

PERCEPTION IN YOUNG ADULT ROMANTIC RELATIONSHIPS: A LATENT PROFILE
ANALYSIS OF TRAIT MINDFULNESS IN RELATION TO ATTACHMENT AND
ATTRIBUTIONS

by

JONATHAN GENE KIMMES

B.S., Winona State University, 2010
M.S., Purdue University Calumet, 2013

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services
College of Human Ecology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

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Abstract

Perceptions regarding the causes and intentions behind partner transgressions are often just as important as the transgressions themselves. Although mindfulness-based interventions have been useful in clinical work with couples, the potential role that mindfulness plays in attributions is unclear. Using a sample of 542 young adults in romantic relationships, I explored the direct and indirect associations among attachment, trait mindfulness, and attributions. Specifically, I conducted a latent profile analysis, a person-centered approach, through which I identified four latent classes of trait mindfulness, including a High Mindfulness class, a Nonjudgmentally Aware class, a Low Mindfulness class, and a Judgmentally Observing class. I then ran a path analysis and found a number of significant direct effects. For example, relative to membership in the Low Mindfulness, membership in the High Mindfulness class and the Nonjudgmentally Aware class were associated with more benign attributions. I also found two significant indirect effects. First, heightened attachment anxiety was associated with an decreased probability of being Nonjudgmentally Aware class relative to the Low Mindfulness class, which was inversely linked with benign attributions. Second, avoidant attachment was linked with a decreased probability of membership in the High Mindfulness class relative to the Low Mindfulness class, which was linked to a decrease in benign attributions. The clinical implications and areas for future research based on the findings of this study are discussed.

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Chapter 1 - Introduction

From deciphering a slightly flippant response to judging blameworthiness after learning of a long-standing affair, romantic relationships require partners to continually assess the causes of and intentions behind each other's behavior; that is, they require partners to make attributions regarding each other's behavior. Attributions are consequential with respect to partners' relationship satisfaction (Sümer, & Cozzarelli, 2004), the degree of trust they have for each other (Miller & Rempel, 2004), and their propensity to forgive each other (Hall & Fincham, 2006). In fact, Fincham (2001) noted that the connection between attributions and marital quality may be "the most robust, replicable phenomenon in the study of marriage" (p.7). However, the task of aligning perceptions with reality in romantic relationships is exceedingly difficult, and negative biases tend to be most pronounced when the emotional stakes are high, such as during and following partner transgressions (Finkel, Scissors, & Burnette, 2007; Mikulincer, 1998).

The success of a romantic relationship, or even its continued existence, may hinge on the perceptions partners have regarding the causes and intentions behind each other's behaviors (Fincham, Paleari, & Regalia, 2003; Hall & Fincham, 2006). A transgression perceived to be intentional or reflecting an undesirable facet of the transgressor's character may be very difficult to forgive. Conversely, the same transgression may have a relatively negligible impact on the relationship if it is perceived to be accidental or due largely to unfortunate external circumstances (Struthers, Eaton, Mendoza, Santelli, & Shirvani, 2010). Of course, directly asking the partner about the behavior does not obviate the need for attributions because one must subsequently make attributions about the partner's response. In order for partners to most effectively respond to transgressions in romantic relationships, there must be considerable correspondence between perception and reality in terms of partner attributions.

Interestingly, research suggests that mindfulness, a term that refers to a quality of mind characterized by open and nonevaluative awareness of the present moment (Bishop et al., 2004; Brown & Ryan, 2003), is associated with increased emotional regulation abilities (Chambers, Gullone, & Allen, 2009) and enhanced cognitive abilities related to attention and perception (Moore & Malinowski, 2009), both of which govern the attributional process. From a contemplative point of view, mindfulness is the quality of mind needed to experience the world as it is, without distortion from beliefs, expectations, attitudes, or bits of language in the mind (Gunaratana, 1991). This conceptualization of mindfulness suggests that the perceptions of more mindful individuals are likely to be more objective than individuals who are less mindful, on average. It is possible, therefore, that cultivating one's tendency to be mindful may be beneficial in reducing negative bias in attributions (Davis & Thompson, 2015). However, to date, the way in which mindfulness relates to attributional processes has not been unexamined.

Mindfulness is a multifaceted construct (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), so examining the way in which the various facets of mindfulness operate within individuals may be useful in working towards a more complete understanding of the origins of trait mindfulness and the role that mindfulness plays in romantic relationships. Guided by attachment theory, one possibility is that mindfulness, including all of its elements, emerges from a cognitive infrastructure formed in early childhood. In other words, working models of attachment, which are the implicit beliefs, attitudes, and expectations that form the lens through which individuals view one's self and others, may dictate one's level of dispositional mindfulness. The nature of the relationship between mindfulness and attachment was detailed by Parker, Nelson, Epel, and Siegel (2015) as follows: "Our proposal is that early experience may also shape mindfulness later in life. We speculate that secure attachment and a sense of safety

and interpersonal trust may influence the propensity for the development of presence and mindful awareness” (p. 232). Indeed, evidence for the connection between secure attachment and mindfulness is strong (e.g., Goodall, Trejnowska, & Darling, 2012; Jones, Welton, Oliver, & Thoburn, 2011; Pepping, Davis, & O’Donovan, 2013; Walsh, Balint, Smolira, Fredericksen, & Madsen, 2009). It is possible, therefore, that working models of attachment relate to trait mindfulness and ultimately alter processing of attachment-related information from early perceptual stages to attributions. The link between secure attachment and mindfulness may encourage researchers and clinicians to explore the use of attachment-based interventions to enhance mindfulness in couples. However, without accounting for the way in which the facets of mindfulness relate to each other within individuals, the theoretical and clinical utility of this evidence may be limited.

The purpose of this study was to identify classes of trait mindfulness, or subgroups of individuals who share similar constellations of the facets of trait mindfulness. Furthermore, I examined whether the dimensions of attachment were associated with the probabilities of membership in the classes of trait mindfulness, and then explored the associations between class membership in mindfulness groups and partner attributions. Exploring the ways in which mindfulness operates within individuals may facilitate a better understanding of the determinants of trait mindfulness and the role that it plays in the context of romantic relationships. These results ultimately may provide new insights into how clinicians can most profitably use mindfulness- and attachment-based interventions to address negatively biased attributional patterns in couples therapy.

Chapter 2 - Literature Review

Attachment Theory

According to attachment theory, working models of attachment are the affective-cognitive schemas that relate to core beliefs, attitudes, and expectations about attachment figures and one's self (Bowlby, 1980). The quality of the child-caregiver interactions shapes the character of working models of attachment. Children who have available, responsive, and supportive caregivers are likely to be more securely attached. This form of attachment is characterized by working models of attachment that reflect largely positive views of the self and attachment figures (Bowlby, 1973; Ein-Dor, Mikulincer, & Shaver, 2011). Securely attached individuals tend to be more trusting toward attachment figures and to openly communicate with them during conflict (Mikulincer & Shaver, 2007). They are also more likely to have a sense of self-efficacy in managing stress and dealing with attachment-threats (Mikulincer & Shaver, 2005).

Children who are raised by caregivers who are less attuned to the needs of the child or who do not adequately respond to bids of support by the child are more likely to become insecurely attached. Working models of attachment in insecurely attached individuals reflect pessimistic views of self and others (Mikulincer & Shaver, 2005; Mikulincer & Shaver, 2012). Insecurely attached individuals tend to doubt their ability to deal with attachment-related threats and have implicit beliefs that attachment figures will abandon or betray them. Furthermore, whereas individuals who are securely attached tend to make favorable judgments about attachment figures and are more likely to forgive transgression, insecurely attached individuals are more likely to hold grudges (Lawler-Row, Younger, Piferi, & Jones, 2006).

Working models of attachment typically operate automatically and without conscious awareness, but they nevertheless create and maintain patterns of perceiving and responding to the behaviors of attachment figures (Bowlby, 1980; Mikulincer & Shaver, 2005). Although working models of attachment are formed early in life, they remain relatively stable across the lifespan. Furthermore, in adulthood, the working models of attachment formed in the context of child-caregiver interactions are primarily applied to romantic partners (Mikulincer & Shaver, 2012).

The two dimensions of attachment insecurity—attachment anxiety and attachment avoidance—reflect two differing strategies adopted to protect the self in social relationships (Mikulincer & Shaver, 2005). When attachment anxiety is pronounced, negative views of the self and other are met with efforts to elicit the attachment figure’s involvement and reassurance. For example, individuals with elevated attachment anxiety may demonstrate overdependence on the attachment figure, engage in intensified monitoring of signs of rejection, and ruminate about real or potential experiences that relate to attachment threats. Even if these strategies work initially, the potential for rejection and abandonment is often of concern, so individuals with high levels of attachment anxiety persistently apply these strategies in an attempt to stay connected to and accepted by the attachment figure.

Attachment avoidance corresponds to the deactivation, as opposed to the hyperactivation of the attachment system. Deeply convinced that attachment figures are untrustworthy, individuals who have a high level of attachment avoidance suppress their attachment-related needs and avoid self-disclosure (Mikulincer & Nachshon, 1991). In addition, these individuals tend to orient away from attachment figures in order to avoid the emotional turmoil that goes along with abandonment, rejection, or betrayal (Mikulincer & Shaver, 2005). This effort to circumvent emotional pain may be unsuccessful, even counterproductive in certain

circumstances, such as when the social-emotional stimuli being processed are particularly disturbing (Vrtička & Vuilleumier, 2012). The strategies employed by individuals who have heightened attachment avoidance, therefore, may not forestall the anger and anguish that follows rejection, abandonment, or any other form of attachment injury. Unfortunately, until these strategies are relinquished, the only certainty that comes with the persistent repudiation of attachment-related needs is that the deepest and most enriching experiences of intimacy with one's partner are inaccessible.

Mindfulness

The goal of anxious and avoidant attachment strategies is to protect the self, but, within the Buddhist tradition, the goal of mindfulness meditation is to see that the self is an illusion, or to experience the intrinsic selflessness of consciousness (Harris, 2014). This is an experience thought to be a direct insight into unadulterated reality (Gunaratana, 1991). However, mindfulness, both the practice and the quality of mind, does not require such lofty goals. Mindfulness, as Kabat-Zinn elegantly put it, means “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (1994, p. 4). A translation of the Pāli word *sati*, mindfulness means “clear awareness” in the Buddhist literature. The practice often referred to as “mindfulness meditation” in Western cultures is actually a technique called *Vipassanā*, which is the Pāli word for “insight”. *Vipassanā* can be traced back to the oldest tradition of Buddhism, the Theravāda.

