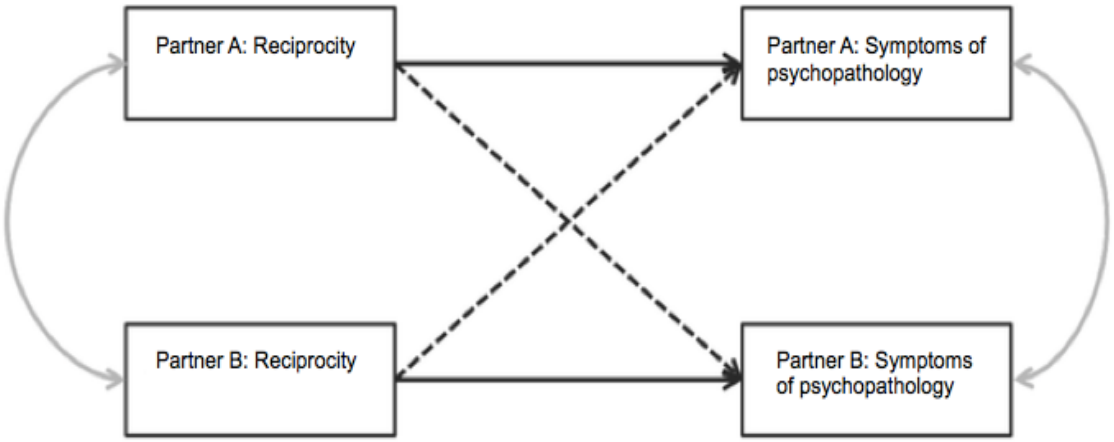

Figure 4: APIM for H3

Modeling H_4. To test H_4, I ran APIM for the reciprocity variable predicting relationship closeness using the MFQ-RA (see Figure 5). I predicted that, at minimum, I would find evidence for an actor-only model, such that the respondent's report of reciprocity would be positively associated with her perceptions of relationship influence and closeness. The purpose of this analysis was to examine if similar partner effects would also be found in the same direction, supporting a couple model.

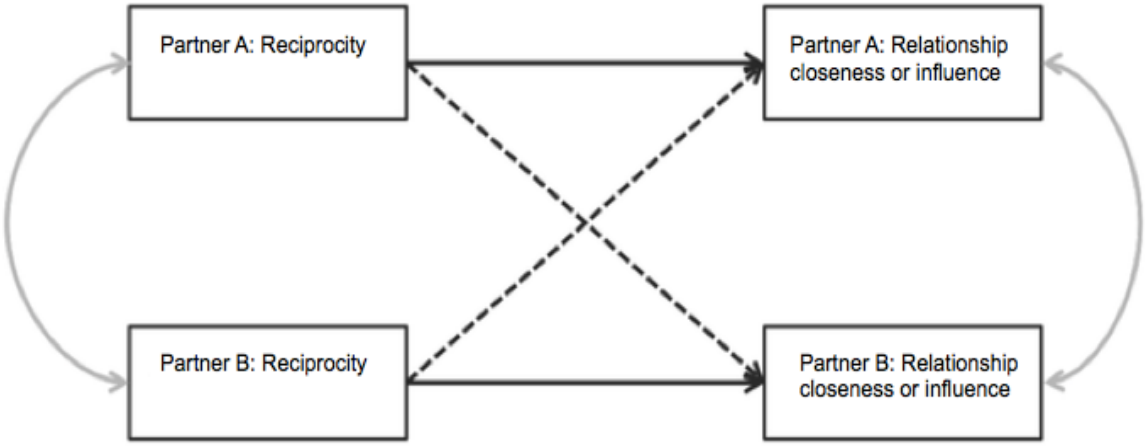

Figure 5: APIM for H4

Chapter 3: Results

Descriptive Statistics

The analytic sample consisted of 141 dyads (242 female participants). The mean age of participants was 19 years (SD = 1.32) and the mean BMI was 23.32 kg/m2 (SD = 3.81). The majority of participants self-identified as heterosexual (94.63%), White (72.73%), non-Hispanic (93.80%), and single, never married (98.35%). The majority of participants denied current use of illicit substances (86.36%). Descriptive statistics for psychopathology variables (i.e., CESD total, EDEQ total, GAD7 total, SIAS total, psychopathology composite score), relationship closeness variables (i.e., IOSQ relationship closeness and RCI relationship influence), and emotion regulation variables (i.e., RS brooding rumination, ERQ expressive suppression, ERQ reappraisal) are included in Table 1.

Testing Associations Between Emotion Regulation and Psychopathology

Given the novelty in this study of adapting the existing emotion regulation questionnaires to capture a participant's perception of interpersonal use of ER strategies on their friend) and their perception of receiving interpersonal ER from their friend, I first examined relationships between self-reported intrapersonal use of emotion regulation strategies and symptoms of psychopathology to determine that the data showed expected correlations. I found that when using the entire sample (n = 242), the composite

psychopathology variable was associated positively with intrapersonal brooding rumination (r = .64; p < .01) and expressive suppression (r = .33; p < .01) and negatively with intrapersonal reappraisal (r = -.32; p < .01), suggesting individuals who habitually use brooding rumination and expressive suppression by themselves show higher levels of psychopathology, whereas those who habitually use reappraisal show lower levels of psychopathology. This is consistent with meta-analytic work by Aldao and colleagues (2010). Correlations between the psychopathology variables (i.e., CESD total, EDEQ total, GAD7 total, SIAS total, psychopathology composite score), relationship closeness variables (i.e., IOSQ relationship closeness and RCI relationship influence), and emotion regulation variables (i.e., RS brooding rumination, ERQ expressive suppression, ERQ reappraisal) are reported in Table 2.

Testing H1: Interpersonal Emotion Regulation Predicting Composite Psychopathology

To test H1, I performed two APIMs for each emotion regulation strategy using participants' perceived provision of ER to their friend and participants' perceived receipt of ER from their friend as predictors and the psychopathology composite as the outcome measure. Given that habitual intrapersonal use of ER was associated with their interpersonal use of a strategy, I did not control for this in analyses.

Brooding Rumination. When entering the individual's perception of brooding rumination provided to their friend as a predictor, the model accounted for 10% of the variance (Table 3). There was a significant actor effect (b = .29; β = .29; p <.01) meaning that individuals who reported providing more brooding rumination also reported higher symptoms of psychopathology. The partner effect was significant (b = .14; β =

.14; p =.02), meaning that the individual's report of providing brooding rumination was associated with higher levels of psychopathology for her partner. The actor-partner interaction was non-significant (b = .03; p = .18). The k value of the partner effect to the actor effect was 0.47 (95% *CI* = -.06, 1.04). The significant actor and partner effects suggest that a couple model is the best fit for the data, although the inclusion of 0 in the confidence interval suggests that this must be interpreted cautiously.

When entering the individual's perception of brooding rumination received from the friend as a predictor, the model accounted for 15% of the variance (Table 4). There was a significant actor effect (b = .36; β = .39; p <.01) meaning that individuals who reported receiving more brooding rumination also reported higher symptoms of psychopathology. The partner effect was non-significant (b = .08; β = .08; p =.80), meaning that the individual's reports of receiving brooding rumination were not associated with her partner's levels of psychopathology. The actor-partner interaction was non-significant (p = .17). The k value of the partner effect to the actor effect was 0.21 (95% *CI* = -.09, .56). Only the actor effect was significant and the confidence interval for k did not include -1 or 1, which suggests that an actor-only model is the best fit for the data.

Expressive Suppression. When entering the individual's perception of suppression provided to their friend as a predictor, the model accounted for less than 1% of the variance (Table 5). There was a significant actor effect (b = .10; β = .14; p = .03) meaning that individuals who reported providing more suppression also reported higher symptoms of psychopathology. The partner effect was non-significant (b = .01; β = .02; p

= .81), meaning that the individual's report of providing suppression was not associated with her partner's level of psychopathology. The actor-partner interaction was non-significant (b <.01; p = .15). The k value of the partner effect to the actor effect was 0.11 (95% *CI* = -1.48, 1.95). Only the actor effect was significant which suggests that an actor-only model is the best fit for the data, although the inclusion of -1 and 1 in the confidence interval suggests that this must be interpreted cautiously.

When entering the individual's perception of suppression received from their friend as a predictor, the model accounted for 4% of the variance (Table 6). There was a significant actor effect (b = .16; β = .23; p < .01) meaning that individuals who reported receiving more suppression also reported higher symptoms of psychopathology. The partner effect was non-significant (b = -.02; β = -.03; p = .62), meaning the individual's report of receiving suppression was not associated with her partner's level of psychopathology. The actor-partner interaction was significant (b = -.03; p = .02). For actors one standard deviation above the mean for suppression received, there was an inverse relationship between the level of suppression they perceived receiving and their partner's level of psychopathology (b = -.14, p = .03). For actors, one standard deviation below the mean, there was no effect (p = .15). In other words, for individuals who perceive high levels of suppression in their relationship, the more suppression they perceive, the lower levels of psychopathology that their partners report. On the other hand, for those who perceive low levels of suppression in their relationship, there is no relationship between level of suppression received and psychopathology. The k value of the partner effect to the actor effect was -.14 (95% *CI* = -.85, .48). Only the actor effect

was significant and the confidence interval for *k* did not include -1 or 1, which suggests that an actor-only model is the best fit for the data.

Reappraisal. When entering the individual's perception of reappraisal provided to their friend as a predictor, the model accounted for 3% of the variance (Table 7). There was no significant actor effect (b = -.04; β = -.07; p = .29) meaning that an individual's report of providing reappraisal was not associated with her level of psychopathology. The partner effect was significant (b = -.10; β = -.17 p = .81), meaning the individual's report of providing reappraisal was negatively associated with her partner's level of psychopathology. The actor-partner interaction was non-significant (b < - .01; p = .63). The k value of the partner effect to the actor effect was 2.40 (95% *CI* = -24.65, 26.13). Only the partner effect was significant, which suggests that a partner-only model is the best fit for the data, although the width of the confidence interval suggests that this must be interpreted cautiously.

When entering the individual's perception of reappraisal received from their friend as a predictor, the model accounted for 5% of the variance (Table 8). There was no significant actor effect (b = -.04; β = -.08; p = .20) meaning that an individual's report of receiving reappraisal was not associated with her level of psychopathology. The partner effect was significant (b = -.10; β = -.21 p < .01), meaning the individual's report of receiving reappraisal was negatively associated with her partner's level of psychopathology. The actor-partner interaction was non-significant (b < -.01; p = .61). The k value of the partner effect to the actor effect was 2.53 (95% *CI* = -21.15, 24.63). Only the partner effect was significant, which suggests that a partner-only model is the

best fit for the data, although the width of the confidence interval suggests that this must be interpreted cautiously.

Testing H2: Interpersonal Emotion Regulation Predicting Relationship Closeness and Influence

To test H2, I performed four APIMs for each emotion regulation strategy using participants' perceived provision of ER to their friend and participants' perceived receipt of ER from their friend as predictors and the IOSQ relationship closeness rating and RCI relationship influence measure as the outcome measures. The IOSQ and RCI were weakly correlated ($r = .23$; $p < .01$), but due to concerns about the reliability of the IOSQ as a one-item measure and because the two variables ostensibly assess different aspects of relationship quality, I chose to report the results separately. Given that habitual intrapersonal use of ER was associated with their interpersonal use of a strategy, I did not control for this in analyses.

