

**Love and Mindreading: The Role of Empathic Accuracy
Perceptions on Relationship Satisfaction**

by

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Dedication

This thesis is dedicated to the people who have helped me better understand empathy and love during this thesis journey: my mom, Loretta Blasko, for always believing I could excel as a psychologist (and a writer and comedian...); my dad, David Blasko, for telling everyone that he was raising a “professional student” yet never questioning my path; my “other parents,” Diane and Doug Ducat, for rooting for me like their own daughter; my close friends, Alison Martin and Johnie Allen, who cheered me on and commiserated with me during the low points; and finally, my boyfriend Ryan Gannon, who never once appeared bored when the conversation shifted to my love of couple psychology and who insisted I apply for graduate school in the first place. I would not be where I am today without the kindness and support of my loved ones; thank you all.

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Abstract

Purpose: The current study investigated the correlations between objective, subjective, and dispositional empathy and relationship satisfaction. Highly satisfied relationships are linked with better health (Kiecolt-Glaser & Newton, 2001), yet empathic accuracy—an objective measure of correctly understanding a partner’s thoughts and feelings from moment-to-moment—has inconsistent associations with relationship satisfaction. As the importance of perceptions in social support has been identified and social cognition theory emphasizes perceptions, I investigated perceived partner empathic accuracy (PPEA) and perceived (self) empathic accuracy (PEA) along with dispositional empathic concern and perspective taking. We also investigated sources of information partners pay attention to when determining if their partner understood them (PPEA) or if they understood their partner (PEA). To my knowledge, this study is the first to explore PPEA and sources of empathic accuracy perceptions as they relate to relationship satisfaction.

Methods: Fifty-one couples were videotaped having a conflict discussion and partners separately watched the recording twice. During the first viewing, participants recorded specific thoughts and feelings from the original discussion. Participants also rated how well they believed their partner understood their thought/feeling and the influence different sources had on that assessment. During the second viewing, participants inferred what their partner had been thinking/feeling at those identified moments. Participants rated their confidence about their inference and rated the influence of different sources.

Results: PPEA was associated with relationship satisfaction while EA was not. Positive correlations were found between PPEA, PEA, and empathic concern for women along with perspective taking for men. Both PPEA and perspective taking accounted for significant variance in relationship satisfaction. For PPEA, tone of voice was influential for both men and women, as were facial expressions for men and body language for women. For PEA, facial expressions were influential for men while knowledge of past interactions was influential for women. Sources did not directly correlate with relationship satisfaction.

Conclusion: Support was found for all hypotheses, suggesting that feeling understood by one’s partner is more important than actually being understood in terms of relationship satisfaction. As men and women paid attention to different sources when perceiving empathy, clinical applications are indicated.

Chapter I

Introduction

With 90% of Americans pairing up as dyads in their lifetime, it's clear that romantic relationships are central in life (Cherlin, 2010). Reasons for the high prevalence of relationships include benefits such as higher levels of global happiness (Glenn & Weaver, 1981), personal well-being (Proulx, Helms, & Buehler, 2007), physical health (Hughes & Waite, 2009), and financial stability (Cutrona, Russell, Burzette, Wesner, & Bryant, 2011). However, these benefits depend largely on the quality of the relationship. Specifically, highly satisfied couples have the best outcomes for well-being (Kiecolt-Glaser & Newton, 2001; Røsand, Slinning, Eberhard-Gran, Røysamb, & Tambs, 2012; Schmalzing, Afari, Barnhart, & Buchwald, 1997).