Mindfulness refers to a clear awareness of the contents of consciousness to the point that the usual patterns of distortion involved with attention, sensation, and perception are cut through (Kabat-Zinn, 2005). Although the concept of mindfulness has its roots in Buddhism, Kabat-Zinn (2003) suggested that mindfulness is a universal phenomenon. He argued, “We are all mindful to

one degree or another, moment by moment” (pp. 145-146). Thus, although mindfulness can be conceptualized as a state, it can also be considered a trait within individuals that remains relatively stable across time (Chambers, Gullone, & Allen, 2009).

Mindfulness and Attachment

Every pleasant experience, whether embedded in a relational process or not, eventually comes to an end. According to Theravāda Buddhist teachings, the inability to fully understand and accept this trite, yet undeniable fact, results in two primary response patterns referred to as grasping and aversion. Grasping and aversion are qualities of mind that are believed to preclude mindful awareness, reliably lead to distorted views of the world, and ultimately manufacture and maintain inner disharmony (Anālayo, 2011). The dimensions of attachment anxiety and avoidance are remarkably similar to the concepts of grasping and aversion within Theravādan Buddhism. Whereas attachment anxiety strategies are implemented in order to grasp at and cling to the attachment figure, the attachment avoidance strategies are developed to avert from the real and potential painful experiences associated with romantic relationships. Thus, attachment theory and mindfulness are closely linked, as attachment anxiety and attachment avoidance mirror the ideas of grasping and aversion emphasized in Buddhist literature. Although mindfulness requires a relinquishment of the goal-oriented mode of being inherent to grasping and aversion, Harris argued: “There is nothing passive about mindfulness. One might even say that it expresses a specific kind of passion—a passion for discerning what is subjectively real in every moment” (p. 36, 2014). Similarly, far from a stance of passivity or indifference, secure attachment is characterized by genuine interest in and passion for improving the wellbeing of attachment figures (George & Solomon, 2008).

Anxious and avoidant attachment are also similar to grasping and aversion in that they engender bias in one's perceptions. The biases associated with insecure attachment are especially salient in responses to transgressions. For insecurely attached individuals, feelings of sadness or anger are difficult to manage. This may increase the likelihood of brooding and ruminative worry, which maintain these states of mind and contribute to negative bias in the attributional process (Fincham, Paleari, & Regalia, 2002). For securely attached individuals, by contrast, initial affective responses to transgressions may be quickly assuaged, opening up higher-level cognitive resources so that relevant social information can be attended to and considered in a more objective manner. Likewise, when one is mindful and not grasping to one's pleasures or averting from one's pains, affective responses that marshal awareness are neutralized, and, consequently, awareness is distributed evenly across the contents of consciousness (Ryan & Rigby, 2015).

There are empirical findings that lend support to the theoretical associations between secure attachment and mindfulness. For example, secure attachment and trait mindfulness share a number of positive psychosocial outcomes, including self-esteem (Brown & Ryan, 2003), emotional regulation (Chambers, Gullone, & Allen, 2009; Cloitre, Stovall-McClough, Zorbas, & Charuvastra, 2008), and forgiveness (Burnette, Davis, Green, Worthington, & Bradfield, 2009). More recently, the connection between secure attachment and mindfulness has been examined more directly. Goodall, Trejnowska, and Darling (2012), for example, provided evidence that trait mindfulness was inversely associated with adult attachment insecurity. In another study, Jones, Welton, Oliver, and Thoburn (2011) found positive associations between trait mindfulness, spousal attachment, and marital satisfaction. Finally, Pepping and Duvenage (in

press) demonstrated that heightened levels of attachment anxiety and avoidance mediated the relationship between retrospective reports of parental warmth and rejection and dispositional mindfulness.

Person-Centered Approach to Trait Mindfulness

The most well-known and oft-used measure of trait mindfulness is the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). This measure includes five subscales, each representing one of the five facets of mindfulness: observing, describing, acting with awareness, nonjudging, and nonreactivity. The observing facet is the tendency to notice any form of internal and external stimuli, such as sensations, cognitions, sights, and sounds. The describing facet is the ability to take bare experience and clothe it in words. Acting with awareness is the tendency to act with present-centered awareness, without going on “automatic pilot”. The nonjudging facet refers to one’s tendency to have a nonevaluative stance in relation to thoughts and feelings. Finally, the nonreactivity facet is the capacity to disengage from thoughts, images, and feelings, allowing them come and go (Baer et al., 2006).

Researchers typically use the FFMQ by summing all the items across these five separate facets of mindfulness, as opposed to identifying unique possibilities of how people may be high in some facets of mindfulness and low in others; that is, they use the FFMQ with a variable-centered approach instead of a person-centered approach. The fundamental difference between these approaches is encapsulated in the following quote: “Whereas variable-centered approaches look at how a set of continuous variables predict outcomes *separately and across people*, person-centered approaches allow researchers to understand how variables operate *conjointly and within people* to shape outcomes” (Gabriel, Daniels, Diefendorff, & Greguras, 2014, p. 3). Stated

differently, the fundamental difference between these two approaches is that variable-centered approaches reveal the correlational structure between variables when this structure is the property of the sample as a whole, whereas person-centered approaches allows for researchers to explore the correlational structure of variables within unique subgroups of the sample.

A latent profile analysis (LPA) is a specific kind of a person-centered approach in which subgroups of individuals are identified when they share similar configurations of a set of variables. An LPA may prove useful in solving some unexpected issues in measuring mindfulness with the FFMQ. Despite the popularity of the FFMQ, the “Observing” facet of mindfulness has puzzled researchers because of its unexpected positive association to variables such as psychological symptoms, disassociation, absent-mindedness, and thought suppression (Baer et al., 2006), all of which were negatively correlated with the other four facets of mindfulness, describing, acting with awareness, nonjudging, and nonreactivity (Baer et al., 2006). It should be noted, however, that observing was similar to the other facets in that it was linked with increases in emotional intelligence and self-compassion. One possible explanation for this and similar oddities in the FFMQ is that particular constellations of the five facets may reflect different subpopulations of individuals that researchers have not and cannot fully capture using a traditional, variable-centered approach with the FFMQ (Pearson, Lawless, Brown, & Bravo, 2015).

Consider the possibility that two individuals have the same scores when all of the subscales of the FFMQ are added together, which is consistent with the way it is typically used by researchers. Suppose these individuals scored the same on the acting with awareness subscale. However, whereas Person A scored high on the observing and describing subscales and low on the nonreactivity of inner experience and nonjudging of inner experience subscale, Person B has

low scores on the observing and describing subscales and low scores on the nonreactivity of inner experience and nonjudging of inner experience subscale. Although they had the same total score on the FFMQ, it is reasonable to expect differences between these individuals in terms of attributional tendencies. In addition, the specific mindfulness-based interventions used with individuals who are similar to Person A would likely bring about different results compared to individuals who are similar to Person B. There are many mindfulness-based interventions, each emphasizing certain facets of mindfulness. For example, mental noting and thought-labeling exercises focus on the observing and describing facets of mindfulness. On the other hand, exercises designed to cultivate acceptance and familiarity with difficult emotions, such as Siegel's (2010) "Stepping into Sadness" meditation practice, are likely to enhance the nonreactivity of inner experience and nonjudging of inner experience facets. This example illustrates the need to address the issues involved with the way in which mindfulness is typically measured. In this investigation, I hope to identify subgroups of individuals who share similar patterns in terms of scores on the subscales of the FFMQ. This may help set the stage for clinically-relevant research focused on the way in which specific mindfulness-based interventions relate to treatment outcomes for individuals within various subgroups.

Given the theoretical and empirical linkages that have been established between mindfulness, attributions, and attachment, it is possible that membership in these subpopulations may be meaningfully associated with the attributional tendencies as well as anxious and avoidant attachment. Zyphur (2009) noted, "Any areas of research normally prompting a regression mindset but involving the study of variables that could be considered as a coherent system may be recast in a theoretically useful way by adopting an LPA mindset" (p. 683). I concur with Zyphur's assertion and believe that mindfulness may be best understood by using an LPA.

Classes of Mindfulness

To date, Pearson and colleagues (2015) have produced the only study in which the varieties of classes of mindfulness using the FFMQ have been empirically examined through a latent profile analysis. In their investigation, they identified four classes of trait mindfulness. The High Mindfulness group was high in all the five facets of mindfulness, whereas the low mindfulness class was comparatively low in all five facets of mindfulness. The Nonjudgmentally Aware class was characterized by low scores in observing and nonreactivity to inner experience and high scores in acting with awareness and nonjudging. The Judgmentally Observing class topped the other classes in scores on the observing facet but had relatively low scores on the nonjudging and acting with awareness facets. Although Pearson and colleagues (2015) examined the links between the classes of trait mindfulness based on the FFMQ and emotional outcomes, including depression and distress intolerance, they did not explore how these classes were linked to relational variables, such as attachment or attributions.

Attachment and Attributions

The perceptions a person has regarding the causes of and intention behind his or her partner's behaviors are, in large part, based on the cognitive and affective schemata that one has developed in his or her early experiences (Mikulincer & Shaver, 2005). Bowlby, the father of attachment theory, was among the first to put words to this phenomenon. He averred:

“Every situation we meet in life is constructed in terms of representational models we have of the world about us and of ourselves. Information reaching through our sense organs is selected and interpreted in terms of those models, its significance for us and for those we care for is evaluated in terms of them, and plans of action are conceived and executed with those models in mind” (1980, p. 229).

One of the first studies to provide empirical support for Bowlby's assertion was conducted by Mikulincer (1998), a researcher who found that insecurely attached individuals were more likely to attribute hostile intent than securely attached individuals when presented with anger-eliciting scenarios. It is also important to note that more insecurely attached individuals reported higher levels of negative affect and experienced more substantial heart rate changes compared to securely attached individuals in response to the anger-eliciting scenarios. These results provide some evidence that working models of attachment guide attention and perception such that the severity of attributions and negative emotions are exacerbated in individuals with heightened levels of attachment anxiety or avoidance.

Beyond Mikulincer's (1998) study, there is a growing body of empirical evidence that supports Bowlby's claim that early experiences guide the way individuals interpret, organize, and respond to information throughout the lifespan. In a review of the studies exploring the link between attachment and attributions, Dykas and Cassidy (2011) concluded that individuals with heightened attachment anxiety or avoidance tended to process social information in a negatively biased fashion, whereas those who were securely attached absorb social information in a more balanced manner. Vrtička and Vuilleumier (2012) derived similar conclusions as Dykas and Cassidy in their review of neuroimaging data related to attachment and social perception and also noted that individuals who had an insecure attachment style were likely to over-emphasize the presence and seriousness of attachment-related threats.