Brooding Rumination. When entering the individual's perception of brooding rumination provided to their friend as a predictor and IOSQ relationship closeness as the outcome, the model accounted for less than 1% of the variance (Table 9). There was no significant actor effect ($b = .05$; $\beta = .08$; $p = .22$) meaning that an individual's report of providing brooding rumination was not associated with her perception of relationship closeness. The partner effect was non-significant ($b = .02$; $\beta = .04$ $p = .10$), meaning the individual's report of providing brooding rumination was not associated with her friend's perception of relationship closeness. The actor-partner interaction was non-significant ($b < .02$; $p = .15$). The k value of the partner effect to the actor effect was .49 (95% *CI* = -

5.79, 7.23). As neither the actor nor partner effects were significant, *k* was not interpreted.

When entering the individual's perception of brooding rumination provided to their friend as a predictor and RCI relationship influence as the outcome, the model accounted for 4% of the variance (Table 10). There was a significant actor effect (b = 1.51; β = .21; p <.01) meaning that an individual's report of providing brooding rumination was significantly positively associated with her perception of relationship influence. The partner effect was non-significant (b = -.07; β = -.01; p = .89), meaning the individual's report of providing brooding rumination was not associated with her friend's perception of relationship influence. The actor-partner interaction was non-significant (b = -.03; p = .86). The k value of the partner effect to the actor effect was -.04 (95% *CI* = -.95, .54). Only the actor effect was significant and the confidence interval for *k* did not include -1 or 1, which suggests that an actor-only model is the best fit for the data.

When entering the individual's perception of brooding rumination received from their friend as a predictor and IOSQ relationship closeness as the outcome, the model accounted for 5% of the variance (Table 11). There was no significant actor effect (b = .03; β = .05; p = .41) meaning that the individual's report of providing brooding rumination was not associated with her perception of relationship closeness. The partner effect was not significant (b = .02; β = .03, p = .61), meaning the individual's report of providing brooding rumination was not associated with her perception of relationship closeness. The actor-partner interaction was non-significant (b < .01; p = .81). The k

value of the partner effect to the actor effect was .62 (95% *CI* = -10.06, 10.42). As neither the actor nor partner effects were significant, *k* was not interpreted.

When entering the individual's perception of brooding rumination received from their friend as a predictor and RCI relationship influence as the outcome, the model accounted for 11% of the variance (Table 12). There was a significant actor effect (*b* = 2.14; β = .34; *p* < .01) meaning that the individual's report of providing brooding rumination was significantly positively associated with her perception of relationship influence. The partner effect was not significant (*b* = -.42; β = -.07, *p* = .28), meaning the individual's report of providing brooding rumination was not associated with her perception of relationship influence. The actor-partner interaction was non-significant (*b* = -.24; *p* = .10). The k value of the partner effect to the actor effect was -.20 (95% *CI* = -.67, .15). Only the actor effect was significant and the confidence interval for *k* did not include -1 or 1, which suggests that an actor-only model is the best fit for the data.

Expressive Suppression. When entering the individual's perception of suppression provided to their friend as a predictor and IOSQ relationship closeness, the model accounted for less than 1% of the variance (Table 13). There was no significant actor effect (*b* = .05; β = .08; *p* = .22) meaning that an individual's report of providing suppression was not associated with her perception of relationship closeness. The partner effect was non-significant (*b* = .02; β = .04 *p* = .10), meaning the individual's report of providing suppression was not associated with her friend's perception of relationship closeness. The actor-partner interaction was non-significant (*b* < .02; *p* = .15). The k

value of the partner effect to the actor effect was .49 (95% *CI* = -5.79, 7.23). As neither the actor nor partner effects were significant, *k* was not interpreted.

When entering the individual's perception of suppression provided to their friend as a predictor and RCI relationship influence as the outcome, the model accounted for less than 1% of the variance (Table 14). There was no significant actor effect ($b = .43$; $\beta = .09$; $p = .18$) meaning that an individual's report of providing suppression was not associated with her perception of relationship influence. The partner effect was non-significant ($b = .02$; $\beta = .04$; $p = .10$), meaning the individual's report of providing suppression was not associated with her friend's perception of relationship influence. The actor-partner interaction was non-significant ($b = .15$; $p = .12$). The k value of the partner effect to the actor effect was -.34 (95% *CI* = -7.14, 5.41). As neither the actor nor partner effects were significant, *k* was not interpreted.

When entering the individual's perception of suppression received from their friend as a predictor and IOSQ relationship closeness as the outcome, the model accounted for less than 1% of the variance (Table 15). There was no significant actor effect ($b < .01$; $\beta < .01$; $p = .96$) meaning that the individual's report of receiving suppression was not associated with her perception of relationship closeness. The partner effect was not significant ($b < .01$; $\beta < .01$; $p = .91$), meaning the individual's report of receiving suppression was not associated with her friend's perception of relationship closeness. The actor-partner interaction was non-significant ($b < .01$; $p = .79$). The k value of the partner effect to the actor effect was -.21 (95% *CI* = -13.01, 12.37). As neither the actor nor partner effects were significant, *k* was not interpreted.

When entering the individual's perception of suppression received from their friend as a predictor and RCI relationship influence as the outcome, the model accounted for less than 1% of the variance (Table 16). There was no significant actor effect (b = -.06; β = -.01; p = .84) meaning that the individual's report of receiving suppression was not associated with her perception of relationship influence. The partner effect was not significant (b = -.24; β = -.05; p = .43), meaning the individual's report of receiving suppression was not associated with her friend's perception of relationship influence. The actor-partner interaction was non-significant (b = .11; p = .15). The k value of the partner effect to the actor effect was 3.86 (95% *CI* = -15.92, 15.70). As neither the actor nor partner effects were significant, k was not interpreted.

Reappraisal. When entering the individual's perception of reappraisal provided to their friend as a predictor and IOSQ relationship closeness as the outcome, the model accounted for 2% of the variance (Table 17). There was no significant actor effect (b = .03; β = .09; p = .17) meaning that an individual's report of providing reappraisal was not associated with her perception of relationship closeness. The partner effect was non-significant (b = .04; β = .10 p = .12), meaning the individual's report of providing reappraisal was not associated with her friend's perception of relationship closeness. The actor-partner interaction was non-significant (b < -.01; p = .75). The k value of the partner effect to the actor effect was 1.13 (95% *CI* = -10.18, 12.60). As neither the actor nor partner effects were significant, k was not interpreted.

When entering the individual's perception of reappraisal provided to their friend as a predictor and RCI relationship influence as the outcome, the model accounted for 5%

of the variance (Table 18). There was a significant actor effect (b = .58; β = .14; p = .03) meaning that an individual's report of providing reappraisal was significantly positively associated with her perception of relationship influence. The partner effect was significant (b = .59; β = .14 p = .03), meaning the individual's report of providing reappraisal was positively associated with her friend's perception of relationship influence. The actor-partner interaction was non-significant (b = -.02; p = .54). The k value of the partner effect to the actor effect was 1.01 (95% *CI* = -.05, 6.14). The actor and partner effects were significant, which suggest that a couple model is the best fit for the data, although the inclusion of 0 in the confidence interval suggests that this must be interpreted cautiously.

When entering the individual's perception of reappraisal received from their friend as a predictor and IOSQ relationship closeness as the outcome, the model accounted for 4% of the variance (Table 19). There was a significant actor effect (b = .05; β = .16; p = .01) meaning that the individual's report of receiving reappraisal was positively associated with her perception of relationship closeness. The partner effect was also significant (b = .04; β = .14; p = .03), meaning the individual's report of receiving reappraisal was positively associated with her friend's perception of relationship closeness. The actor-partner interaction was non-significant (b < .01; p = .59). The k value of the partner effect to the actor effect was .85 (95% *CI* = .03, 3.8). The actor and partner effects were significant and the confidence interval for k did not include -1 or 0, which suggests that a couple model is the best fit for the data.

When entering the individual's perception of reappraisal received from their friend as a predictor and RCI relationship strength as the outcome, the model accounted for 8% of the variance (Table 20). There was a significant actor effect (b = .85; β = .25; p < .01) meaning that the individual's report of receiving reappraisal was positively associated with her perception of relationship influence. The partner effect was also significant (b = .46; β = .13; p = .03), meaning the individual's report of receiving reappraisal was positively associated with her friend's perception of relationship influence. The actor-partner interaction was non-significant (b = -.01; p = .65). The k value of the partner effect to the actor effect was .54 (95% CI = .05, 1.34). The actor and partner effects were significant and the confidence interval for k did not include -1 or 0, which suggests that a couple model is the best fit for the data.

Testing H3: Emotion Regulation Reciprocity Predicting Composite Psychopathology

To test H3, I performed one APIM for each emotion regulation strategy using the participants' reciprocity variable for each emotion regulation strategy as a predictor and the composite psychopathology variable as the outcome measure. Positive values for the reciprocity variable indicate the respondent reported providing the strategy to her friend more than she received it, whereas negative values indicate that the respondent reported receiving the strategy from her friend more than she provided it. Given that habitual intrapersonal use of ER was associated with their interpersonal use of a strategy, I did not control for this in analyses.

Brooding Rumination. When entering the brooding rumination reciprocity variable as the predictor, the model accounted for 1% of the variance (Table 21). There

was no significant actor effect (b = -.52; β = -.13; p = .05) meaning that an individual's report of brooding rumination reciprocity was not associated with her level of psychopathology. The partner effect was non-significant (b = .15; β = .04; p = .58), meaning the individual's report of brooding rumination reciprocity was not associated with her friend's level of psychopathology. The actor-partner interaction was non-significant (b < .03; p = .93). The k value of the partner effect to the actor effect was -.29 (95% *CI* = -4.03, 1.49). Only the actor effect was significant, which suggests that an actor-only model is the best fit for the data, although the width of the confidence interval mean this must be interpreted cautiously.

Expressive Suppression. When entering the suppression reciprocity variable as the predictor, the model accounted for 1% of the variance (Table 22). There was a significant actor effect (b = -.60; β = -.15; p = .03) meaning that an individual's report of suppression reciprocity was negatively associated with her level of psychopathology. In other words, as individuals perceived that they were overbenefiting (i.e., receiving more suppression then they were offering to their friend), they also reported greater psychopathology. The partner effect was non-significant (b = .08; β = .02; p = .77), meaning the individual's report of suppression reciprocity was not associated with her friend's level of psychopathology. The actor-partner interaction was non-significant (b = -.70; p = .15). The k value of the partner effect to the actor effect was -.13 (95% *CI* = -2.11, 1.11). Only the actor effect was significant, which suggests that an actor-only model is the best fit for the data, although the width of the confidence interval mean this must be interpreted cautiously.