High relationship satisfaction in couples has a broad range of physical and psychological advantages for both members of the couple over less satisfied relationships, ranging from improved cardiovascular and immune functioning (Kiecolt-Glaser & Newton, 2001), decreased mortality after heart attacks (Berkman, Leo-Summers, & Horwitz, 1992), and protection against emotional distress (Røsand et al., 2012). These health benefits may be due to typical relationship behaviors such as holding each other accountable for healthy diet and exercise, noticing health problems in the other which require medical evaluation, or offering social support in times of stress (Kiecolt-Glaser & Newton, 2001). Understandably, the factors underlying the overwhelming

health benefits of high relationship satisfaction are an important area of clinical focus. Since these physical and psychological benefits are more strongly associated with highly satisfied couples than with unsatisfied couples, relationship dynamics that contribute to satisfaction should be considered. Social support has been suggested as a link between well-being and relationship satisfaction (Bradbury & Karney, 2004; Kaul & Lakey, 2003).

Social Support

Social support is often defined as emotional, instrumental, or informational resources offered with the intent of helping another person (Devoldre, Davis, Verhofstadt, & Buysse, 2010). Social support within romantic relationships has been shown to have a robust association with relationship satisfaction (Cramer, 2004; Pasch, Bradbury, & Sullivan, 1997). In addition, social support has been considered an essential component to long-term relationship success (Bradbury & Karney, 2004). Similar to highly satisfied relationships, social support is linked to better health outcomes including lower morbidity and mortality (Berkman, Leo-Summers, & Horwitz, 1993; Cohen, Gottlieb, & Underwood, 2000; Gerteis & Schwerdtfeger, 2016).

Theoretically, one would assume increased social support to be linked to increased relationship satisfaction, but inconsistencies have been found. Specifically, an objective measure of social support—enacted support—has an inconsistent association with relationship satisfaction (Helgeson, 1999; Kaul & Lakey, 2003). Enacted support is defined as the measureable actions taken with the intent to help another person (Haber, Cohen, Lucas, & Baltes, 2007). For example, enacted support could include a couple member lending their partner money when finances are tight or the number of times one

partner waters the other partner's house plants while they're away. Such helpful actions would be thought to bolster relationship satisfaction, yet research suggests they do not always do so (Kaul & Lakey, 2003). This suggests that while social support may be critical for relationships, a person receiving frequent measurable support from their partner (e.g., cooking dinner, asking about their day) will not necessarily have higher satisfaction. This is alarming as current couple therapy treatments emphasize enacted support (Cohen et al., 2000); without knowing the missing link between social support and relationship satisfaction, treatment options will continue to be limited (Kaul & Lakey, 2003). Fortunately, an important subjective aspect of social support has been identified: perceived support.

Perceived support is the perception that one has available social support if needed or, if support was received, whether that support was satisfactory (Haber et al., 2007). Perceived support differs from enacted support in that the objective quantity of supportive behaviors does not matter; it only matters how the person receiving (or hoping to receive) the support interprets those actions. For instance, a person can believe their best friend would provide adequate support if needed during a stressful time, whereas a person with five close friends may not believe adequate help would be provided. Perceived support does not directly depend on the measurable amount of support available/provided.

Numerous studies have found that perceived support is more strongly associated with relationship satisfaction and well-being than is enacted support (Kaul & Lakey, 2003; Lemay, Clark, & Feeney, 2007; Qadir, Khalid, Haqqani, Huma, & Medhin, 2013). For example, Helgeson (1993) found that perceived support was a stronger predictor of

well-being and life satisfaction following a cardiac event than was received support. The explanation for this finding was that every person's needs vary and thus providing the exact same support for two people may not fulfill the needs of each person equally, thus received support did not correlate strongly with relationship satisfaction. In addition, the exact same support will be perceived differently by everyone, seen as adequate by some and minimal by others, thus making perceived support more influential for relationship satisfaction than received support. Similarly, Gerteis and Schwerdtfeger (2016) found that in social situations followed by rumination, the perception of supportiveness and warmth during the interaction was associated with increased heart rate variability, which is indicative of better health. In addition, perceived social support was overall linked with increased positive affect and decreased negative affect (Gerteis & Schwerdtfeger, 2016).