Mindfulness and Attributions

To date, researchers have not tested the association between mindfulness and partner attributions. Nevertheless, mindfulness has been shown to be associated with a number of variables that have been shown to influence partner attributions, including emotional regulation

abilities (Mikulincer, 1998). By enhancing emotional regulation, mindfulness opens up higher-level cognitive resources so that information that may influence attributions can be attended to and considered in a more objective manner (Siegel, 2009).

Emotional regulation may also explain the way in which mindfulness impacts attention and perception. In one study, it was found that mindful breathing exercises partly shielded participants from negative bias by reducing automatic emotional responding to negative stimuli (Paul, Stanton, Greeson, Smoski, & Wang, 2013). Furthermore, in another study, Vago and Nakamura (2011) demonstrated that a sample of fibromyalgia patients who participated in 8-weeks of mindfulness meditation training exhibited a reduction in automatic attentional bias toward pain-related cues.

The positive impact of mindfulness on emotional regulation may also explain some of the empirical findings linking mindfulness with reduced bias in cognition. Kiken and Shook (2011) provided experimental evidence that mindfulness alters the information processing, finding that negativity bias was attenuated in individuals who received a 15-minute mindfulness intervention. In addition, Moore and Malinowski (2009) conducted an experiment using the Stroop interference as well as the “d2-concentration and endurance test” and concluded that mindfulness was associated with cognitive flexibility, or the ability to adapt one’s cognitive processes, including attention, when encountering novel stimuli.

Taken together, the existing research supports that mindfulness is involved with emotional, interpersonal, attentional, and perceptual processes related to attributions. Free of the cognitive mechanisms that skew the way in which one attends to and perceives information, including social information, mindfulness is characterized by an accepting stance toward

whatever enters awareness. Despite a lack of research specifically focused on the relationship between mindfulness and attributions, it is reasonable to suspect that mindfulness may play a role in the formation of attributions.

Attachment, Mindfulness, and Attributions

Partner transgressions are always painful, but the ultimate affective, cognitive, and behavioral results of the transgression greatly depends on subsequent attributions—the degree to which the partner is perceived as having intentionally caused the pain. The information entered into the attributional calculus may relate, at least in part, to mindfulness. With increased mindfulness, more information is accounted for, and it is weighted in an unbiased fashion. On the other hand, lower levels of mindfulness may allow negative affect or implicit attitudes, beliefs, or expectations to adulterate this process. However, mindfulness may be, to some extent, a by-product of working models of attachment. Mindfulness involves “clear, nonjudgmental, and undistracted attention to the contents of consciousness, whether pleasant or unpleasant” (Harris, 2014, p. 35). It is possible that the open awareness of stimuli and subsequent unbiased processing of it is contingent on the nature of one’s working models of attachment. Antithetical to mindfulness, attachment anxiety is associated with hypersensitivity to information that may signal an attachment threat, whereas attachment avoidance is associated with suppression of attachment-related needs and thoughts and a lack of trust in attachment figures. Conversely, secure attachment, marked by low attachment anxiety and avoidance, may increase one’s tendency to be mindful, facilitating open, nonjudgmental processing of information. Ultimately, instead of being mindful during and in response to partner transgressions, insecurely attached individuals may be more likely to filter out exculpatory information or selectively attend to information compatible with blameworthiness.

However, if classes of trait mindfulness can be identified based on the five facets of mindfulness, then it is important to consider that heightened levels of anxious and avoidant attachment may be related to the probabilities individuals have of belonging to the various classes of mindfulness. Take, for example, the Judgmentally Observing class that Pearson and colleagues (2015) identified in their latent profile analysis, which was characterized by relatively high levels of observing and relatively low levels of nonjudging of inner experience and acting with awareness. It would be reasonable to hypothesize that increased attachment anxiety would be associated with a higher odds of membership in the Judgmentally Observing class than the overall High Mindfulness class. When attachment anxiety is high, judging the character of one's experiences is needed so as to determine how to allocate attentional and perceptual resources in an effort to not experience attachment injuries. The automatic and incessant preoccupation with the availability of attachment figures may also lead to decreased scores on the acting with awareness subscale. This form of trait mindfulness may negatively skew perception in romantic relationships such that partners of anxiously attached individuals are unlikely to get the benefit of the doubt following a transgression.

The Present Study

In the present study, I will attempt to identify subgroups of trait mindfulness using a latent profile analysis. If, following Pearson and colleagues (2015), subgroups of trait mindfulness emerge using a latent profile analysis, I will attempt to answer three research questions. First, are anxious and avoidant attachment associated with trait mindfulness class membership probabilities? Second, are trait mindfulness class membership probabilities associated with attributions? Third, do mindfulness class membership probabilities mediate the relationship between the dimensions of attachment and partner attributions? To my knowledge,

this will be the first study to examine the relationship between mindfulness and attributions. This study will also extend the work of previous researchers who have explored the relationship between attachment and mindfulness by examining the links between anxious and avoidant attachment to profiles of trait mindfulness.

Wary of the impact of extraneous variation on the model, a number of variables will be controlled for in this investigation. First, based on previous research demonstrating positive correlations between trait mindfulness and relationship satisfaction (e.g., Barnes, Brown, Krusemark, Campbell, & Rogge, 2007; Saavedra, Chapman, & Rogge, 2010), I elected to control for relationship satisfaction in the analyses. I also opted to control for level of closeness with one's partner in the analyses based on the previous research that has established an association between closeness and trait mindfulness (e.g., Brown & Ryan, 2003; Carson et al., 2004). Because researchers have demonstrated an inverse relationship between depression and trait mindfulness (e.g., Cash & Whittingham, 2010; Deng, Li, & Tang, 2014), depression was included as a covariate in the analyses. A fourth variable, neuroticism, was controlled for in the analyses based on previous findings that evidenced an inverse relationship between neuroticism and trait mindfulness (e.g., Barnhofer, Duggan, & Griffith, 2011; Brown, Goodman, & Inzlicht, 2012).

Chapter 3 - Method

Sample and Procedure

Participants in a romantic relationship between 18 and 29 years of age, most of whom were students at a university in a rural Midwestern area, were recruited to participate in the study. An online survey was created for this cross-sectional study, and IRB approval was obtained before the survey was made available to potential participants. Instructors for a variety of introductory-level courses such as political science, biology, and anthropology were asked via email for permission to visit their classrooms to distribute flyers regarding the online survey. When instructors granted my co-investigator and I permission to visit the classrooms, we worked with the instructors to find a convenient time during which we could inform their students about the survey. When we visited the classrooms, we informed students that the survey was part of an effort to better understand young adult romantic relationships and handed out flyers that included key information about the survey, as well as a link that could be used to access it. Students were encouraged to take the survey if they met the survey criteria, and they were asked to invite their peers who met the criteria to participate, too. No extra credit was given to students for completing the survey, and instructors were not informed about which students took the survey. In total, my co-investigator and I visited 9 classrooms. In addition, one instructor elected to send the flyer to her students via email instead of having my co-investigator and I hand out flyers in-person. The online survey took approximately 30 minutes for participants to complete. Participants who completed the survey and provided their name and mailing address were sent \$10 in the mail as remuneration for their participation in the study.

The inclusion requirements for this study included current involvement in a romantic relationship and being between the ages of 18 and 29 years of age. Of the 608 individuals who

accessed the link to the survey, 560 agreed to the informed consent document and began to take the survey. Sixteen participants were not included in subsequent analyses because they failed to complete at least half of the items, and two other participants were not included in subsequent analyses because they completed the survey in less than 15 minutes. Thus, the operational sample for this study was 542 participants.

Among the 542 participants in the operational sample, 68.8% were females, and 32.2% of the participants were males. The average age was 20.3 ($SD = 2.00$). In terms of race, the sample was 88.7% European American, 2.5% African American, 3.5% Latino, 2.3% Asian, 0.6% Native American, 1.8% multiracial, and 0.6% other race. The vast majority of participants, 97.4%, reported that their romantic relationship was with an opposite sex partner, and the average relationship length among participants was about 23 months.

Measures

Anxious and Avoidant Attachment

The Experiences in Close Relationships—Revised (ECR-R; Fraley, Waller, & Brennan, 2000) was used to assess participants' level of attachment anxiety and avoidance. Previous investigations (e.g., Sibley, Fischer, and Liu, 2005), have provided support for the psychometric properties of the ECR-R. The items for this measure and all of the other measures in this investigation can be viewed in Appendix C. This measure included a total of 36 question items, with 18 items used for the anxiety subscale (e.g., “I often worry that this person doesn't really care for me”) and 18 items used for the avoidance subscale (e.g., “I prefer not to show this person how I feel deep down”). The previous investigation (Sibley, Fischer, & Liu, 2005), ECR-R was shown to be a reliable and valid measure. Each item in the measure is accompanied by a seven-point Likert scale that included potential responses ranging from 1 = *strongly disagree* to

7 = *strongly agree*. Participants were asked to select the responses that best fit the way in which they relate to their romantic partner. Scores for participant responses for the anxiety subscale and the avoidance subscale were summed for the analysis. Higher scores for the avoidance subscale indicated a greater tendency to avoid, whereas higher scores on the anxious subscale indicated a greater tendency to be anxious. The alpha coefficient was $\alpha = .92$ for the avoidance subscale and $\alpha = .86$ for the anxious subscale.

Benign Attributions

The Relationship Attribution Measure (RAM; Fincham & Bradbury, 1992) was used to assess attributions about the romantic partner's behaviors. The RAM is comprised of 24 -items and has been shown to be a reliable measure as evidenced by high internal consistency and high test-retest correlations (Hall & Fincham, 2008). In the RAM, participants were presented with four hypothetical negative partner behaviors (e.g., "Imagine that your partner is distant and cool toward you"), and six items follow each negative partner behavior, one item for each of the six types of attributions. Participants were asked to indicate the degree to which they agreed with each statement using a 6-point scale (1 = *strongly disagree* to 6 = *strongly agree*). Six types of attributions were assessed in reference to each of the four hypothetical negative partner behaviors, including: locus (e.g., attribution of the negative behavior to be within the partner), stability (e.g., likelihood partner will always be that way), global (e.g., this negative behavior is attributed to affect other areas of the relationship), intent (e.g., partner acted that way on purpose), selfish (e.g., my partner acted this way to be selfish), and blameworthy (e.g., my partner deserves to be blamed for what was done). Causal attributions included 12 question items on locus, stability, and global. Responsibility attributions included 12 questions on intent, selfish, and blameworthy. The mean of the items for each subscale of causal attributions and

responsibility attributions were independently calculated and coded such that a higher attribution score represented more benign attributions about the partner. The alpha coefficient was $\alpha = .87$ for causal attribution items and $\alpha = .93$ for responsibility attribution items. Benign attributions was measured as a single latent variable, with causal attributions and responsibility attributions as the two indicators. The standardized factor loadings for causal attributions and responsibility attributions were .88 and .90, respectively.