Reappraisal. When entering the reappraisal reciprocity variable as a predictor, the model accounted for less than 1% of the variance (Table 23). There was not a significant actor effect (b = -.08; β = -.02; p = .03) meaning that an individual's report of reappraisal reciprocity was not associated with her level of psychopathology. The partner effect was non-significant (b = .13; β = .03; p = .64), meaning the individual's report of reappraisal reciprocity was not associated with her friend's level of psychopathology. The actor-partner interaction was non-significant (b = -.27; p = .44). The k value of the partner effect to the actor effect was -1.73 (95% CI = -12.69, 14.08). As neither the actor nor partner effects were significant, k was not interpreted.

Testing H4: Emotion Regulation Reciprocity Predicting Relationship Closeness and Influence

To test H4, I performed two APIM for each emotion regulation strategy using the participants' reciprocity variable for each emotion regulation strategy as a predictor and the IOSQ relationship closeness variable or RCI relationship strength as the outcome measure. Positive values for the reciprocity variable indicate the respondent reported providing the strategy to her friend more than she received it (i.e., underbenefiting), whereas negative values indicate that the respondent reported receiving the strategy from her friend more than she provided it (i.e., overbenefiting). Given that habitual intrapersonal use of ER was associated with their interpersonal use of a strategy, I did not control for this in analyses.

Brooding Rumination. When entering the brooding rumination reciprocity variable as a predictor and IOSQ relationship closeness as the outcome, the model accounted for less than 1% of the variance (Table 24). There was no significant actor

effect (b = .09; β = .04; p = .58 meaning that an individual's report of brooding rumination reciprocity was not associated with her perception of relationship closeness. The partner effect was non-significant (b = .02; β < .01; p = .90), meaning the individual's report of brooding rumination reciprocity was not associated with her friend's perception of relationship closeness. The actor-partner interaction was non-significant (b = -3.03; p = .21). The k value of the partner effect to the actor effect was .24 (95% *CI* = -9.93, 10.93). As neither the actor nor partner effects were significant, k was not interpreted.

When entering the brooding rumination reciprocity variable as a predictor and RCI relationship influence as the outcome, the model accounted for less than 1% of the variance (Table 25). There was no significant actor effect (b = -2.56; β = -.09; p = .17 meaning that an individual's report of brooding rumination reciprocity was not associated with her perception of relationship influence. The partner effect was non-significant (b = .88; β = .03; p = .64), meaning the individual's report of brooding rumination reciprocity was not associated with her friend's perception of relationship influence. The actor-partner interaction was non-significant (b =-3.03; p = .21). The k value of the partner effect to the actor effect was -.34 (95% *CI* = -7.40, 5.87). As neither the actor nor partner effects were significant, k was not interpreted.

Expressive Suppression. When entering the suppression reciprocity variable as a predictor and IOSQ relationship closeness as the outcome, the model accounted for less than 1% of the variance (Table 26). There was not a significant actor effect (b = -.03; β = -.01; p = .86) meaning that an individual's report of suppression reciprocity was not

associated with her perception of relationship closeness. The partner effect was non-significant (b = -.02; β < -.01; p = .89), meaning the individual's report of suppression reciprocity was not associated with her friend's perception of relationship closeness. The actor-partner interaction was non-significant (b = -.32; p = .29). The k value of the partner effect to the actor effect was .75 (95% *CI* = -11.57, 12.49). As neither the actor nor partner effects were significant, k was not interpreted.

When entering the suppression reciprocity variable as a predictor and RCI relationship influence as the outcome, the model accounted for 1.7% of the variance (Table 27). There was a significant actor effect (b = 4.36; β = .15; p = .02) meaning that an individual's report of suppression reciprocity was positively associated with her perception of relationship influence. In other words, as individuals perceived that they were underbenefiting (i.e., providing more suppression then they were receiving from their friend), they also reported greater relationship influence. The partner effect was non-significant (b = 1.29; β = .05; p = .48), meaning the individual's report of suppression reciprocity was not associated with her friend's perception of relationship influence. The actor-partner interaction was non-significant (b = 5.88; p = .09). The k value of the partner effect to the actor effect was .30 (95% *CI* = -1.00, 1.74). Only the actor effect was significant, which suggests that an actor-only model is the best fit for the data, although the width of the confidence interval mean this must be interpreted cautiously.

Reappraisal. When entering the reappraisal reciprocity variable as a predictor and IOSQ relationship closeness as the outcome, the model accounted for less than 1% of the variance (Table 28). There was not a significant actor effect (b = -.27; β = -.10; p =

.12) meaning that an individual's report of reappraisal reciprocity was not associated with her perception of relationship closeness. The partner effect was non-significant (b = -.13; β = -.05; p = .46), meaning the individual's report of reappraisal reciprocity was not associated with her friend's perception of relationship closeness. The actor-partner interaction was non-significant (b = .24; p = .26). The k value of the partner effect to the actor effect was .48 (95% *CI* = -3.36, 4.68). As neither the actor nor partner effects were significant, k was not interpreted.

When entering the reappraisal reciprocity variable as a predictor and IOSQ relationship closeness as the outcome, the model accounted for less than 1% of the variance (Table 29). There was not a significant actor effect (b -3.58; β = -.12; p = .08) meaning that an individual's report of reappraisal reciprocity was not associated with her perception of relationship influence. The partner effect was non-significant (b = .68; β = .02; p = .66), meaning the individual's report of reappraisal reciprocity was not associated with her friend's perception of relationship influence. The actor-partner interaction was non-significant (b = -1.15; p = .26). The k value of the partner effect to the actor effect was -.19 (95% *CI* = -4.51, 2.33). As neither the actor nor partner effects were significant, k was not interpreted.

Chapter 4: Discussion

This novel study design yielded evidence suggesting that there are relationships between the interpersonal use of emotion regulation and symptoms of psychopathology and perceptions of relationship influence and closeness. Interestingly, interpersonal emotion regulation appears to function similarly to intrapersonal usage in predicting individual's well-being, underscoring the importance of evaluating interpersonal factors.

In this sample, these interpersonal findings paralleled the intrapersonal findings, in that for these participants, the intrapersonal use of brooding rumination and suppression were associated with greater psychopathology, while the intrapersonal use of reappraisal was associated with lower psychopathology. Thus, these associations are consistent with the findings from the meta-analysis of the intrapersonal use of emotion regulation strategies by Aldao and colleagues (2010), which found that putatively maladaptive strategies exhibit a positive association and putatively adaptive strategies exhibit a negative association with symptoms of psychopathology. This may serve as a sort of "setting conditions check" in that participants showed expected associations between use of intrapersonal emotion regulation strategies and psychopathology, lending increased credibility to their report of interpersonal use of emotion regulation and symptoms.

Overall, I found that the respondent's perceptions of providing and receiving brooding rumination and suppression were positively associated with her symptoms of psychopathology (i.e., an actor effect). In other words, respondents who reported a higher frequency of providing and receiving brooding rumination and suppression also tended to report higher symptoms of psychopathology. Furthermore, providing brooding rumination also exhibited a partner effect, such that when the respondent's friend reported providing greater brooding rumination, the respondent also tended to report higher symptoms of psychopathology. For providing and receiving reappraisal, there were partner effects, such that when respondent's friends reported providing and receiving greater reappraisal, the respondent tended to report lower symptoms of psychopathology. In all cases the direction of these associations was consistent with my primary prediction that increased interpersonal use of putatively maladaptive strategies (i.e., brooding rumination, suppression) would be associated with increased symptoms of psychopathology, while the increased interpersonal use of putatively adaptive strategies (i.e., reappraisal) would be associated with lower symptoms of psychopathology.

For the models examining reports of receiving rumination and suppression from one's friend, the actor-only models were the models of best fit, meaning that the friend's report of receiving rumination and suppression were unrelated to the respondent's symptoms. Similarly, for providing suppression, the actor-only model was the best fit, meaning that the friend's report of providing suppression was unrelated to the respondent's symptoms. In contrast, when examining ratings of providing brooding rumination, the couple model was the best fit. Thus, individuals who reported providing

higher levels of brooding rumination tended to also report experiencing more symptoms. By the same token, the partners of individuals who reported providing higher levels of brooding also tended to report more symptoms. Finally, for providing and receiving reappraisal, the partner-only models were the best fit.

Examining the models of best fit for these analyses, there are several trends to note. First, even though significant effects were found for all of the models, the most variance accounted for by any of them was 15% (providing reappraisal), with the 4 of the models only accounting for 1%-5% each. This means that these findings need to be interpreted cautiously. Second, although only two of the models had confidence intervals supporting an actor-only model as the best fit, significant actor-only effects were found in three of the six models (receiving rumination, providing suppression, and receiving suppression). The lack of significant partner effects for these models suggests that the partner's perception of providing or receiving emotion regulation was not associated with her friend's symptoms of psychopathology; rather, it was only the individual's perception of providing and receiving regulation that was linked to her symptoms.

On the other hand, the significant partner effects for reappraisal are an interesting contrast. In these models, rather than the individual's perception of giving and receiving reappraisal being associated with that individual's own psychopathology, they are instead each linked to the partner's report of symptoms. For example, individuals who reported providing higher levels of reappraisal tended to have partners who reported lower levels of symptoms. This was contrary to my hypotheses, which predicted that I would find either actor-only effects or couple effects. Finally, only in one case were both partner and

actor effects observed. Specifically, reports of providing brooding rumination by an actor were positively associated with that actor's own symptoms as well as their partner's symptoms. The width of the confidence interval of *k*, however, suggests that caution needs to be taken in interpreting this couple model.

The findings for brooding rumination are consistent with the past literature on co-rumination, which have found that co-rumination, in general, is associated with depressive symptoms and increased emotional difficulty (e.g., Bastin et al., 2014; Hruska, Zelic, Dickson, & Ciesla, 2017; Rose, 2002; Rose et al., 2007; Rose, Glick, Smith, Schwartz-Mette, & Borowski, 2017; Rose, Schwartz-Mette, Glick, Smith, & Luebbe, 2014). However, there are a few important differences between the previous studies and the current study that should be noted. First, the previous literature has primarily examined co-rumination or co-brooding by asking about the construct from the perspective of the dyad as a unified entity (e.g., from the Co-Rumination Questionnaire by Rose and colleagues (2002): "When we talk about a problem that one of us has, we try to figure out every one of the bad things that might happen because of the problem"), whereas in this study, co-brooding was assessed from the perspective from each member of the dyad (e.g., "She helped me think, 'What am I doing to deserve this?' and "I helped her think, 'What is she doing to deserve this?'"). This way of asking about interpersonal behaviors differs from asking about the dyad as a unified entity because it allows the researcher to identify the relative contribution of each individual in the brooding behavior. It is certainly possible that the target of the brooding rumination may be a particular member of the pair and that each member does not equally provide and receive

interpersonal brooding rumination. Furthermore, it is possible that being the target of the brooding rumination (i.e., the person whose perceived personal failing is being discussed) is perceived differently than providing rumination. Indeed, in this study, actor-only effects emerged for receiving brooding rumination, but a couple model (i.e., actor and partner effects) was observed for providing brooding rumination. On the other hand, the width of the confidence interval for the couple model, suggests that a hybrid between an actor/partner only model and a couple model may better capture these findings. Future studies may wish to further explore this distinction between being the "target" of the interpersonal support or the provider, rather than examining overall patterns of the dyad.