Although both perceived and enacted support are aspects of social support, the two variables only share a weak-to-moderate correlation (Barrera, 1986; Kaul & Lakey, 2003; Haber et al., 2007; Lakey, 2000; Sarason, Sarason, & Pierce, 1995). This suggests that the perception of adequate and available support is a different variable than objective received support (Barrera, 1986). With their differing associations to relationship satisfaction, the evidence suggests perceived and enacted support have differing roles when it comes to satisfaction and relationship dynamics.

To understand the differences between actual versus perceived support and relationship satisfaction, a social cognitive theoretical perspective can be applied. Social cognitive theory posits that our view of the world is filtered through our perceptions, including social perceptions of the self and our relationships with others (Lakey, 2000). These individualistic perceptions account for how the same event can affect two people

very differently, depending on how the event was perceived and processed by each person (Haber et al., 2007; Lakey, 2000). This means that the same amount of enacted support may be perceived as more helpful by someone with an overall positive social perception than by someone who has a more negative view of social interactions and perceives less support (Lakey, 2000). Indeed, people who perceive more support are more motivated to reach out to their social group and use that support, promoting healthy expression of emotions and higher perceptions of health (Yen, 2016; Zabalegui, Cabrera, Navarro, & Cebria, 2011). Therefore, social cognitive theory can help account for how the same objective support given to two people can result in different outcomes due to perceptions of the supportive actions. This is useful when applied to couples, as there are two different perceptions to consider in each interaction between partners which may lead to differing levels of relationship satisfaction.

Since perceptions are implicated in the inconsistent association between social support and relationship satisfaction, the role of perception in other relationship variables warrants exploration. As objective measures of social support have not yielded consistent correlations to important relationship and health outcomes, while the perception of social support has shown strong associations with desired outcomes, it stands to reason that another variable associated with relationship satisfaction may also have important associations involving the *perception* of that variable. Using the social support literature as a framework combined with the direct application of social cognitive theory, other aspects of relationships can be explored which may better inform couples treatments and literature on couples' satisfaction. Specifically, perceptions of empathy may be a key variable.

Empathy

Carl Rogers (1957) theorized that successful relationships depend in part upon empathy. Indeed, a study found that aspects of empathy accounted for up to a third of relationship satisfaction (Davis & Oathout, 1987). Rogers' (1957) definition of empathy encompassed understanding another person's inner experiences in the current moment almost as if those were one's own experiences. There are many different conceptualizations of empathy ranging from simply caring about others, to perspective taking, to making inferences about the internal states of others (Barnes, 2014). While the various definitions of empathy are debated in the literature (Barnes, 2014; Coplan, 2011; Devoldre et al., 2010) the current study uses a commonly accepted definition of empathy as the attempt to understand another person's thoughts and emotions from moment-to-moment, similar to Rogers' original conceptualization (Devoldre et al., 2010; Ickes, 2001; Rogers, 1957).

As the core of empathy is seeking to understand others, empathy is an essential element in fostering trust, intimacy, and openness in relationships. Social support is considered related to empathy in that helping behavior often follows understanding another person's (often unspoken) need for help (Davis & Oathout, 1987). Empathy enables couple members to infer the content of their partner's inner experiences, thereby guiding successful conversations and interactions, providing validation, and facilitating emotional connection (Ickes & Simpson, 2001). Without the ability to infer the cognitive and affective world of another person—especially one's partner—interactions within the couple would likely be unpredictable, ineffective at creating connections, and would prevent emotional support and understanding.

For couples specifically, understanding a partner's inner experiences is widely considered by laypersons to be evidence of true connection and understanding. For instance, in modern Western society it is a cultural ideal for couples to be able to finish each other's sentences, suggesting they are so connected and "in sync" as to predict their partner's thoughts and feelings before they are spoken. Therefore, understanding a partner's thoughts and emotions is widely regarded as a sign of an ideal relationship.