Mindfulness

The Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Baer et al., 2008) was used to assess trait mindfulness. The original FFMQ was created from a factor analysis of items from five independently developed mindfulness questionnaires, including the Freiburg Mindfulness Inventory (Buchheld, Grossman, & Walach, 2001), the Mindful Attention Awareness Scale (Brown & Ryan, 2003), the Mindfulness Questionnaire (Chadwick, Hember, Mead, Lilley, & Dagnan, 2005), the Kentucky Inventory of Mindfulness Skills (Baer et al., 2004), and the Cognitive and Affective Mindfulness Scale (Feldman, Hayes, Kumar, & Greeson, & Laurenceau, 2004). This process resulted in 39 total items that loaded onto five subscales of mindfulness. Since the inception of the FFMQ, its psychometric properties have been extensively tested, with studies yielding evidence supporting its reliability and validity (e.g., Christopher, Neuser, Michael, Baitmangalkar, 2012). Participants were asked to indicate the degree to which each of 39 statements were true for them using a 5-point scale (1 = *never or very rarely true* to 5 = *very often or always true*). Participants were given scores on the following subscales: observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. The observing subscale (8 items) measures one's tendency to notice internal and external experiences. The describing

subscale (8 items) assesses the capacity to put words to internal and external experiences. The acting with awareness subscale (8 items) measures one's tendency to maintain focused on one's actions in the present moment. The nonreactivity to inner experience subscale (7 items) measures the capacity to allow thoughts, images, and feelings to come and go and not get stuck in them. Finally, the nonjudging of inner experience subscale (8 items) was the tendency to take a nonevaluative attitude toward inner experience. The average score for the items within each subscale were calculated for each participant. The alpha coefficient was $\alpha = .80$ for the observing subscale, $\alpha = .82$ for the describing subscale, $\alpha = .80$ for the acting with awareness subscale, $\alpha = .88$ for the nonjudging subscale, and $\alpha = .79$ for the nonreactivity subscale.

Control Variables

I utilized the Couples Satisfaction Index-4 (CSI-4, Funk & Rogge, 2007) to control for relationship satisfaction in the analysis. This 4-item scale measured the contentment people have with their romantic relationships. The items in the CSI-4 were scored based on 6-point Likert scale format from 1 to 6. For each participant, the mean score for the items was calculated; higher scores reflected more relationship satisfaction. The alpha coefficient for the CSI-4 was $\alpha = .85$. The Inclusion of Other in the Self Scale (IOS; Aron, Aron, & Smollan, 1992) is a single-item measure of interpersonal closeness that is pictorial in nature was used to control for level of closeness to one's romantic partner. The IOS includes seven diagrams, each with two circles, one of which is labeled "self" and one of which is labeled "other". Participants were asked to select the diagram that best fits how they perceive their romantic relationship. The choices ranged from *nonoverlapping circles* (1) to *almost completely overlapped circles* (7), with more overlap indicating more closeness. Depressive symptoms were controlled for in the analysis using the Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2002). Participants were

asked to think about how often over the past two weeks they have been bothered by the symptoms of depression described in the items in PHQ-9. Responses in this nine-item measure ranged from 0 = *not at all* to 3 = *nearly every day*, and the mean score for the items was calculated and coded such that higher scores reflected higher levels of depression. The alpha coefficient for this measure was $\alpha = .73$. Neuroticism was also controlled for in the analysis using the Eysenck Personality Questionnaire—Brief Version (EPQ-BV; Sato, 2005), a 12-item measure in which participants were asked to respond to a several questions regarding their tendency to feel a variety of negative emotional states. The alpha coefficient for the EPQ-BV was $\alpha = .92$. Responses for the EPQ-BV range from 1 = *not at all* to 5 = *extremely*, and the mean score of the items were used for the analyses, with higher scores reflecting more neuroticism. Gender was included as the final control variable; it was coded as 0 = *male*, and 1 = *female*.

Data Analysis Plan

In this investigation, I tested (1) if there were multiple subgroups of individuals who share similar configurations of mindfulness, (2) whether anxious and avoidant attachment were linked with mindfulness classes, (3) the association between mindfulness classes and attributions, and (3) the indirect effects from anxious attachment to mindfulness to attributions as well as the indirect effects from avoidant attachment to mindfulness to attributions.

It is important to note that mindfulness was measured using a person-centered approach. Whereas variable-centered approaches are used to examine the relations between variables, person-centered approaches are used to explore how sets of variables emerge in patterned ways among individuals (Bauer & Shanahan, 2007). In this study, I conducted a latent profile analysis (LPA) using Mplus 7.11 (Muthén & Muthén, 2012) in order to identify different classes of trait mindfulness, or subgroups of individuals who have similar patterns of scores across the five

facets of mindfulness. Starting by testing the fit of a single-class model against a two-class model, I iteratively tested a series of models with two classes, three classes, four classes, five classes, and six classes.

Several statistical indicators were used to compare the models with two to six classes, with varying sets of parameter constraints to evaluate which model fits the data best. The model fit indices that were used to select the best fitting model included the Akaike's Information Criterion (AIC), the Bayesian information criterion (BIC; Schwarz, 1978), the sample-size-adjusted BIC (ABIC; Sclove, 1987), Lo–Mendell–Rubin Likelihood Ratio Test (LMR; Lo, Mendell, & Rubin, 2001), and entropy. Whereas lower values for AIC, BIC, and ABIC indicate a more optimal class solution, higher values for entropy suggest a better fit to the data. The LMR is a test in which a significant value ($p < .05$) indicates that the solution with k groups fits better than a model with $k - 1$ groups. That is, if the LMR value is significant, then that model fits significantly better than a model with one less class.

After the optimal number of classes is reached, I used the posterior probabilities to assign each participant to a single class. I then used dummy coding so that class membership could be meaningfully included in the model. Following that step, I ran the full structural equation model to explore the direct effects from anxious and avoidant attachment to the classes of mindfulness and from the classes of mindfulness to the latent variable of attributions. I also tested the indirect effects from attachment to attributions via the classes of mindfulness. To do this, I employed bootstrapping, which is a resampling procedure used in tests of mediation. A total of 2,000 bootstrap resamples were used. Next, the 95% confidence intervals of the indirect effects were examined. Following Shrout and Bolger (2002), indirect effects may be considered statistically significant when zero is not included in the 95% confidence interval around that indirect effect.

Full-information maximum likelihood (FIML) estimation outperforms other ways of handling missing data, including listwise deletion, pairwise deletion, or imputation of means (Peters & Enders, 2002), so it was used in handling missing data in this modeling procedure.

Chapter 4 - Results

Preliminary Analyses

The correlations among all of the variables in the model can be viewed in Table 1. Among the five subscales in the FFMQ, significant positive associations were found for all but four cases ($p < .001$). Of those four cases, two of them did not reach statistical significance; nonreactivity was not significantly associated with nonjudging ($r = .04, p = .30$) or acting with awareness ($r = .05, p = .24$). In the other two cases, significant inverse associations were found. More specifically, observing was significantly inversely correlated with nonjudging ($r = -.20, p < .001$) and acting with awareness ($r = -.20, p < .001$). Avoidant attachment was negatively associated with observing ($r = -.12, p < .001$), describing ($r = -.35, p < .001$), nonjudging ($r = -.12, p < .001$), acting with awareness ($r = -.18, p < .001$), but it was not significantly associated with the nonreactivity subscale ($r = .01, p = .97$). Anxious attachment was significantly inversely correlated with four of the five mindfulness subscales ($p < .001$); the inverse association with the observing subscale failed to reach statistical significance. The five subscales were differentially associated with anxious and avoidant attachment and with other variables in the model, which points to the need for a more nuanced approach to measuring trait mindfulness.

Latent Profile Analyses

The indicators of model fit for 2-, 3-, 4-, 5-, and 6-class solutions can be viewed in Table 2. Examination of the Lo–Mendell–Rubin Likelihood Ratio Test (LMR) test revealed that the 4-class model fit better than the 3-class model ($p < .001$) and that the 5-class model was not significantly better than the 4-class model. Although the entropy value for the 4-class model (.80) was slightly lower than the entropy value for the 3-class model (.82), the 4-class model

outperformed the 3-class model on AIC, BIC, and ABIC and only slightly higher AIC and ABIC than the 5-class model. Taken together, the statistical indicators provided evidence that the 4-class model was the best fit to the data.

The four classes that emerged through the LPA are shown in Figure 1. The four classes were structured similarly to those found by Pearson and colleagues (2015). Therefore, following Pearson and colleagues (2015), I opted to refer to the four classes as the Judgmentally Observing class, the Low Mindfulness class, Nonjudgmentally Aware class, and High Mindfulness class, respectively. Of the 531 participants included in the analysis, 119 (22.4%) were members of the Judgmentally Observing class (class 1), 219 (41.2%) were members of the Low Mindfulness class (class 2), 41 (7.7%) were members of the Nonjudgmentally Aware class (class 3), and 152 (28.6%) were members of the High Mindfulness class (class 4). In the Judgmentally Observing class, the lowest average score was on nonjudging facet and the highest average score was in the observing facet. In other words, individuals in Judgmentally Observing class were likely to notice internal and external stimuli, but they were also likely to make evaluative judgments about their thoughts and feelings. There was little variation among the average scores for the other three facets Judgmentally Observing class. The Low Mindfulness class had comparable, but relatively low scores across the facets of mindfulness. The High Mindfulness class, like the Low Mindfulness class, had the scores that were similar across the facets of mindfulness; but the average score for each facet in the High Mindfulness class was higher than the average score for the corresponding facet in the Low Mindfulness class. The Nonjudgmentally Aware class was characterized relatively low scores on observing and nonreactivity facets, but it was the class

with the highest average scores on the nonjudging and acting with awareness facets. Individuals in this class, therefore, they were likely to act with present-centered awareness, not automatically, and they were not likely to make judgments about their inner experiences.