Examining links between interpersonal use of expressive suppression and psychopathology is potentially relevant because, even when used intrapersonally, this strategy is more likely to occur in social contexts, rather than when the individual is alone. Expressive suppression consists of masking emotional responses (e.g., Gross, 1998), which researchers hypothesize primarily serves social goals, such as preventing negative judgment or avoiding conflict (e.g., Niedenthal, Krauth-Gruber, & Ric, 2006). For instance, individuals may suppress negative emotions due to a belief that others will perceive their emotional expression as weakness. In this way, expressive suppression is more likely than the other strategies to be undertaken with social objectives in mind, as compared to reappraisal or rumination, which may have social concerns present, but likely do not have these as primary motivations. Expressive suppression may occur without others present, but, by definition, it is a more interpersonally-focused strategy. In

this study, I found that providing and receiving expressive suppression showed actor effects, but not partner effects.

The previous literature on expressive suppression has not tended to explicitly examine the joint-use of expressive suppression (e.g., how one individual encourages the other not to express emotions), however, the literature on emotional invalidation may provide some context for the findings observed in this study. Emotional invalidation is the negation or dismissal of an individual's emotional experiences (e.g., Linehan, 1993). Childhood emotional invalidation perpetrated by parents has been linked to internalizing and externalizing problems in adolescence (e.g., Buckholdt, Parra, & Jobe-Shields, 2014), as well as higher symptoms of borderline personality disorder (e.g., Sauer & Baer, 2010; Sturrock & Mellor, 2014), and eating disorders (e.g., Arcelus, Haslam, Farrow, & Meyer, 2013; Haslam, Mountford, Meyer, & Waller, 2008) in adulthood. The interpersonal use of expressive suppression, i.e., directing another how to utilize suppression, could be considered an aspect of emotional invalidation, as it encourages another to mask or minimize their true emotions. In one study, emotional inhibition of expression fully mediated the association between childhood emotional invalidation and adult psychological distress (Krause, Mendelson, & Lynch, 2003), which suggests links between interpersonal interventions for emotional response (i.e., emotional invalidation), intrapersonal expressive suppression (i.e., emotional inhibition of expression), and distress. Although this provides some promising evidence for the utility of examining interpersonal expressive suppression provision and receipt, there is the caveat that the majority of this work has been done examining parent-child reports of emotional

invalidation, making the generalizability to friendship relationships questionable. Encouragingly, the results from the current study do appear to be in line with the previous literature. Specifically, I found that individuals reporting higher levels of both receiving and providing help with expressive suppression tended to have poorer mental health. This suggests that helping others to minimize their emotional experiences and receiving help in minimizing your emotional experience is associated with increased psychological dysfunction.

Finally, the associations for reappraisal are consistent in direction with the previous literature on co-reappraisal, although I found partner effects rather than actor effects. Previous studies examining the use of co-reappraisal have found negative associations with psychopathology (e.g., Horn & Maercker, 2016). As with the literature on co-rumination, it is important to consider that the previous literature has primarily examined this as a unified dyadic construct, rather than partitioning into provision and receipt by each member of the pair. In this study, I found evidence that it is the partner's report of providing to and receiving reappraisal from the target individual that is linked to lower reports of symptoms by that target individual. Surprisingly, neither the individual's own report of providing and receiving reappraisal was linked to her own mental health. One possibility is that reporting is less reliable for the strategy of reappraisal, in that the partner is a more accurate judge of the provision and receipt of the strategy than the individual is; although it is unclear why this would be true for interpersonal reappraisal and not the other strategies. This finding is in need of replication to better understand what may be occurring for interpersonal use of reappraisal.

Taken together, these preliminary findings on the associations between the interpersonal use of strategies and mental health suggest that this is an area of study deserving further investigation. Overall, I found interesting and potentially important parallels between how interpersonal and intrapersonal emotion regulation predict mental health. Future studies may wish to further parse out the relative contributions of interpersonal and intrapersonal emotion regulation strategies or interactions between the two; for instance, it may be worthwhile to examine moderation effects to determine if interpersonal usage has differential effects depending on one's habitual intrapersonal style.

In addition to examining mental health outcomes, I was also interested in exploring how the use of different interpersonal emotion regulation strategies is related to characteristics of the partners' relationship. This is important because relationships that people perceive as close may not necessarily be beneficial to their mental health. In this study, I examined relationship influence and relationship closeness. Relationship influence refers to the extent to which someone believes that her friend influences her thoughts and behaviors (e.g., Berscheid, Snyder, & Omoto, 1989), while relationship closeness assesses intimacy, interdependence, or communal identity (e.g., Aron et al., 1992; Gächter, Starmer, & Tufano, 2015).

For the relationship quality variables, there were fewer significant actor and partner effects in predicting relationship closeness and relationship influence. When examining relationship closeness, this study failed to find predicted associations, with only perception of the friend providing reappraisal, showing positive actor and partner

effects. In this case, the width of the confidence interval was very large, suggesting that one must be cautious interpreting this as a couple model. One potential explanation for this is the specific measure utilized, the IOSQ. The IOSQ consists of a single-item where individuals may select an image that she believes best captures the closeness of her relationship with her friend. The IOSQ has been found to be correlated with other measures of relationship closeness and is considered to be reliable by many due to its convergent validity (Gächter et al., 2015); however, a closer examination of its correlations with other similar measures, including the Relationship Closeness Inventory subscales, shows that these correlations were only moderate. For example, in the study by Gachter and colleagues, the IOSQ and RCI relationship influence scale were correlated at $r = .36$ (as compared to r = .23 in the present study). In this sample, the use of a single item may not provide similar reliability, as evidenced by the weaker convergent correlations. Other studies may wish to collect information about relationship closeness by utilizing other measures (e.g., MFQ-RA; Mendelson & Aboud, 1999).

When examining relationship influence, I found that there were significant associations between an individual's reports of providing and receiving rumination and her perception of relationship influence, such that individuals who perceived providing and receiving more rumination tended to report higher relationship influence. Reappraisal showed similar positive actor effects as well as partner effects, such that a participant's reports of providing and receiving reappraisal were associated with higher perception of relationship influence for her friend. Taken together, these findings suggest that higher

use of interpersonal emotion regulation was linked to greater perceived influence of the friend in the relationship.

Examining the models of best fit for these analyses, there are several trends to note. First, as with the models predicting psychopathology, the overall variance accounted for by the models was relatively low (1%-11%), meaning that these associations need to be interpreted cautiously and that the contributions of interpersonal ER to predicting relationship quality are relatively minor. Second, for providing and receiving brooding rumination, the actor-only models were the models of best fit according to both the actor effects observed and the width of the confidence interval. In contrast there were no models of best fit for suppression, contrary to expectation. For providing and receiving reappraisal, the models of best fit were couple models, although the width of the confidence interval for providing reappraisal limits its interpretation. These models suggest that one's perception of receiving and providing appraisal and one's partner's perception of receiving and providing reappraisal were associated with higher relationship influence.

There is relatively little literature on the associations between co-brooding and relationship quality indices. The majority of the extant work has examined co-rumination as unitary construct and has not specifically assessed relationship influence. In these studies, researchers have found that co-rumination is positively associated with relationship quality, such that individuals who report higher levels of co-rumination report greater relationship closeness (e.g., Rose, 2002; Rose et al., 2007; Smith & Rose, 2011; Starr & Davila, 2009), leading some to conclude that there is a paradoxical effect

of co-rumination, such that it promotes poorer mental health but leads to greater relationship closeness. However, more recent work (e.g., Bastin et al., 2014) has suggested co-rumination may be better characterized as a two-factor model comprising co-reflection (i.e., active discussion of potential problematic causal variables) and co-brooding (i.e., a passive process characterized by catastrophization and lingering on negative emotions). Consistent with this view, Bastin and colleagues (2017) found differential associations between co-brooding and co-reflection, such that co-brooding was not linked to measures of relationship quality (with the exception of a trend to reporting higher relationship conflict), whereas co-reflection was linked to multiple indices of higher relationship quality. Thus, it is possible that co-brooding does not contribute to relationship quality in the same manner as co-reflection. The current study suggests that co-brooding does relate to relationship influence, in that individuals who report providing more brooding and receiving more brooding rumination reported higher perceptions of relationship influence. This is in contrast with the study by Bastin and colleagues (2017), however, it is important to consider that the relationship closeness variable in this study (IOSQ) may have significant reliability problems, meaning that a direct comparison cannot be made. Furthermore, this study assessed college-aged female friendships, while the other study assessed adolescent male and female friendships. Given the relative dearth of studies examining co-brooding, it is premature to draw any conclusions about the associations between it and indices of relationship quality. Future studies may wish to assess co-brooding in college-aged women and to additionally assess co-reflection. In particular, given that this is the first study to assess co-brooding in

relation to relationship influence, which may function differently than other indices of relationship quality, researchers should explore a range of potential relationship quality variables.

The extant literature on expressive suppression suggests that the use of suppression in social contexts is associated with poorer relationship quality, which makes it surprising that I did not find any actor or partner effects when predicting relationship closeness and relationship influence. For example, in a study of couples by Impett and colleagues (2014), people reported lower relationship quality, both concurrently and longitudinally, when people perceived their partner as having suppressed his or her emotions when describing a sacrifice. Similarly, in an ecological momentary assessment study, couples who reported greater emotional suppression during sacrifice also reported lower relationship quality (Impett et al., 2012). On the other hand, these findings must be considered in the context of culture and interpersonal styles. In this study, I did not examine cultural beliefs about emotional expression. It is possible that some of my participants held cultural beliefs about the desirability of emotional expression that were confounds in this analysis. For example, individuals with high interdependent self-construals may actually show higher relationship quality when suppressing negative emotions during sacrifice, as compared to those who have higher independent self-construals (Le & Impett, 2013). Other research corroborates this by suggesting that the social consequences of expressive suppression may be moderated by cultural values, such as communal orientations (e.g., Butler, Lee, & Gross, 2007; Soto, Perez, Kim, Lee, & Minnick, 2011; Su, Lee, & Oishi, 2013). Future studies should examine individual and

cultural values when examining the relationships between suppression and relationship quality. While care must be taken to not over-interpret null findings, it is certainly possible that the way in which I assessed interpersonal expressive suppression may not have accurately captured the way in which individuals attempt to regulate each other's emotions.

Despite not finding associations between suppression and relationship quality, the parallels between emotional invalidation and expressive suppression suggest that it still may be relevant to understanding potential associations with relationship quality. Although there is little research specifically examining emotional invalidation and relationship quality, the extant findings suggest that higher invalidation is linked to poorer relationship quality in couples (e.g., Overall, Fletcher, & Simpson, 2010; Stanley, Markman, & Whitton, 2002). It must be noted, however, that these studies typically have examined invalidation as a subset of other negative support behavior and cover a broader range of behaviors, beyond that of encouraging one to minimize emotional expression. Thus, it may be more relevant to examine the construct of emotional invalidation, rather than expressive suppression.