However, people often experience times when they believe they're metaphorically on the same page as their partners, when in reality, their minds are not only on different pages, but in different books entirely. This disconnect between feeling in-tune with one's partner while not actually understanding one another is a common and disconcerting experience which can lead to misunderstandings. Miscommunication—a big contributor to not feeling understood—is among the main reasons couples become dissatisfied (Doss, Simpson, & Christensen, 2004). As partners often feel misunderstood (Doss et al., 2004), further exploration of the components involved in relationship satisfaction and partners' empathy/understanding is indicated. Consequently, adding to the literature on this topic could help develop empirically-based therapy treatments aimed at increasing relationship satisfaction. Better treatments to help couples become more satisfied would indirectly lead to a healthier, happier population (see Kiecolt-Glaser & Newton, 2001).

To further the knowledge base, the current study investigated the accuracy with which couple members understood their partners' emotions and thoughts, partners' belief in their own accurate empathy, and the degree to which partners perceived they had been understood. In addition, couple members' general tendencies toward compassion and perspective taking were considered. This study also investigated potential reasons for

differences between objective and subjective empathic accuracy in the form of informational sources, as well as how all of the aforementioned variables connected with relationship satisfaction.

Empathic Accuracy (EA)

As empathy is here defined as the attempt to understand another person's transient inner experiences, the successfulness of that attempt is called empathic accuracy (EA). Empathic accuracy is an objective measure of a person's ability to correctly infer the specific content of another person's thoughts and feelings from moment-to-moment (Ickes, 1993, 2001). More simply, EA has been referred to as the overall successfulness of "everyday mind reading" attempts (Ickes, 2001). Empathic accuracy differs from many measures of empathy used in the literature because it is an objective assessment of empathic ability, unlike self-report measures which are subjective. To avoid confusion, throughout this paper "EA" will refer to the objective measure of accuracy for thought/feeling inferences while "accurate empathy" or "accurate understanding" will refer to the general concept of inferring another person's inner experiences, typically based on subjective measures; this will allow clarity in referencing the subjective concept of accurate empathy versus the objective measure of accuracy. While self-report measures of empathic understanding are easier to obtain, they have several limitations involving differential motivation.

Self-reported measures of empathic ability occasionally have gender biases in favor of women (Ickes, Gesn, & Graham, 2000). Although traditional wisdom suggests that women's intuition and empathic abilities should naturally be stronger than men's, research has shown that to be largely a byproduct of research methodology. In past

studies, women only scored higher than men in self-reported empathic ability when they were aware empathy was being measured (Eisenberg & Lennon, 1983; Graham & Ickes, 1997; Ickes et al., 2000). This gender difference in scores is suspected to be due to demand characteristics: when empathic ability is brought to conscious thought, it may create the social demand for women to take on their traditional role of being emotionally understanding (Graham & Ickes, 1997; Klein & Hodges, 2001). In an evaluative setting, especially when being compared to men, women may feel motivated to fulfill their social role (Graham & Ickes, 1997; Ickes, 2000; Klein & Hodges, 2001). However, when given monetary motivation for higher accuracy, men and women performed equally well regardless of priming (Klein & Hodges, 2001). Therefore, a bias in favor of women's empathic ability has appeared when women were motivated to fulfill an empathetic role, which was especially noticeable in self-report measures.

Even certain objective measures of empathic ability can be biased in favor of women. When watching scripted videotaped interactions to measure EA, women had a slight advantage over men in understanding nonverbally communicated emotions, a result often found in the communication literature (Eisenberg & Lennon, 1983; Graham & Ickes, 1997; Hall, 1978). However, the gender difference was nearly negated when the conversation being viewed was naturalistic instead of scripted (Graham & Ickes, 1997). The gender difference likely lessened because spontaneous conversation results in unintended nonverbal cues, ones that have not been prepared ahead of time, which assists in understanding emotion (Rosenthal & De Paulo, 1979). These results suggested that men and women have nearly equal ability to pick up on spontaneous nonverbal behaviors to understand the inner experiences of another, with women having a slight advantage.