Mean Comparisons

After assigning participants to a single class based on their highest posterior probability (see Table 3), mean-level differences between these four classes of mindfulness were compared. Prior to testing for mean differences, the Levene's statistic was used to test homogeneity of variance between classes for all of the variables included in the model. The assumption of homogeneity of variance were met for all but four variables: avoidant attachment, depression, closeness, and the nonreactivity facet of the FFMQ. For mean comparisons between these variables, the Welch's test was used to test for differences between different classes, and the Games-Howell post-hoc was used to examine mean comparisons. For the other variables in the model, one-way ANOVA tests were used, with pairwise mean comparisons conducted using Hochberg's GF2 statistic. Although all of the results of these mean differences between classes can be viewed in Table 4, a few significant findings are presented here. First, the mean of the Nonjudgmentally Aware class was significantly higher than all of the other classes on the nonjudging ($p < .001$) and acting with awareness subscale ($p < .01$), but lower than all of the other classes on nonreactivity ($p < .001$). Whereas the High Mindfulness class had significantly higher scores on observing ($p < .001$) and describing ($p < .001$) than all of the other classes, the Judgmentally Observing class scored significantly lower than all of the other classes on nonjudging ($p < .001$) and acting with awareness ($p < .001$). The Low Mindfulness class did not have significantly lower scores on any of the facets of mindfulness compared to the other classes of mindfulness.

Model Fit

Bootstrapping procedures were employed in testing the model. The model fit the data adequately, as evidence by the goodness of model fit indices: $\chi^2(9) = 9.43, p = .22$, CFI = 1.00, RMSEA = .03 (90% Confidence Interval [CI]: .00, .06), and SRMR < .01. Next, the direct effects of the model were examined, all of which are shown in Figure 2. Controlling for depression, neuroticism, closeness, relationships satisfaction, and gender, a one-unit increase in anxious attachment was associated with a 9.53 times increase in the likelihood of belonging to the Judgmentally Observing class ($b = .10, p < .001$ OR: 9.53), an 83% reduction in odds of being in Nonjudgmentally Aware class ($b = -.06, p < .001$ OR: .17), and a 53% reduction in odds of being in the High Mindfulness class ($b = -.05, p < .05$ OR: .47), relative to the Low Mindfulness class. A one-unit increase in avoidant attachment was associated with a significant increase in the likelihood of belonging to the Judgmentally Observing class ($b = .04, p < .05$ OR: 1.93) and a significant reduction in odds of being in the High Mindfulness class ($b = -.07, p < .01$ OR: .71). However, there was not a significant association between avoidant attachment and the likelihood of being in the Nonjudgmentally Aware class ($b = .00, p = .95$ OR: .94).

Four of the five of the direct paths to benign attributions were significant. More specifically, both anxious ($\beta = -.11, p < .001$), and avoidant attachment ($\beta = -.20, p < .001$) were negatively associated with benign attributions. Furthermore, membership in the High Mindfulness class was linked with more benign attributions ($\beta = .26, p < .001$). Similarly, the Nonjudgmentally Aware class was linked with more benign attributions ($\beta = .17, p < .01$). There was not a significant association between membership in the Judgmentally Observing class and benign attributions ($\beta = -.04, p = .31$).

It is worth noting that there were a number of significant associations in the model between the control variables and the endogenous variables in the model. Neuroticism ($p < .001$) and depressive symptoms ($p < .001$) were positively associated with membership in the Judgmentally Observing class, whereas closeness ($p < .001$) was negatively associated with membership in the Judgmentally Observing class. Depressive symptoms were negatively associated with membership in the Nonjudgmentally Aware class ($p < .05$). Neuroticism ($p < .05$) and depression ($p < .001$) were negatively linked with membership in the High Mindfulness class. Two of the five control variables—relationship satisfaction ($p < .001$) and neuroticism ($p < .01$)—were significantly associated with benign attributions.

Indirect Effects

Bootstrapping procedures were used to test the indirect effects in the model. Two of the six possible indirect effects in the model reached statistical significance. The first significant indirect effect was from anxious attachment \rightarrow Nonjudgmentally Aware class \rightarrow benign attributions ($\beta = -.03, p < .01, 95\% \text{ CI} = -.07, -.01$). In other words, a one standard deviation unit increase in anxious attachment was associated with a $-.03$ standard deviation unit increase in benign attributions, via its prior effect on the probability of being Nonjudgmentally Aware class relative to the Low Mindfulness class, on average, while controlling for closeness, depression, neuroticism, relationship satisfaction, and gender. The second significant indirect effect was from avoidant attachment \rightarrow High Mindfulness class \rightarrow benign attributions ($\beta = -.04, p < .01, 95\% \text{ CI} = -.07, -.02$). Altogether, the model accounted for approximately 72% of the variance in benign attributions.

Chapter 5 - Discussion

Identifying Classes of Trait Mindfulness

This study represents an attempt to explore the ways in which the constituents of trait mindfulness tend to constellate within individuals so as to advance understanding regarding the role that trait mindfulness plays in romantic relationships. Using a latent profile analysis, a person-centered approach, I found evidence for four classes of trait mindfulness based on the patterned organization of the facets of mindfulness. The classes I found in this study mirror the four subgroups identified by Pearson and colleagues (2015) and were, therefore, given the same names: the High Mindfulness class, the Low Mindfulness class, the Nonjudgmentally Aware class, and the Judgmentally Observing class. The present investigation extends Pearson and colleagues' (2015) work, however, by providing evidence that the classes of mindfulness are associated with the dimensions of adult attachment and partner attributions.

Classes of Trait Mindfulness and Romantic Relationships

Several researchers have demonstrated a link between trait mindfulness and attachment, but, heretofore, this association had not been established using a person-centered approach in measuring trait mindfulness. In the present study, after conducting a latent profile analysis with the facets of mindfulness, the associations between the classes of mindfulness and attachment were examined. Interestingly, both forms of insecure attachment, anxiety and avoidance, were linked with a greater likelihood of membership in the Judgmentally Observing class, as well as a reduced likelihood of membership in the High Mindfulness class. This is consistent with research that has indicated that attachment anxiety and avoidance have a comparable impact on attention and memory processes (van Emmichoven, van Ijzendoorn, de Ruiter, & Brosschot, 2003). On the other hand, it is important to note that anxious attachment, but not avoidant, was negatively

linked to membership in Nonjudgmentally Aware class. This is consonant with findings from an investigation in which anxious attachment was negatively linked with trait mindfulness but not avoidant attachment (Walsh et al., 2009). Ultimately, anxious and avoidant attachment may share associations with some, but not all, of the classes of trait mindfulness.

The classes of trait mindfulness were also associated with partner attributions. For example, members of the High Mindfulness class were more apt to make charitable interpretations of partner transgressions than members Low Mindfulness class. These results are consistent with a finding from a previous investigation in which less mindful individuals showed heightened neurophysiological reactivity associated with negativity bias (Ho, Sun, Ting, Chan, & Lee, 2015). In the present study, I also demonstrated that membership in the Judgmentally Observing class was linked with detecting more malice in negative partner behaviors and that membership in the Nonjudgmentally Aware class was linked with more favorable partner attributions. These findings are consistent with research in which there were differences among the facets of trait mindfulness in terms of the degree to which stress-induction was associated with negative bias (Paul et al., 2013). The researchers concluded that “each facet of mindfulness may have its own neural mechanism and confer different cognitive or emotional benefits” (Paul et al., 2013, p. 62). Beyond the impact of individual facets of trait mindfulness, however, the findings from this study support the notion that various classes of trait mindfulness may differ in terms of the way they alter perception in romantic relationships.

Two indirect effects were identified in the investigation. In the first, heightened attachment anxiety was associated with a decreased probability of membership in the Nonjudgmentally Aware class relative to the Low Mindfulness class and, by extension, less benign attributions. In the second, increased attachment avoidance was associated with less

benign attributions via a decreased likelihood of membership in the High Mindfulness class relative to the Low Mindfulness class. Attachment theory provides a sound theoretical framework for making sense of the significant indirect effects in the model. Insecure attachment reflects unfavorable beliefs and attitudes self and other, which results in both a fear and expectation of rejection and abandonment by attachment figures. In order to protect the self, strategies associated with either anxious or avoidant attachment are implemented. Although anxious attachment and avoidant attachment reflect different strategies, they both alter the attitudinal, attentional, and perceptual factors involved in trait mindfulness. Consequently, social information filtered and evaluated largely in terms of the goal of protecting the self from rejection and abandonment. Paradoxically, this is likely to make successful relationships with attachment figures less likely, as it sets the stage for negatively biased interpretations of partner behaviors such that transgressions are more likely to be viewed as intentional and worthy of blame.

Clinical Implications

There are dozens of mindfulness-based practices for clinicians to choose from in working with clients, but individuals vary in terms of the psychological changes that occur from these practices (Kelly, Zuroff, Foa, & Gilbert, 2010), bringing about an imperative to identify “traitlike factors” in individuals that correspond to specific benefits of particular practices (Vago, 2014). Person-centered approaches allow heterogeneity within populations to be modeled (Bergman, von Eye, & Magnusson, 2006; von Eye & Bergman, 2003), which makes it possible for clinicians to identify and account for subgroup membership as they make decisions regarding the treatment of specific clients. In this investigation, I used a person-centered approach to identify four classes of trait mindfulness and demonstrated that class membership was linked with

anxious and avoidant attachment and attributions. With the findings of this investigation in mind, clinicians who use mindfulness-based interventions in working with couples may be able to maximize client outcomes by tailoring their interventions to the way in which the facets of mindfulness constellate within the client.

The findings of this study revealed that heightened attachment anxiety was negatively associated with benign attributions via a decreased probability of membership in the Nonjudgmentally Aware class. Clinically, individuals who struggle with attachment anxiety may benefit most from exercises that emphasize nonjudging and acting with awareness, the two facets that had higher averages in the Nonjudgmentally Aware class than every other class. Attachment anxiety guides attention toward signs of rejection and abandonment such that individuals with high attachment anxiety respond in “familiar ways even with new input, since he or she forces compliance and only accepts the part that fits into his or her established worldview” (Roberts, 2006, p. 30). However, developing a more nonjudgmental attitude may facilitate movement from the Low Mindfulness class to the Nonjudgmentally Aware class. Thus, the individual would be more likely absorb exculpatory information when faced with a partner transgression, instead of letting affect-driven judgments guide perceptions toward information that suggests abandonment, rejection, and betrayal (Siegel, 2009; Tamietto & De Gelder, 2010; Vago & Silbersweig, 2012). In addition, practices that facilitate development of the acting with awareness facet may allow individuals who have elevated levels of attachment anxiety to become more aware of the automatic affective and cognitive processes that guide perception as they occur. Thus, one may be better able to intentionally challenge these processes and engage in reappraisal of partner behaviors.