Finally, the literature on intrapersonal reappraisal suggests that co-reappraisal could have positive effects on relationship quality. For example, college freshman who reported higher use of habitual intrapersonal reappraisal were rated as having higher social status and higher relationship closeness by their peers four years later (e.g., English, John, Srivastava, & Gross, 2012). The findings from this study are consistent with the findings on intrapersonal reappraisal. I found that actor and partner-rated

provision and receipt of reappraisal were associated with higher relationship influence. This is the first study to specifically examine co-reappraisal and relationship influence, which means that although these findings are important, they require replication in future investigations.

There was little support for my predictions that emotion regulation reciprocity would predict symptoms of psychopathology, relationship closeness, and relationship influence. The only significant associations observed were for suppression reciprocity predicting symptoms of psychopathology and relationship influence. Specifically, respondents who reported greater over benefiting imbalances, in that they receive more expressive suppression than they provide, also reported higher levels of psychopathology. Respondents who reported greater under benefiting imbalances, such that they provided more expressive suppression than they received, reported higher relationship influence. One reason why expected predictions may not have been observed is due to a limitation of the Actor-Partner Interdependence Model, which only accommodates linear predictors. The previous literature suggests that reciprocity is likely better represented as a quadratic function, with more significant deleterious effects observed at the two extremes (e.g., Buunk et al., 1993, 2013; Buunk & Schaufeli, 1999; Jou & Fukada, 2002; Takizawa et al., 2006). Thus, running these models using linear predictors may have confounded the results and obscured the relationship between reciprocity and psychopathology and relationship quality. To follow-up with this possibility, I separated the partners into two different data sets (thus eliminating the concerns about interdependence when trying to run all of the participants in a single analysis) and conducted an exploratory analysis to

see if there was a quadratic relationship between reciprocity and psychopathology, relationship closeness, and relationship influence. In no case did an emotion regulation reciprocity variable show a significant quadratic relationship with any dependent variable, which was contrary to my expectations. Future studies may wish to further examine perception of reciprocity and utilize alternate ways of assessing this, such as examining general trends for providing and receiving support, rather then the use of specific strategies, which may be too nuanced to show larger overall patterns.

In summary, in this study I assessed a facet of enacted social support (i.e, interpersonal emotion regulation). Enacted support comprises the tangible acts of support that individuals may provide and receive. Much of the previous literature on enacted support has failed to find associations between enacted support and mental health outcomes (e.g., J. Cohen et al., 2005; Haber et al., 2007; Lakey & Orehek, 2011; Siedlecki et al., 2014), as such we might not expect to find strong associations in the present study; however, although modest, we did find such associations. This suggests that examining the emotional side of enacted support is a promising future direction and supports the utility of dividing enacted support into emotional and instrumental components. An interesting question to explore further would be to examine how self-reported use of interpersonal emotion regulation relates to perceptions of support availability (i.e., *perceived social support*). The literature has found that perceived social support tends to show more robust associations with mental health and relationship quality, as compared to enacted social support. In particular, it may be important to examine links between enacted emotional support and perceived social support.

Longitudinal designs would be especially suited to this line of investigation, as they would allow researchers to determine if changes in interpersonal emotion regulation provided/received were associated with changes in perceived social support and consequently, measures of well-being.

Limitations and Future Directions

An important limitation to consider for this study is that although significant actor and partner effects were found for multiple models, the actual percentage of the variance accounted for by the overall models was typically relatively low. This is not entirely unexpected, given that psychopathology is a complex and relatively distal construct, with many individual variables (e.g., stress, externalizing symptoms, perceived availability of support) that also contribute to the expression of symptoms that were not controlled for or tested as moderators in this study.

The cross-sectional nature of this study also precludes any causal interpretation of the findings. Therefore, while the data suggest an association between interpersonal emotion regulation and mental health and relationship quality variables, it does not allow one to determine the direction of that relationship. For example, while it is possible that providing brooding rumination results in increased psychopathology for the individual doing so, it is equally possible that individuals with higher levels of psychopathology are more likely to provide brooding rumination to their friends. Longitudinal studies may help to determine the direction of this association. For instance, participants may be asked to rate their use of interpersonal emotion regulation, symptoms of psychopathology, and relationship closeness over a period of time. These measures can

then be entered into models to examine changes. Furthermore, future research may wish to examine bidirectional models, as it is probable that interpersonal emotion regulation acts similarly to intrapersonal emotion regulation in how it interacts with symptoms of psychopathology. For example, individuals who use intrapersonal brooding rumination may experience higher levels of psychopathology, which then promotes an increase in intrapersonal brooding rumination. It is reasonable to expect that the same would hold for the interpersonal use of brooding rumination.

The current study utilized an unselected college-aged sample. While examining friendships in this population is important in order to better understand how these processes function in a normative young adult context, it does limit the generalizability of the findings. For instance, individuals enrolled in college tend to have better psychological functioning than their same-aged peers (e.g., Cvetkovski, Jorm, & Mackinnon, 2017; Han et al., 2016; Kovess-Masfety et al., 2016; Mortier et al., 2018); as such, the use of this sample may have resulted in a more restricted range of psychopathology and maladaptive use of emotion regulation, making it more difficult to examine problematic relationships between the two. Potential ways to address this confound may include oversampling for individuals with symptoms of psychopathology or with maladaptive patterns of emotion regulation (e.g., higher use of brooding rumination, lower use of reappraisal) or using broader recruitment strategies to create a more representative sample of young adults in terms of education and socio-economic status.

This study only used female participants to ensure that it would be appropriately powered and feasible to conduct, given that patterns of interpersonal emotion regulation tend to differ between males and females. For example, previous work has found gender differences in the frequency of use of co-rumination and in its associations with mental health. Specifically, girls have been found to utilize co-rumination more frequently, which predicts higher rates of internalizing disorders (Calmes & Roberts, 2008; Rose, 2002; Tompkins, Hockett, Abraibesh, & Witt, 2011); in comparison, boys tend to utilize co-rumination less frequently and it may not predict depression and anxiety to the same extent (Rose et al., 2007). Given these gender differences, it would be worthwhile to examine associations between emotion regulation and mental health and relationship quality in male-male and female-male friendships.

A caveat to interpreting the results from this study is that while it assessed the individual's reports of providing and receiving different types of regulation, it did not assess the *effectiveness* of the regulation provided. This is an important distinction, as endorsement of a strategy does not mean that it is utilized properly or that it is utilized effectively. It would be interesting to examine if effectiveness of the strategy related to mental health and relationship closeness variables. One way to do this would be by asking participants about their perceptions of ER effectiveness; another method may be to use ecological momentary assessment (e.g., Shiffman, Stone, & Hufford, 2008). In this type of study, researchers can collect repeated measures data as participants respond to prompts in real-time, thereby reducing recall bias. An EMA study may ask participants to

rate their use of interpersonal emotion regulation and affect at different points throughout the day, which could be used to examine the impacts of interpersonal ER over time.

Finally, in this analysis, I did not control for intrapersonal usage of strategies. The correlations between intrapersonal and interpersonal use of these strategies suggest that although individuals report similarities in their intrapersonal and interpersonal use of strategies, they are not the same construct. For instance, brooding rumination, expressive suppression, and reappraisal, showed only moderate correlations between the intrapersonal use of the strategy and the individual's report of providing the strategy to others (r = .36, r = .32, r = .31, respectively). Similarly, participants exhibited moderate correlations for receiving this type of regulation from their friends (r_{BR} = .49, r_{ES}= .35, r_r= .35). Given that these correlations were only moderate, I chose to not control for intrapersonal usage; although future studies may wish to include intrapersonal usage as a covariate or potential moderator.

To date, this is the first study to examine the self-reported use of habitual interpersonal emotion regulation using a paired design, which represents a notable strength, as it allows us to test the associations between two individuals' reports of interpersonal emotion regulation and various measures of well-being. As such, this provides an interesting opportunity to evaluate the extent to which our reports of providing emotion regulation actually impact our friends' symptoms of psychopathology and perceptions of relationship closeness.

Overall, this study is an important step forward in our understanding of how individuals utilize emotion regulation strategies in social contexts. It provides preliminary

evidence that there is an association between interpersonal use of emotion regulation and symptoms of psychopathology, as well as relationship influence, that functions similarly to that of intrapersonal emotion regulation, which could have implications for clinical practice and future research.

Bibliography

Aldao, A. (2013). The future of emotion regulation research: Capturing context. *Perspectives on Psychological Science*, *8*(2), 155–172. https://doi.org/10.1177/1745691612459518

Aldao, A., & Nolen-Hoeksema, S. (2010). Specificity of cognitive emotion regulation strategies: A transdiagnostic examination. *Behaviour Research and Therapy*, *48*(10), 974–983. https://doi.org/10.1016/j.brat.2010.06.002

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*(2), 217–237. https://doi.org/10.1016/j.cpr.2009.11.004

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

Arcelus, J., Haslam, M., Farrow, C., & Meyer, C. (2013). The role of interpersonal functioning in the maintenance of eating psychopathology: A systematic review and testable model. *Clinical Psychology Review*, *33*(1), 156–167. https://doi.org/10.1016/j.cpr.2012.10.009

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, *63*(4), 596–612. https://doi.org/10.1037/0022-3514.63.4.596

Bagwell, C. L., Bender, S. E., Andreassi, C. L., Kinoshita, T. L., Montarello, S. A., & Muller, J. G. (2005). Friendship quality and perceived relationship changes predict psychosocial adjustment in early adulthood. *Journal of Social and Personal Relationships*, *22*(2), 235–254. https://doi.org/10.1177/0265407505050945

Bastin, M., Bijttebier, P., Raes, F., & Vasey, M. W. (2014). Brooding and reflecting in an interpersonal context. *Personality and Individual Differences*, *63*, 100–105. https://doi.org/10.1016/j.paid.2014.01.062

Bastin, M., Vanhalst, J., Raes, F., & Bijttebier, P. (2017). Co-Brooding and co-reflection as differential predictors of depressive symptoms and friendship quality in adolescents: Investigating the moderating role of gender. *Journal of Youth and Adolescence*, 1–15. https://doi.org/10.1007/s10964-017-0746-9

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York, NY, US: Guilford Press.

Berscheid, E., Snyder, M., & Omoto, A. M. (1989). The Relationship Closeness Inventory: Assessing the closeness of interpersonal relationships. *Journal of Personality and Social Psychology*, *57*(5), 792.

Borsari, B., & Carey, K. B. (2001). Peer influences on college drinking: A review of the research. *Journal of Substance Abuse*, *13*(4), 391–424. https://doi.org/10.1016/S0899-3289(01)00098-0

Brown, E. J., Turovsky, J., Heimberg, R. G., Juster, H. R., Brown, T. A., & Barlow, D. H. (1997). Validation of the Social Interaction Anxiety Scale and the Social Phobia Scale across the anxiety disorders. *Psychological Assessment*, *9*(1), 21–27. https://doi.org/10.1037/1040-3590.9.1.21

Brown, S., Nesse, R. M., Vinokur, A. D., & Smith, D. M. (2003). Providing social support may be more beneficial than receiving it: Results from a prospective study of mortality. *Psychological Science*, *14*(4), 320–327. https://doi.org/10.1111/1467-9280.14461

Buckholdt, K. E., Parra, G. R., & Jobe-Shields, L. (2014). Intergenerational transmission of emotion dysregulation through parental invalidation of emotions: Implications for adolescent internalizing and externalizing behaviors. *Journal of Child and Family Studies*, *23*(2), 324–332. https://doi.org/10.1007/s10826-013-9768-4

Butler, E. A., Egloff, B., Wlhelm, F. H., Smith, N. C., Erickson, E. A., & Gross, J. J. (2003). The social consequences of expressive suppression. *Emotion*, *3*(1), 48–67. https://doi.org/10.1037/1528-3542.3.1.48

Butler, E. A., Lee, T. L., & Gross, J. J. (2007). Emotion regulation and culture: are the social consequences of emotion suppression culture-specific? *Emotion*, *7*(1), 30.