In this study, I also found a significant indirect effect linking attachment avoidance with less benign attributions via an increased probability of membership in the Low Mindfulness class relative to the High Mindfulness class. It is possible, therefore, that practices that facilitate equal development of the facet of mindfulness may bring about more benign partner attributions in individuals who exhibit behaviors consistent with attachment avoidance. I also speculate that it may also be important for clinicians to consider the way in which interventions focused on enhancing romantic relationships may produce unintended results by altering the balance of the facets of mindfulness. For example, focusing on practices that strengthen the observing facet of mindfulness could actually engender more pessimistic attributions, depending on the individual's class membership at the beginning of therapy. Consider a clinician who uses an intervention for a person with elevated attachment avoidance in an effort to enhance sensitivity to that individual's romantic partner. Although this may enhance that individual's level of observing, the deactivating strategies associated with attachment avoidance may mean that interventions that increase observing may also be met with a more judgmental attitude toward what one notices.

Negative bias in attributions may be reduced when an increase in the observing facet is part of a larger shift in the arrangement of the facets of mindfulness that moves an individual from the Low Mindfulness class to the High Mindfulness class. Contrastingly, an increase in the observing facet that corresponds with decreases or an absence of change in the other facets may actually aggravate tendencies to have negatively bias attributions. Some researchers have suggested that mindfulness-based interventions that emphasize the observing facet, such as mental noting and thought-labeling, may unintentionally exacerbate aversion to unwanted thoughts and feelings (e.g., Grabovac, Lau, & Willett, 2011). In these cases, clients may develop a tendency to "preferentially redirect their attention to the breath in an attempt to achieve

immediate symptom reduction via attention regulation rather than carefully examining the experience” (Grabovac, Lau, & Willett, 2011, p. 164). Relatedly, researchers have noted that some individuals engage in meditative practices to escape relational conflict and to avoid intimacy with others (e.g., Goleman, 1988). It is possible that practices that enhance the observing and describing facets of mindfulness without developing the other facets of mindfulness may enable individuals with high levels of attachment insecurity to continue to monitor the presence of attachment-related threats while attempting to assuage, rather than accept, their emotional impact.

Although mindfulness is a practice and state of mind common to every strand of Buddhist meditative practice, there is considerable variation in terms of the nature of the practices and the amount of emphasis placed on each component of mindfulness is emphasized within and between Buddhist traditions (Goldstein, 2002; Kabat-Zinn, 2003). Because not all mindfulness-based interventions target the five facets of trait mindfulness equally, clinicians should carefully consider the use of interventions designed to focus on the specific areas of mindfulness that may be most helpful for each unique client. More specifically, in working with couples in which the partners tend to make negatively biased attributions regarding each other’s behavior, clinicians should assess the specific subgroup of mindfulness to which each partner belongs. The subgroup membership for each partner can then be taken into account in deciding which practices to include in treatment.

Future Directions

Based on the results of this study, one area for future research is the development of instruments specifically designed to classify individuals into discrete subgroups of trait mindfulness. In this way, researchers may be better able to determine whether variation in trait

mindfulness fits a typological model. Until such measurements are created and garner empirical support, researchers may consider employing person-centered approaches in using the Five Facet Mindfulness Questionnaire (Baer et al., 2006) in testing the effectiveness of mindfulness-based interventions. For example, researchers may use latent transition analyses to test whether various mindfulness-based interventions can engender wholesale changes in trait mindfulness class membership across time. Thus, researchers who conduct investigations of mindfulness-based interventions may garner a better understanding of the impact of various interventions by assessing whether the intervention promotes movement from membership in one trait mindfulness class to another.

Another area for future research involves the further exploration of the association between attachment and mindfulness. Because evidence was found in this investigation to support the connection between attachment and trait mindfulness class membership, future research may be useful in elucidating the causal relationship between them. The intrapersonal attunement associated with mindfulness and the interpersonal attunement associated with secure attachment may reinforce each other in a loop (Siegel, 2007), which raises the possibility that attachment-based interventions could promote mindfulness. Future research, therefore, may explore the use of attachment-based interventions in creating shifts in trait mindfulness compared to traditional mindfulness practices. On the other hand, research may also examine the effectiveness of mindfulness practices in facilitating change in working models of attachment. It is worth noting that the use of mindfulness practices in addressing issues involving attachment has been favorably examined using qualitative methodology (see Beckerman & Sarracco, 2011). Couple-level mindfulness-based interventions may be of particular interest for researchers who intend to explore the use of mindfulness-based interventions in promoting change in working

models of attachment. Couple-level practices may be better suited than traditional forms of mindfulness to trigger and modify impulses of grasping and aversion in romantic relationships (Kramer, 1997, 2007). Therefore, the impact of couple-level mindfulness practices, such as loving-kindness meditation, eye gazing, and synchronized breathing on working models of attachment may warrant attention from researchers.

Lastly, given the preliminary evidence was found for the relationship between trait mindfulness and attributions found in this study, empirical research is needed to examine the use of mindfulness practices in altering attributional tendencies. Despite evidence that mindfulness practices can alter automatic attentional and perceptual processing (e.g., Cahn & Polich, 2009), researchers have not yet explored the way in which these practices alter attributional patterns of partner behaviors.

Limitations

The findings from this study should be interpreted with consideration of the following limitations. First, participants were assessed cross-sectionally, so it is not possible to use the data to establish the temporal and causal ordering of the variables. It is also important to note that there is still considerable debate within the scientific community regarding the validity of self-report measures of mindfulness (for review see Chiesa, 2012). One primary concern is that there may often be a substantial chasm between one's perception of one's own level of mindfulness and the degree to which one is really mindful (e.g., Bergomi, Tschacher, & Kupper, 2012; Chiesa, 2012; Grossman, 2008). Despite recent advances involving the measurement of mindfulness by examining brain region activation, self-report measures are currently the most viable approach for researchers to use when assessing mindfulness.

Another limitation of this study involves the unresolved issue of how to best determine the number of classes in a latent profile analysis. In investigations that involve a latent profile analysis, it is common for the fit indices to provide support for different conclusions in terms of class enumeration (Berlin, Williams, & Parra, 2013). In this study, not all of the model fit indices supported the four-class solution. More specifically, the four-class solution performed better on four of the five indicators of model fit, but the value for entropy was slightly higher for the 3-class solution. Because most of the fit indices supported a 4-class solution and there was not theoretical rationale to support the 3-class solution, I elected to use the 4-class solution. Although there are a number of simulation studies that have compared the performance of various fit indices (e.g., Yang, 2006; Tofighi & Enders, 2007), researchers use a combination of them, in addition to theoretical considerations, in making decisions about the number of classes to use (Wang & Hanges, 2011).

The limitations of this study notwithstanding, there are several aspects of this study that advance research on mindfulness and romantic relationship. First, the use of a person-centered approach in measuring trait mindfulness overcomes some of the drawbacks to the more common variable-centered approach to measuring trait mindfulness. Chiesa (2012) pointed out that that the “merely linear, additive models that sum putative markers of mindfulness could not suffice.” (p. 261). Chiesa went on to argue that “any attempt to delineate discrete components of mindfulness is not likely to capture the inherent interrelationships among mindfulness and related concepts that are considered, according to the classical perspective of mindfulness, as synergistic and mutually reinforcing” (p. 261). However, by using a person-centered approach, I was able to examine the way in which the facets of mindfulness constellate in patterned ways among individuals, so this investigation may represent a step toward ameliorating some of the

concerns regarding measures of trait mindfulness. Other strengths of this study include the use of measures with strong psychometric properties, the inclusion of a number of relevant control variables in the model, and the use of a relatively large sample of young adults in romantic relationships.

Conclusion

Crucial relationship decisions hinge on the perception partners have regarding each other's intentions behind their behaviors, as these are used to make inferences about what the partner is likely to do in the future. However, habitually uncharitable interpretations of partner transgressions may hinder the development of a long-lasting, healthy romantic relationship. Unfortunately, research on attributions in romantic relationships has equipped clinicians with few tools with which to alter attributional patterns in clinical settings. Because trait mindfulness plays a role in the factors that govern the attributional process, such as attention and perception, a better understanding of trait mindfulness and the nature of the relationships among anxious and avoidant attachment, trait mindfulness, and attributions may facilitate the development of interventions that clinicians can use to effectuate positive change in attributional patterns in couples.

In this investigation, I conducted a latent profile analysis so as to identify classes of individuals based on each of the five facets of the FFMQ. After identifying four classes of trait mindfulness, I found that partner attributions and anxious and avoidant attachment were associated with class membership. I also demonstrated that trait mindfulness class membership was associated with the partner attributions. The findings from this study support Pearson and colleagues (2015) finding that the constellations of the facets of trait mindfulness within individuals can be understood best as a four-class model. Not only does this investigation

buttress previous research, it builds upon it by shedding light on the associations between anxious and avoidant attachment, the four classes of mindfulness, and partner attributions. Furthermore, to my knowledge, this study represents the first attempt to examine the relationship between trait mindfulness and attachment using person-centered approach. This study also extends research involving mindfulness and romantic relationships by being the first to provide evidence that trait mindfulness is linked with partner attributions.

Addressing trait mindfulness in clinical work with couples may encourage benign attributions, but, to take full advantage of mindfulness-based interventions with couples, it may be necessary researchers and clinicians to adopt a more person-centered perspective. Accounting for trait mindfulness class membership in could enhance efforts aimed at understanding the way in which mindfulness interventions, or specific elements mindfulness interventions alter attributions or engender other relational outcomes for individuals within various subgroups. This may set the stage for a more flexible application of mindfulness interventions (Vago, 2014), as opposed to a “one size fits all” approach, allowing for the development of targeted and cost-effective mindfulness-based treatment programs for couples.

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Appendix A - Figures

Figure 1. Four Latent Classes Defined by Means on the Five Facets of Trait Mindfulness (N = 531)

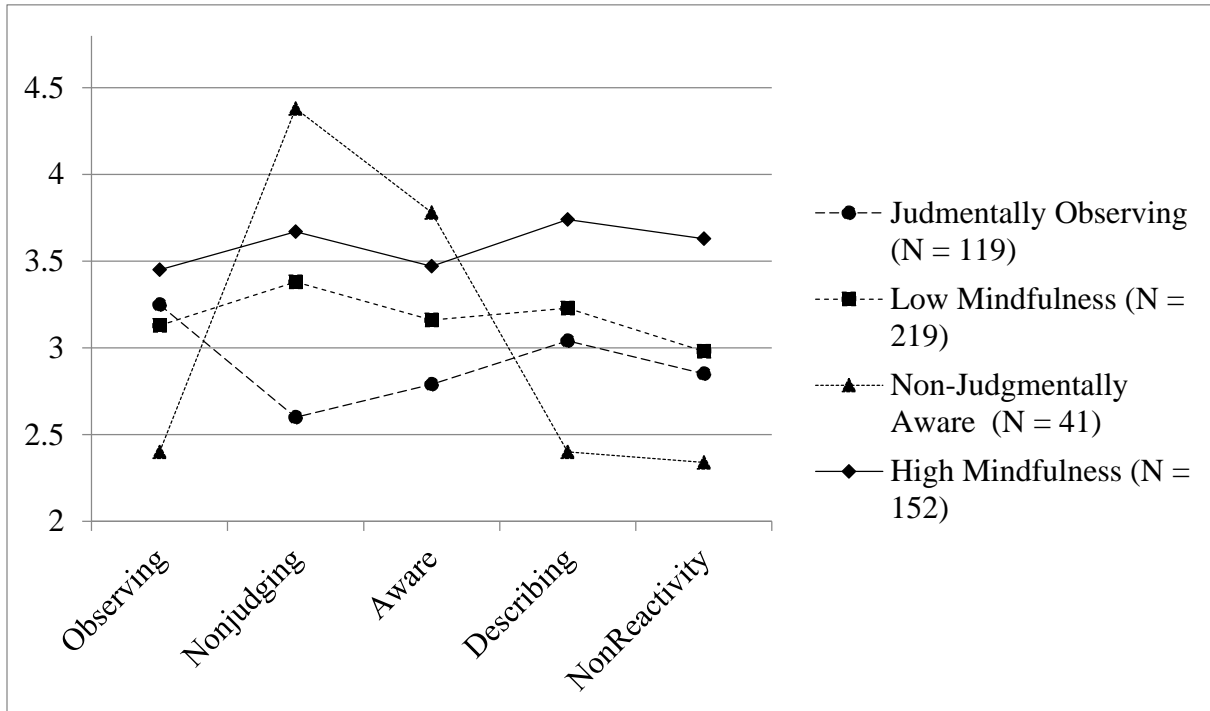
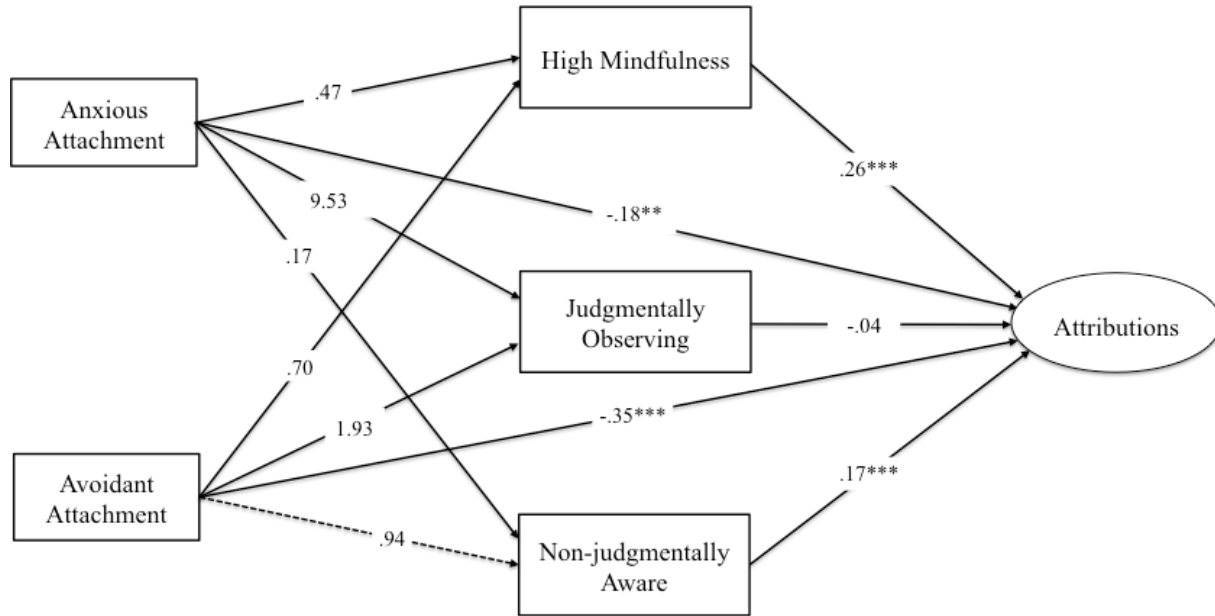


Figure 2. Model of Associations Among Attachment, Classes of Trait Mindfulness, and Benign Attributions (N = 531)



Note: Standardized solution. Model fit indices: $\chi^2(9) = 9.43, p = .22, CFI = 1.00, RMSEA = .03$ (90% Confidence Interval [CI]: .00, .06), and SRMR = .00. The model controlled for depression, neuroticism, closeness, relationships satisfaction, and gender. Solid arrows represent a significant pathway, whereas a dotted arrow represents a nonsignificant pathway.

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed).

Appendix B - Tables

Table 1. Bivariate Correlations among Model Variables (N = 531)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Observing	–												
2. Nonjudging	-.20***	–											
3. Acting with Awareness	-.20***	.45***	–										
4. Describing	.39***	.16***	.16***	–									
5. Nonreactivity	.27***	.04	.05***	.27***	–								
6. Anxious Attachment	.01	-.46***	-.35***	-.18***	-.14***	–							
7. Avoidant Attachment	-.12**	-.21***	-.18***	-.35***	-.07	.39***	–						
8. Benign Causal Attributions	-.03	.27***	.22***	.05	.10*	-.38***	-.36***	–					
9. Benign Responsibility Attributions	-.02	.25***	.16***	.10*	.12**	-.35***	-.28***	.74***	–				
10. Relationship Satisfaction	.02	.27***	.16***	.16***	.07	-.44***	-.50***	.35***	.33***	–			
11. Depression	.13***	-.43***	-.34***	-.20*	-.06	.31***	.14***	-.16***	-.20***	-.28***	–		
12. Closeness	-.12**	.10*	.11*	.10*	.03	-.23***	-.31***	.20***	.13**	.41***	-.04	–	
13. Neuroticism	.10*	-.54***	-.38***	-.22***	-.29***	.47***	.18***	-.28***	-.23***	-.22***	.55***	-.07***	–
M	3.20	3.37	3.22	3.35	3.10	3.23	2.63	3.73	4.23	5.18	1.99	4.14	2.29
SD	.58	.77	.61	.69	.63	.90	.95	.81	.97	.85	.42	1.44	.84

Note: * $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed).

Table 2. Criteria for Assessing Fit for Different Number of Classes

	2-Class	3-Class	4-Classes	5-Classes
AIC	4847.5	4693.7	4622.5	4583.2
BIC	4948.6	4864.7	4853.3	4873.9
Adjusted BIC	4876.1	4737.7	4681.9	4658.1
Entropy	.70	.82	.80	.78
Lo-Mendell-Rubin	-2534.1***	-2306.85***	-2257.3***	-2263.0
Likelihood Ratio Test				
N for each class	C1 = 236	C1 = 280	C1 = 119	C1 = 204
	C2 = 295	C2 = 207	C2 = 219	C2 = 13
		C3 = 44	C3 = 41	C3 = 39
			C4 = 152	C4 = 164
				C5 = 111

Note: *** $p < .001$ (two-tailed).

Table 3. Classification Table for Four-class Model

Class	<i>N</i>	Average posterior probability associated with each class			
		Judgmentally Observing	Low Mindfulness	Nonjudgmentally Aware	High Mindfulness
Judgmentally Observing	117	0.900	0.097	0.000	0.003
Low Mindfulness	213	0.045	0.867	0.011	0.077
Nonjudgmentally Aware	41	0.000	0.056	0.911	0.033
High Mindfulness	162	0.001	0.105	0.010	0.884

* $p < .05$. ** $p < .01$.

Table 4. Mean Comparisons between Latent Classes on Mindfulness Facets and All Model Variables (N = 531)

Variables	Judgmentally Observing	Low Mindfulness	Nonjudgmentally Aware	High Mindfulness
Observing	3.27 _a	3.13 _b	2.40 _c	3.45 _d
Describing	3.04 _a	3.23 _a	3.32 _a	3.74 _b
Acting with Awareness	2.79 _a	3.16 _b	3.78 _c	3.47 _d
Nonjudging	2.59 _a	3.39 _b	4.38 _c	3.67 _d
Nonreactivity	2.84 _a	2.98 _a	2.34 _b	3.63 _c
Anxious Attachment	4.11 _a	3.24 _b	2.34 _c	2.76 _d
Avoidant Attachment	3.19 _a	2.67 _b	2.28 _c	2.25 _c
Attributions	3.88 _a	4.03 _a	4.66 _b	4.64 _b
Depression	2.38 _a	1.98 _b	1.44 _c	1.86 _d
Closeness	3.41 _a	5.46 _b	5.41 _b	5.18 _b
Neuroticism	3.33 _a	2.34 _b	1.43 _c	1.66 _d

Note: Means sharing a subscript in a row indicate that they are not significantly different from each other.