Buunk, B. P., Doosje, B. J., Jans, L. G., & Hopstaken, L. E. (1993). Perceived reciprocity, social support, and stress at work: The role of exchange and communal orientation. *Journal of Personality and Social Psychology*, *65*(4), 801.

Buunk, B. P., Gibbons, F. X., & Buunk, A. (2013). *Health, Coping, and Well-being: Perspectives From Social Comparison Theory*. Psychology Press.

Buunk, B. P., & Schaufeli, W. B. (1999). Reciprocity in interpersonal relationships: An evolutionary perspective on its importance for health and well-being. *European Review of Social Psychology*, *10*(1), 259–291. https://doi.org/10.1080/14792779943000080

Byrd-Craven, J., Geary, D. C., Rose, A. J., & Ponzi, D. (2008). Co-ruminating increases stress hormone levels in women. *Hormones and Behavior*, *53*(3), 489–492. https://doi.org/10.1016/j.yhbeh.2007.12.002

Byrd-Craven, J., Granger, D. A., & Auer, B. J. (2011). Stress reactivity to co-rumination in young women's friendships: Cortisol, alpha-amylase, and negative affect focus. *Journal of Social and Personal Relationships*, *28*(4), 469–487. https://doi.org/10.1177/0265407510382319

Cacioppo, J. T., Hughes, M., Waite, Li., Hawkley, L. C., & Thisted, R. (2006). Loneliness as a specific risk factor for depressive symptoms: Cross-sectional and longitudinal analysis. *Psychology and Aging*, *21*(1), 140–151.

Calmes, C. A., & Roberts, J. E. (2008). Rumination in interpersonal relationships: Does co-rumination explain gender differences in emotional distress and relationship

satisfaction among college students? *Cognitive Therapy and Research*, *32*(4), 577–590. https://doi.org/10.1007/s10608-008-9200-3

Christensen, K. A., Aldao, A., Sheridan, M. A., & McLaughlin, K. A. (2017). Habitual reappraisal in context: peer victimisation moderates its association with physiological reactivity to social stress. *Cognition and Emotion*, *31*(2), 384–394. https://doi.org/10.1080/02699931.2015.1103701

Cobb, C. (1976). Presidential Address-1976. Social support as a moderator of life stress. *Psychosomatic Medicine*, *38*(5), 300–314. https://doi.org/10.1097/00006842-197609000-00003

Cohen, J., Lakey, B., Tiell, K., & Neeley, L. C. (2005). Recipient-provider agreement on enacted support, perceived support, and provider personality. *Psychological Assessment*, *17*(3), 375–378. https://doi.org/10.1037/1040-3590.17.3.375

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*(2), 310–357.

Cole, P. M. (2014). Moving ahead in the study of the development of emotion regulation. *International Journal of Behavioral Development*, *38*(2), 203–207. https://doi.org/10.1177/0165025414522170

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*(2), 317–333. https://doi.org/10.1111/j.1467-8624.2004.00673.x

Cook, W., & Kenny, D. (2005). The Actor-Partner Interdependence Model: A model of bidirectional effects in developmental studies. *International Journal of Behavioral Development*, *29*(2), 101–109. https://doi.org/10.1080/01650250444000405

Coyne, J. (1976). Toward an Interactional Description of Depression. *Psychiatry-Interpersonal and Biological Processes*, *39*(1), 28–40.

Cvetkovski, S., Jorm, A. F., & Mackinnon, A. J. (2017). An analysis of the mental health trajectories of university students compared to their community peers using a national longitudinal survey. *Studies in Higher Education*, *0*(0), 1–16. https://doi.org/10.1080/03075079.2017.1356281

De Los Reyes, A., Youngstrom, E. A., Pabón, S. C., Youngstrom, J. K., Feeny, N. C., & Findling, R. L. (2011). Internal consistency and associated characteristics of informant discrepancies in clinic referred youths age 11 to 17 years. *Journal of Clinical Child and Adolescent Psychology : The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53*, *40*(1), 36–53. https://doi.org/10.1080/15374416.2011.533402

Diener, E., & Seligman, M. E. P. (2002). Very Happy People. *Psychological Science*, *13*(1), 81–84. https://doi.org/10.1111/1467-9280.00415

Dixon-Gordon, K., Bernecker, S., & Christensen, K. A. (2015). Recent innovations in the field of interpersonal emotion regulation. *Current Opinion in Psychology*, *3*, 36–42.

Eisenberg, N. (2000). Emotion, regulation, and moral development. *Annual Review of Psychology*, *51*(1), 665–697. https://doi.org/10.1146/annurev.psych.51.1.665

English, T., John, O. P., Srivastava, S., & Gross, J. J. (2012). Emotion regulation and peer-rated social functioning: A 4-year longitudinal study. *Journal of Research in Personality*, *46*(6), 780–784. https://doi.org/10.1016/j.jrp.2012.09.006

Fairburn, & Beglin, S. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders*, *16*(4), 363–370. https://doi.org/10.1002/1098-108X(199412)16:4<363::AID-EAT2260160405>3.0.CO;2-#

Gächter, S., Starmer, C., & Tufano, F. (2015). Measuring the closeness of relationships: A comprehensive evaluation of the "Inclusion of the Other in the Self" Scale. *PLoS ONE*, *10*(6). https://doi.org/10.1371/journal.pone.0129478

Gardner, M., & Steinberg, L. (2005). Peer influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: An experimental study. *Developmental Psychology*, *41*(4), 625–635.

Grecucci, A., Theuninck, A., Frederickson, J., & Job, R. (2015). Mechanisms of social emotion regulation: From neuroscience to psychotherapy. In *Emotion Regulation: Processes, Cognitive Effects, and Social Consequences* (1st ed.). Nova Publishers.

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, *2*(3), 271–299. https://doi.org/10.1037/1089-2680.2.3.271

Gross, J. J. (2013). Emotion regulation: Taking stock and moving forward. *Emotion*, *13*(3), 359–365. https://doi.org/10.1037/a0032135

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*(2), 348–362. https://doi.org/10.1037/0022-3514.85.2.348

Haber, M. G., Cohen, J. L., Lucas, T., & Baltes, B. B. (2007). The relationship between self-reported received and perceived social support: A meta-analytic review. *American Journal of Community Psychology*, *39*(1–2), 133–144. https://doi.org/10.1007/s10464-007-9100-9

Haeffel, G. J., & Hames, J. L. (2014). Cognitive vulnerability to depression can be contagious. *Clinical Psychological Science*, *2*(1), 75–85. https://doi.org/10.1177/2167702613485075

Haeffel, G. J., Voelz, Z. R., & Joiner, T. (2007). Vulnerability to depressive symptoms: Clarifying the role of excessive reassurance seeking and perceived social support in an interpersonal model of depression. *Cognition and Emotion*, *21*(3), 681–688. https://doi.org/10.1080/02699930600684922

Han, B., Compton, W. M., Eisenberg, D., Milazzo-Sayre, L., McKeon, R., & Hughes, A. (2016). Prevalence and mental health treatment of suicidal ideation and behavior among college students aged 18-25 years and their non-college-attending peers in the United States. *The Journal of Clinical Psychiatry*, *77*(6), 815–824. https://doi.org/10.4088/JCP.15m09929

Haslam, M., Mountford, V., Meyer, C., & Waller, G. (2008). Invalidating childhood environments in anorexia and bulimia nervosa. *Eating Behaviors*, *9*(3), 313–318. https://doi.org/10.1016/j.eatbeh.2007.10.005

Hawkley, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine*, *40*(2), 218–227. https://doi.org/10.1007/s12160-010-9210-8

Hawkley, L. C., Thisted, R. A., Masi, C. M., & Cacioppo, J. T. (2010). Loneliness predicts increased blood pressure: 5-Year cross-lagged analyses in middle-aged and older adults. *Psychology and Aging*, *25*(1), 132–141.

Hill, L., Peck, S. K., Wierenga, C. E., & Kaye, W. H. (2016). Applying neurobiology to the treatment of adults with anorexia nervosa. *Journal of Eating Disorders*, *4*, 31. https://doi.org/10.1186/s40337-016-0119-x

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, *10*(2), 227–237. https://doi.org/10.1177/1745691614568352

Horn, A. B., & Maercker, A. (2016). Intra- and interpersonal emotion regulation and adjustment symptoms in couples: The role of co-brooding and co-reappraisal. *BMC Psychology*, *4*(1), 51. https://doi.org/10.1186/s40359-016-0159-7

Hruska, L. C., Zelic, K. J., Dickson, K. S., & Ciesla, J. A. (2017). Adolescents' co-rumination and stress predict affective changes in a daily-diary paradigm.

International Journal of Psychology, *52*(5), 372–380. https://doi.org/10.1002/ijop.12227

Impett, E. A., Kogan, A., English, T., John, O., Oveis, C., Gordon, A. M., & Keltner, D. (2012). Suppression sours sacrifice: Emotional and relational costs of suppressing emotions in romantic relationships. *Personality and Social Psychology Bulletin*, *38*(6), 707–720. https://doi.org/10.1177/0146167212437249

Impett, E. A., Le, B. M., Kogan, A., Oveis, C., & Keltner, D. (2014). When you think your partner is holding back: The costs of perceived partner suppression during relationship sacrifice. *Social Psychological and Personality Science*, *5*(5), 542–549. https://doi.org/10.1177/1948550613514455

Joiner, T. E., & Metalsky, G. I. (2001). Excessive reassurance seeking: Delineating a risk factor involved in the development of depressive symptoms. *Psychological Science*, *12*(5), 371–378. https://doi.org/10.1111/1467-9280.00369

Joiner, T. E., Metalsky, G. I., Katz, J., & Beach, S. R. H. (1999). Depression and excessive reassurance-seeking. *Psychological Inquiry*, *10*(3), 269–278. https://doi.org/10.1207/S15327965PLI1004_1

Jou, Y. H., & Fukada, H. (2002). Stress, health, and reciprocity and sufficiency of social support: The case of university students in Japan. *The Journal of Social Psychology*, *142*(3), 353–370. https://doi.org/10.1080/00224540209603904

Keel, P. K., Forney, K. J., Brown, T. A., & Heatherton, T. F. (2013). Influence of college peers on disordered eating in women and men at 10-Year follow-up. *Journal of Abnormal Psychology*, *122*(1). https://doi.org/10.1037/a0030081

Kenny, D. A. (2015). *An interactive tool for the estimation and testing the Actor-Partner Interdependence Model using multilevel modeling*.