Appendix C - Measures

Five Facet Mindfulness Questionnaire

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1 = never or very rarely true, 2 = rarely true, 3 = sometimes true, 4 = often true, 5 = very often or always true

1. When I'm walking, I deliberately notice the sensations of my body moving. (observing subscale)
2. I'm good at finding words to describe my feelings. (describing subscale)
3. I criticize myself for having irrational or inappropriate emotions. (nonjudging subscale, R)
4. I perceive my feelings and emotions without having to react to them. (nonreactivity subscale)
5. When I do things, my mind wanders off and I'm easily distracted. (acting with awareness subscale, R)
6. When I take a shower or bath, I stay alert to the sensations of water on my body. (observing subscale)
7. I can easily put my beliefs, opinions, and expectations into words. (describing subscale)
8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted. (acting with awareness subscale, R)
9. I watch my feelings without getting lost in them. (nonreactivity subscale)
10. I tell myself I shouldn't be feeling the way I'm feeling. (nonjudging subscale, R)
11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions. (observing subscale)
12. It's hard for me to find the words to describe what I'm thinking. (describing subscale)

13. I am easily distracted. (acting with awareness subscale, R)
14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.
(nonjudging subscale, R)
15. I pay attention to sensations, such as the wind in my hair or sun on my face. (observing subscale)
16. I have trouble thinking of the right words to express how I feel about things. (describing subscale, R)
17. I make judgments about whether my thoughts are good or bad. (nonjudging subscale, R)
18. I find it difficult to stay focused on what's happening in the present. (acting with awareness subscale, R)
19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it. (nonreactivity subscale)
20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing. (observing subscale)
21. In difficult situations, I can pause without immediately reacting. (nonreactivity subscale)
22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words. (describing subscale, R)
23. It seems I am "running on automatic" without much awareness of what I'm doing. (acting with awareness subscale, R)
24. When I have distressing thoughts or images, I feel calm soon after. (nonreactivity subscale)
25. I tell myself that I shouldn't be thinking the way I'm thinking. (nonjudging subscale, R)
26. I notice the smells and aromas of things. (observing subscale)

27. Even when I'm feeling terribly upset, I can find a way to put it into words. (describing subscale)
28. I rush through activities without being really attentive to them. (acting with awareness subscale, R)
29. When I have distressing thoughts or images I am able just to notice them without reacting. (nonreactivity subscale)
30. I think some of my emotions are bad or inappropriate and I shouldn't feel them. (nonjudging subscale, R)
31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow. (observing subscale)
32. My natural tendency is to put my experiences into words. (describing subscale)
33. When I have distressing thoughts or images, I just notice them and let them go. (nonreactivity subscale)
34. I do jobs or tasks automatically without being aware of what I'm doing. (acting with awareness subscale, R)
35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about. (nonjudging subscale, R)
36. I pay attention to how my emotions affect my thoughts and behavior. (observing subscale)
37. I can usually describe how I feel at the moment in considerable detail. (describing subscale)
38. I find myself doing things without paying attention. (acting with awareness subscale, R)
39. I disapprove of myself when I have irrational ideas. (nonjudging subscale, R)
- (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006)

Experiences in Close Relationship Scale—Revised

The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Mark your answer using the following rating scale:

1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree

Avoidance Subscale

1. I prefer not to show a partner how I feel deep down.
2. I feel comfortable sharing my private thoughts and feelings with my partner. R
3. I find it difficult to allow myself to depend on romantic partners.
4. I am very comfortable being close to romantic partners. R
5. I don't feel comfortable opening up to romantic partners.
6. I prefer not to be too close to romantic partners.
7. I get uncomfortable when a romantic partner wants to get very close.
8. I find it relatively easy to get close to my partner. R
9. It's not difficult for me to get close to my partner. R
10. I usually discuss my problems and concerns with my partner. R
11. It helps to turn to my romantic partner in times of need. R
12. I tell my partner just about everything. R
13. I talk things over with my partner. R
14. I am nervous when partners get too close to me.
15. I feel comfortable depending on romantic partners. R

16. I find it easy to depend on romantic partners. R
17. It's easy for me to be affectionate with my partner. R
18. My partner really understands me and my needs. R

Anxiety Subscale

1. I'm afraid that I will lose my partner's love.
2. I often worry that my partner will not want to stay with me.
3. I often worry that my partner doesn't really love me.
4. I worry that romantic partners won't care about me as much as I care about them.
5. I often wish that my partner's feelings for me were as strong as my feelings for him/her.
6. I worry a lot about relationships.
7. When my partner is out of sight, I worry that he or she might become interested in someone else.
8. When I show my feelings for romantic partners I'm afraid they won't feel the same way about me.
9. I rarely worry about my partner leaving me. R
10. My romantic partner makes me doubt myself.
11. I do not often worry about being abandoned. R
12. I find that my partner(s) don't want to get as close as I would like.
13. Sometimes romantic partners change their feelings about me for no apparent reason.
14. My desire to be very close sometimes scares people away.
15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.
16. It makes me mad that I don't get the affection and support I need from my partner.

17. I worry that I won't measure up to other people.

18. My partner only seems to notice when I'm angry.

(ECR-R; Fraley, Waller, & Brennan, 2000)

Relationship Attribution Measure

The following questions describe several things that your partner might do. Even if these things have never happened before, imagine, as best you can, your partner performing each behavior. Then read the statements that follow each behavior and indicate how much you agree or disagree with each of several different reasons for your partner's behavior.

1 = strongly disagree, 2 = disagree, 3 = disagree somewhat, 4 = agree somewhat, 5 = agree, 6 = strongly agree

Imagine that your partner criticizes something you say. How much would you agree or disagree with each of the following statements?

1. My partner's behavior was due to something about him/her (e.g. the type of person she/he is, the mood she/he was in)
2. The reason my partner criticized me is not likely to change
3. The reason my partner criticized me is something that affects other areas of our relationship
4. My partner criticized me on purpose rather than unintentionally
5. My partner's behavior was motivated by selfish rather than unselfish concerns
6. My partner deserves to be blamed for criticizing me

Imagine that your partner begins to spend less time with you. How much would you agree or disagree with each of the following statements?

1. The reason my partner began to spend less time with me is not likely to change

2. My partner's behavior was due to something about him/her (e.g. the type of person she/he is, the mood she/he was in)
3. My partner's behavior was motivated by selfish rather than unselfish concerns
4. My partner deserves to be blamed for spending less time with me
5. My partner spent less time with me on purpose rather than unintentionally
6. The reason my partner spent less time with me is something that affects other areas of our relationship

Imagine that your partner does not pay attention to what you are saying. How much would you agree or disagree with each of the following statements?

1. My partner's behavior was motivated by selfish rather than unselfish concerns
2. The reason my partner did not pay attention is something that affects other areas of our relationship
3. My partner's behavior was due to something about him/her (e.g. the type of person she/he is, the mood she/he was in)
4. The reason my partner did not pay attention is not likely to change
5. My partner did not pay attention on purpose rather than unintentionally
6. My partner deserves to be blamed for not paying attention to me

Imagine that your partner is distant and cool toward you. How much would you agree or disagree with each of the following statements?

1. The reason my partner was distant is not likely to change
2. The reason my partner was distant is something that affects other areas of our relationship
3. My partner was distant on purpose rather than unintentionally

4. My partner's behavior was due to something about him/her (e.g. the type of person she/he is, the mood she/he was in)
 5. My partner deserves to be blamed for being distant and cool
 6. My partner's behavior was motivated by selfish rather than unselfish concerns
- (RAM; Fincham & Bradbury, 1992)

Couples Satisfaction Index

1. Please indicate the degree of happiness, all things considered, of your relationship.

extremely unhappy (1)

very unhappy (2)

unhappy (3)

happy (4)

very happy (5)

extremely happy (6)

2. I have a warm and comfortable relationship with my partner

not at all true (1)

a little true (2)

somewhat true (3)

mostly true (4)

almost completely true (5)

completely true (6)

3. How rewarding is your relationship with your partner?

not at all (1)

a little (2)

somewhat (3)

mostly (4)

almost completely (5)

completely (6)

4. In general, how satisfied are you with your relationship?

not at all (1)

a little (2)

somewhat (3)

mostly (4)

almost completely (5)

completely (6)

(CSI-4; Funk & Rogge, 2007)

Neuroticism

1 = not at all, 2 = slightly, 3 = moderately, 4 = very much, 5 = extremely

1. Does your mood often go up and down?

2. Do you ever feel miserable for no reason?

3. Are you an irritable person?

4. Are your feelings easily hurt?

5. Do you often feel "fed-up"?

6. Would you call yourself a nervous person?

7. Are you a worrier?
8. Would you call yourself tense or "highly- strung"?
9. Do you worry too long after an embarrassing experience?
10. Do you suffer from nerves?
11. Do you often feel lonely?
12. Are you often troubled about feelings of guilt?

(EPQ-BV; Sato, 2005)

Patient Health Questionnaire

Over the last 2 weeks, how often have you been bothered by any of the following problems?

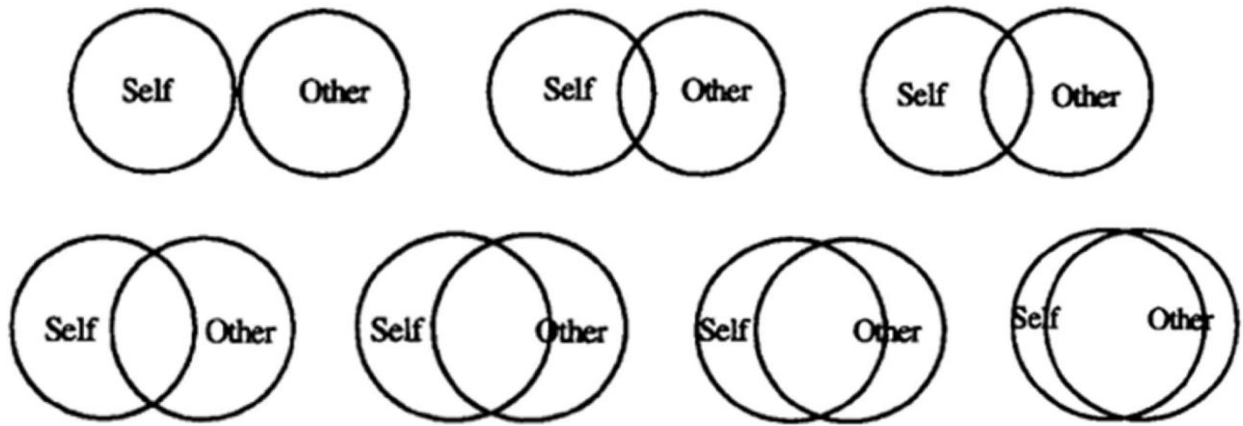
0 = not at all, 1 = several days, 2 = more than half the days, 3 = nearly every day

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down
7. Trouble concentrating on things, such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual
9. Thoughts that you would be better off dead or of hurting yourself in some way

(PHQ-9; Kroenke, Spitzer, & Williams, 2001)

Closeness

Please select the picture below which best describes your relationship.



(IOS; Aron, Aron, & Smollan, 1992)