Kenny, D. A., & Ledermann, T. (2010). Detecting, measuring, and testing dyadic patterns in the Actor–Partner Interdependence Model. *Journal of Family Psychology*, *24*(3), 359–366.

Kobori, O., & Salkovskis, P. M. (2013). Patterns of reassurance seeking and reassurance-related behaviours in OCD and anxiety Disorders. *Behavioural and Cognitive Psychotherapy*, *41*(1), 1–23. https://doi.org/10.1017/S1352465812000665

Kovess-Masfety, V., Leray, E., Denis, L., Husky, M., Pitrou, I., & Bodeau-Livinec, F. (2016). Mental health of college students and their non-college-attending peers: results from a large French cross-sectional survey. *BMC Psychology*, *4*, 20. https://doi.org/10.1186/s40359-016-0124-5

Krause, E., Mendelson, T., & Lynch, T. (2003). Childhood emotional invalidation and adult psychological distress: the mediating role of emotional inhibition. *Childhood Abuse and Neglect*, *27*(2), 199–213.

Kring, A. M., & Sloan, D. M. (2009). *Emotion Regulation and Psychopathology: A Transdiagnostic Approach to Etiology and Treatment*. Guilford Press.

Lakey, B., & Orehek, E. (2011). Relational regulation theory: A new approach to explain the link between perceived social support and mental health. *Psychological Review*, *118*(3), 482–495. https://doi.org/10.1037/a0023477

Larzelere, R. E., Kuhn, B. R., & Johnson, B. (2004). The intervention selection bias: An underrecognized confound in intervention research. *Psychological Bulletin*, *130*(2), 289–303. https://doi.org/10.1037/0033-2909.130.2.289

Le, B. M., & Impett, E. A. (2013). When holding back helps: Suppressing negative emotions during sacrifice feels authentic and is beneficial for highly interdependent people. *Psychological Science*, *24*(9), 1809–1815. https://doi.org/10.1177/0956797613475365

Levy-Gigi, E., & Shamay-Tsoory, S. G. (2017). Help me if you can: Evaluating the effectiveness of interpersonal compared to intrapersonal emotion regulation in reducing distress. *Journal of Behavior Therapy and Experimental Psychiatry*, *55*, 33–40. https://doi.org/10.1016/j.jbtep.2016.11.008

Li, Y., & Guo, G. (2016). Peer influence on aggressive behavior, smoking, and sexual behavior: A study of randomly-assigned college roommates. *Journal of Health and Social Behavior*, *57*(3), 297–318. https://doi.org/10.1177/0022146516661594

Liang, J., Krause, N. M., & Bennett, J. M. (2001). Social exchange and well-being: is giving better than receiving? *Psychology and Aging*, *16*(3), 511–523.

Linehan, M. (1993). *Cognitive-behavioral Treatment of Borderline Personality Disorder*. Guilford Press.

Lock, J., Grange, D. L., Agras, W. S., Moye, A., Bryson, S. W., & Jo, B. (2010). Randomized clinical trial comparing family-based treatment with adolescent-focused individual therapy for adolescents with anorexia nervosa. *Archives of*

General Psychiatry, *67*(10), 1025–1032. https://doi.org/10.1001/archgenpsychiatry.2010.128

Lock, J., & le Grange, D. (2005). Family-based treatment of eating disorders. *International Journal of Eating Disorders*, *37*(S1), S64–S67. https://doi.org/10.1002/eat.20122

Mason, T. B., Lavender, J. M., Wonderlich, S. A., Crosby, R. D., Joiner, T. E., Mitchell, J. E., … Peterson, C. B. (2016). The role of interpersonal personality traits and reassurance seeking in eating disorder symptoms and depressive symptoms among women with bulimia nervosa. *Comprehensive Psychiatry*, *68*, 165–171. https://doi.org/10.1016/j.comppsych.2016.04.013

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour Research and Therapy*, *36*(4), 455–470. https://doi.org/10.1016/S0005-7967(97)10031-6

Mendelson, M. J., & Aboud, F. E. (1999). Measuring friendship quality in late adolescents and young adults: McGill Friendship Questionnaires. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement*, *31*(2), 130–132. https://doi.org/10.1037/h0087080

Mortier, P., Auerbach, R. P., Alonso, J., Axinn, W. G., Cuijpers, P., Ebert, D. D., … Bruffaerts, R. (2018). Suicidal thoughts and behaviors among college students and same-aged peers: results from the World Health Organization World Mental Health Surveys. *Social Psychiatry and Psychiatric Epidemiology*, *53*(3), 279–288. https://doi.org/10.1007/s00127-018-1481-6

Mushtaq, R., Shoib, S., Shah, T., & Mushtaq, S. (2014). Relationship between loneliness, psychiatric disorders and physical health ? A review on the psychological aspects of loneliness. *Journal of Clinical and Diagnostic Research : JCDR*, *8*(9), WE01. https://doi.org/10.7860/JCDR/2014/10077.4828

Niedenthal, P. M., Krauth-Gruber, S., & Ric, F. (2006). *Psychology of emotion: Interpersonal, experiential, and cognitive approaches* (Vol. xi). New York, NY, US: Psychology Press.

Nils, F., & Rimé, B. (2012). Beyond the myth of venting: Social sharing modes determine the benefits of emotional disclosure. *European Journal of Social Psychology*, *42*(6), 672–681. https://doi.org/10.1002/ejsp.1880

Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology*, *100*(4), 569–582. https://doi.org/10.1037/0021-843X.100.4.569

Overall, N. C., Fletcher, G. J. O., & Simpson, J. A. (2010). Helping each other grow: Romantic partner support, self-improvement, and relationship quality. *Personality and Social Psychology Bulletin*, *36*(11), 1496–1513. https://doi.org/10.1177/0146167210383045

Panzarella, C., Alloy, L. B., & Whitehouse, W. G. (2006). Expanded hopelessness theory of depression: On the mechanisms by which social support protects against depression. *Cognitive Therapy and Research*, *30*(3), 307–333. https://doi.org/10.1007/s10608-006-9048-3

Parkinson, B., Simons, G., & Niven, K. (2016). Sharing concerns: Interpersonal worry regulation in romantic couples. *Emotion (Washington, D.C.)*, *16*(4), 449. https://doi.org/10.1037/a0040112

Parrish, C., & Radomsky, A. (2011). An experimental investigation of factors involved in excessive reassurance seeking: The effects of perceived threat, responsibility and ambiguity on compulsive urges and anxiety. *Journal of Experimental Psychopathology*, *2*(1), 44–62. https://doi.org/10.5127/jep.011110

Piferi, R. L., & Lawler, K. A. (2006). Social support and ambulatory blood pressure: An examination of both receiving and giving. *International Journal of Psychophysiology*, *62*(2), 328–336. https://doi.org/10.1016/j.ijpsycho.2006.06.002

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Rector, N. A., Kamkar, K., Cassin, S. E., Ayearst, L. E., & Laposa, J. M. (2011). Assessing excessive reassurance seeking in the anxiety disorders. *Journal of Anxiety Disorders*, *25*(7), 911–917. https://doi.org/10.1016/j.janxdis.2011.05.003

Remmerswaal, K. C. P., Batelaan, N. M., Smit, J. H., van Oppen, P., & van Balkom, A. J. L. M. (2016). Feasibility and outcome of a brief cognitive behaviour therapy family intervention for patients with Obsessive-Compulsive Disorder: A pilot study. *Psychotherapy and Psychosomatics*, *85*(3), 185–186. https://doi.org/10.1159/000443511

Rimé, B. (2009). Interpersonal emotion regulation. In J. Gross (Ed.), *Handbook of Emotion Regulation* (pp. 466–485). Guilford Press.

Rose, A. J. (2002). Co–rumination in the friendships of girls and boys. *Child Development*, *73*(6), 1830–1843. https://doi.org/10.1111/1467-8624.00509

Rose, A. J., Carlson, W., & Waller, E. M. (2007). Prospective associations of co-rumination with friendship and emotional adjustment: Considering the socioemotional trade-offs of co-rumination. *Developmental Psychology*, *43*(4), 1019–1031. https://doi.org/10.1037/0012-1649.43.4.1019

Rose, A. J., Glick, G. C., Smith, R. L., Schwartz-Mette, R. A., & Borowski, S. K. (2017). Co-Rumination exacerbates stress generation among adolescents with depressive symptoms. *Journal of Abnormal Child Psychology*, *45*(5), 985–995. https://doi.org/10.1007/s10802-016-0205-1

Rose, A. J., Schwartz-Mette, R. A., Glick, G. C., Smith, R. L., & Luebbe, A. M. (2014). An observational study of co-rumination in adolescent friendships. *Developmental Psychology*, *50*(9), 2199–2209. https://doi.org/10.1037/a0037465

Salkovskis, P. M. (1991). The Importance of behaviour in the maintenance of anxiety and panic: A cognitive account. *Behavioural and Cognitive Psychotherapy*, *19*(1), 6–19. https://doi.org/10.1017/S0141347300011472

Sauer, S. E., & Baer, R. A. (2010). Validation of measures of biosocial precursors to Borderline Personality Disorder: Childhood emotional vulnerability and environmental invalidation. *Assessment*, *17*(4), 454–466. https://doi.org/10.1177/1073191110373226

Shiffman, S., Stone, A. A., & Hufford, M. R. (2008). Ecological Momentary Assessment. *Annual Review of Clinical Psychology*, *4*(1), 1–32. https://doi.org/10.1146/annurev.clinpsy.3.022806.091415

Siedlecki, K. L., Salthouse, T. A., Oishi, S., & Jeswani, S. (2014). The relationship between social support and subjective well-being across age. *Social Indicators Research*, *117*(2), 561–576. https://doi.org/10.1007/s11205-013-0361-4

Smith, R. L., & Rose, A. J. (2011). The "cost of caring" in youths' friendships: Considering associations among social perspective taking, co-rumination, and empathetic distress. *Developmental Psychology*, *47*(6), 1792–1803. https://doi.org/10.1037/a0025309

Soto, J. A., Perez, C. R., Kim, Y.-H., Lee, E. A., & Minnick, M. R. (2011). Is expressive suppression always associated with poorer psychological functioning? A cross-cultural comparison between European Americans and Hong Kong Chinese. *Emotion*, *11*(6), 1450.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–1097.

Stanley, S. M., Markman, H. J., & Whitton, S. W. (2002). Communication, conflict, and commitment: Insights on the foundations of relationship success from a national survey. *Family Process*, *41*(4), 659–675. https://doi.org/10.1111/j.1545-5300.2002.00659.x

Starr, L., & Davila, J. (2009). Clarifying co-rumination: Associations with internalizing symptoms and romantic involvement among adolescent girls. *Journal of Adolescence*, *32*(1), 19–37. https://doi.org/10.1016/j.adolescence.2007.12.005

Sturrock, B., & Mellor, D. (2014). Perceived emotional invalidation and borderline personality disorder features: A test of theory. *Personality and Mental Health*, *8*(2), 128–142. https://doi.org/10.1002/pmh.1249

Su, J. C., Lee, R. M., & Oishi, S. (2013). The role of culture and self-construal in the link between expressive suppression and depressive symptoms. *Journal of Cross-Cultural Psychology*, *44*(2), 316–331. https://doi.org/10.1177/0022022112443413

Takizawa, T., Kondo, T., Sakihara, S., Ariizumi, M., Watanabe, N., & Oyama, H. (2006). Stress buffering effects of social support on depressive symptoms in middle age: Reciprocity and community mental health. *Psychiatry and Clinical Neurosciences*, *60*(6), 652–661. https://doi.org/10.1111/j.1440-1819.2006.01579.x

Thomas, P. A. (2010). Is it better to give or to receive? Social support and the well-being of older adults. *The Journals of Gerontology: Series B*, *65B*(3), 351–357. https://doi.org/10.1093/geronb/gbp113

Tompkins, T., Hockett, A., Abraibesh, N., & Witt, J. (2011). A closer look at co-rumination: Gender, coping, peer functioning and internalizing/externalizing problems. *Journal of Adolescence*, *34*(5), 801–811. https://doi.org/10.1016/j.adolescence.2011.02.005

Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research*, *27*(3), 247–259. https://doi.org/10.1023/A:1023910315561

Trivedi, M. H., & Greer, T. L. (2014). Cognitive dysfunction in unipolar depression: Implications for treatment. *Journal of Affective Disorders*, *152*, 19–27. https://doi.org/10.1016/j.jad.2013.09.012

Troy, A. S., Shallcross, A. J., & Mauss, I. B. (2013). A person-by-situation approach to emotion regulation cognitive reappraisal can either help or hurt, depending on the context. *Psychological Science*, *24*(12), 2505–2514. https://doi.org/10.1177/0956797613496434

Uchino, B. N. (2006). Social support and health: A review of physiological processes potentially underlying links to disease outcomes. *Journal of Behavioral Medicine*, *29*(4), 377–387. https://doi.org/10.1007/s10865-006-9056-5

Webb, T. L., Miles, E., & Sheeran, P. (2012). Dealing with feeling: A meta-analysis of the effectiveness of strategies derived from the process model of emotion regulation. *Psychological Bulletin*, *138*(4), 775–808. https://doi.org/10.1037/a0027600

Wells, A., Clark, D. M., Salkovskis, P., Ludgate, J., Hackmann, A., & Gelder, M. (1995). Social phobia: The role of in-situation safety behaviors in maintaining anxiety and negative beliefs. *Behavior Therapy*, *26*(1), 153–161. https://doi.org/10.1016/S0005-7894(05)80088-7

Zaki, J., & Williams, W. C. (2013). Interpersonal emotion regulation. *Emotion*, *13*(5), 803–810.

Appendix A: Tables

Table 1: Descriptive statistics

	Mean (*SD*)	**Correlation with partner (*r*)**
Age	19 years *(1.32)*	.78**
BMI	23.32 kg/m^2 *(3.81)*	.08
Sexual orientation (% heterosexual)	94.63%	
Race (% White)	72.73%	
Ethnicity (% non-Hispanic)	93.80%	
Marital status (% single, never married)	98.35%	
Illicit substance use	86.36%	
CESD total	13.74 *(9.99)*	.16
EDEQ total	1.64 *(1.23)*	.09
GAD 7 total	5.55 *(4.81)*	-.01
SIAS total	23.69 *(13.67)*	.13
Composite psychopathology score	-.06 *(3.88)*	.11
RCI Relationship influence	88.86 *(20.34*)	.24**
IOSQ Relationship closeness	3.11 *(1.76)*	.15
RS brooding rumination (self)	11.70 *(3.56)*	.11
ERQ expressive suppression (self)	14.06 *(5.07)*	.10
ERQ reappraisal (self)	29.29 *(6.32)*	.19*
RS brooding rumination (from friend)	8.97 *(3.13)*	.06
ERQ expressive suppression (from friend)	8.96 *(4.29)*	.12
ERQ reappraisal (from friend)	32.66 *(5.90)*	.13
RS brooding rumination (to friend)	8.56 *(2.89)*	-.01
ERQ expressive suppression (to friend)	7.94 *(4.09)*	.09
ERQ reappraisal (to friend)	32.04 *(4.99)*	.31**
RS brooding rumination reciprocity	<.01 *(0.71)*	-.13
ERQ expressive suppression reciprocity	.01 *(.69)*	-.13
ERQ reappraisal reciprocity	<.01 (.71)	-.04

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 2: Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. CESD total															
2. EDEQ total	.26**														
3. GAD 7 total	.70**	.22**													
4. SIAS total	.46**	.25**	.42**												
5. Composite psychopathology	.85**	.58**	.82**	.72**											
6. Relationship influence	0.07	0.03	0.00	0.09	0.07										
7. Relationship closeness	0.01	0.04	0.00	-0.12	-0.01	.23**									
Intrapersonal ER															
8. Brooding rumination	.59**	.28**	.54**	.50**	.64**	.20**	0.06								
9. Expressive suppression	.20**	.23**	.14*	.38**	.33**	0.07	-0.04	.29**							
10. Reappraisal	-.31**	-0.11	-.26**	-.24**	-.32**	0.03	-0.07	-.25**	0.09						
Interpersonal ER: Received															
11. Brooding rumination	.30**	.27**	.33**	.16*	.36**	.28**	0.05	.49**	.18**	0.02					
12. Expressive suppression	.14*	.24**	.17*	.14*	.23**	-0.01	0.00	.15*	.35**	-0.11	.15*				
13. Reappraisal	-.15*	-0.03	-0.06	-.15*	-.14*	.26**	.18**	-.17**	-0.02	.35**	0.09	-.30**			
Interpersonal ER: Provided															
14. Brooding rumination	.19**	.18**	.25**	.15*	.27**	.22**	0.08	.36**	.14*	0.05	.75**	0.12	0.08		
15. Expressive suppression	0.06	.13*	0.05	0.11	.13*	0.10	0.00	.13*	.32**	-0.08	0.08	.75**	-.24**	0.01	
16. Reappraisal	-.18**	0.00	-0.04	-.20**	-.14*	.19**	.13*	-.15*	-0.07	.31**	0.12	-.27**	.76**	.15*	-.29**

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 3: Providing brooding rumination predicting psychopathology

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of brooding rumination provided	Actor	.29	.29	<.01
Partner B report of brooding rumination provided	Partner	.14	.14	.02

Table 4: Receiving brooding rumination predicting psychopathology

	Role	Unstandardized effect (b)	Standardized effect (*β*)	*p*-value
Partner A report of brooding rumination received	Actor	.36	.39	<.01
Partner B report of brooding rumination provided	Partner	.08	.08	.17

Table 5: Providing suppression predicting psychopathology

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of suppression provided	Actor	.10	.14	.03
Partner B report of suppression provided	Partner	.01	.02	.81

Table 6: Receiving suppression predicting psychopathology

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of suppression received	Actor	.16	.23	<.01
Partner B report of suppression received	Partner	-.02	-.03	.62

Table 7: Providing reappraisal predicting psychopathology

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of reappraisal provided	Actor	-.04	-.07	.29
Partner B report of reappraisal provided	Partner	-.10	-.17	.01

Table 8: Receiving suppression predicting psychopathology

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of reappraisal received	Actor	-.04	-.08	.20
Partner B report of reappraisal received	Partner	-.10	-.21	<.01

Table 9: Providing brooding rumination predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of brooding rumination provided	Actor	.05	.08	.22
Partner B report of brooding rumination provided	Partner	.02	.04	.10

Tab**le 10: Providing brooding rumination predicting relationship influence**

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of brooding rumination provided	Actor	1.51	.21	<.01
Partner B report of brooding rumination provided	Partner	-.07	-.01	.89

Table 11: Receiving brooding rumination predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of brooding rumination received	Actor	.03	.05	.41
Partner B report of brooding rumination received	Partner	.02	.03	.61

Table 12: Receiving brooding rumination predicting relationship influence

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of brooding rumination received	Actor	2.14	.34	< .01
Partner B report of brooding rumination received	Partner	-.42	-.07	.28

Table 13: Providing suppression predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of suppression provided	Actor	< .01	.08	.22
Partner B report of suppression provided	Partner	< -.01	.04	.10

Table 14: Providing suppression predicting relationship influence

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of suppression provided	Actor	.43	.09	.18
Partner B report of suppression provided	Partner	-.16	-.03	.62

Table 15: Receiving suppression predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of suppression received	Actor	< .01	<. 01	.96
Partner B report of suppression received	Partner	< .01	< .01	.91

Table 16: Receiving suppression predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of suppression received	Actor	-.06	-.01	.84
Partner B report of suppression received	Partner	-.24	-.05	.43

Table 17: Providing reappraisal predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of reappraisal provided	Actor	.03	.09	.17
Partner B report of reappraisal provided	Partner	.04	.10	.12

Table 18: Providing reappraisal predicting relationship influence

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of reappraisal provided	Actor	.58	.14	.03
Partner B report of reappraisal provided	Partner	.59	.14	.03

Table 19: Receiving reappraisal predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of reappraisal received	Actor	.05	.16	.01
Partner B report of reappraisal received	Partner	.04	.14	.03

Table 20: Receiving reappraisal predicting relationship influence

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A report of reappraisal received	Actor	.85	.25	< .01
Partner B report of reappraisal received	Partner	.46	.13	.03

Table 1: Rumination reciprocity predicting psychopathology

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A brooding rumination reciprocity	Actor	-.52	-.13	.05
Partner B brooding rumination reciprocity	Partner	.15	.04	.58

Table 22: Suppression reciprocity predicting psychopathology

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A suppression reciprocity	Actor	-.60	-.15	.03
Partner B suppression reciprocity	Partner	.08	.02	.77

Table 23: Reappraisal reciprocity predicting psychopathology

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A reappraisal reciprocity	Actor	-.08	-.02	.79
Partner B reappraisal reciprocity	Partner	.13	.03	.64

Table 24: Rumination reciprocity predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A brooding rumination reciprocity	Actor	.09	.04	.58
Partner B brooding rumination reciprocity	Partner	.02	< .01	.90

Table 25: Rumination reciprocity predicting relationship influence

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A brooding rumination reciprocity	Actor	-2.56	-.09	.17
Partner B brooding rumination reciprocity	Partner	.88	.03	.64

Table 26: Suppression reciprocity predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A suppression reciprocity	Actor	-.03	-.01	.86
Partner B suppression reciprocity	Partner	-.02	< -.01	.89

Table 27: Suppression reciprocity predicting relationship influence

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A suppression reciprocity	Actor	4.36	.15	.02
Partner B suppression reciprocity	Partner	1.29	.05	.48

Table 28: Reappraisal reciprocity predicting relationship closeness

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A reappraisal reciprocity	Actor	-.27	-.10	.12
Partner B reappraisal reciprocity	Partner	-.13	-.05	.46

Table 29: Reappraisal reciprocity predicting relationship influence

	Role	Unstandardized effect (*b*)	Standardized effect (*β*)	*p*-value
Partner A reappraisal reciprocity	Actor	-3.58	-.12	.08
Partner B reappraisal reciprocity	Partner	.68	.02	.66