As scripted conversations are not typical of daily interactions, Graham and Ickes's (1997) study suggested that men and women have similar capabilities when it comes to "decoding" everyday conversations, including understanding the unspoken thoughts and feelings of partners.

Due to gender biases from social role priming, incentive motivation, and scripted interactions, EA is best and most typically measured using the Dyadic Interaction Paradigm developed and revised by Ickes and colleagues (1990, 1993, 1997, 2001). When using this paradigm, the mention of empathy is often avoided at the start, limiting the demand characteristic for women to be more empathic via priming. In addition, as there are no demand characteristic motivations to do well, neither gender has an advantage over the other in terms of motivation or incentive. Since the interactions coded in this paradigm use an unscripted conversation between partners, the gender bias in favor of women interpreting nonverbal behaviors in scripted interactions is also eliminated.

In this paradigm, members of a couple have a discussion and then separately watch the recorded video of their interaction, writing down their exact thoughts and feelings they recall having in the initial discussion at different points in time. The times at which each thought or feeling occurred is recorded. Then, each couple member watches the tape a second time and stops at the exact time points in which their partner recorded a thought or feeling. Each couple member then records what they believe their partner was thinking or feeling in that moment. These inferences are compared to the original partner's report and scored by raters for content accuracy. The resulting EA scores are an objective measure of how accurately each couple member understood their partner over

the course of the conversation. Each partner's EA score is considered generalizable as to how well they accurately understand each other in everyday life.

The rate of accurately inferring a person's specific thoughts and feelings is typically between 13% and 45% (Soto & Levenson, 2009) with an average of 26% accuracy among couples (Simpson, Orina, & Ickes, 2003). Despite these relatively low rates, understanding one's partner is an assumed integral part of relationship satisfaction. After all, couple members who don't understand when their partner is feeling highly emotional likely won't be able to attend to their partner appropriately, thus neither partner may feel satisfied. Attempting to understand and know more about each other as partners can foster closeness and satisfaction in intimate relationships (Harvey & Omarzu, 1997). Likewise, understanding one's partner can lead to acceptance of one another, which is associated with higher self-esteem and relationship satisfaction (Cramer, 2003).

It seems natural to assume that higher EA should be associated with higher relationship satisfaction since understanding one's partner's thoughts and feelings seems intuitively important for a happy relationship. Interestingly, the association between EA and relationship satisfaction is an unreliable one. Some researchers have found a positive correlation between satisfaction and EA when empathic accuracy is equated with emotional support and closeness (Simpson, Ickes, & Blackstone, 1995; Simpson et al., 2003). However, a correlation between EA and relationship satisfaction appears to be the exception, not the rule (Cohen, Schulz, Weiss, & Waldinger, 2012; Cramer & Jowett, 2010; Sillars & Scott, 1983; Thomas, Fletcher, & Lange, 1997).

Many potential variables have been investigated in relation to this unstable link between EA and satisfaction, including level of education, overall empathic ability,

motivation, relationship duration, and gender. Higher education and elements of dispositional empathy have been inconsistently associated with a positive relationship between higher EA and relationship satisfaction (Ickes, Stinson, Bissonnette, & Garcia, 1990; Thomas et al., 1997). Some relationship characteristics (i.e., relationship-threatening situations and relationship length) have been shown to moderate a negative association between EA and satisfaction. There can be “motivated inaccuracy” when partners do not wish to acknowledge a threat to their relationship, thus they unintentionally avoid inferring their partner’s true (and potentially hurtful) thoughts and feelings (Simpson et al., 1995; Simpson et al., 2003). In addition, newer relationships tend to have slightly better EA due to partners being more jointly focused on solving relationship problems, whereas longer term couples aren’t as intently focused on each other (Thomas et al., 1997). However, while some associations and moderators have been found, none appear to consistently and significantly explain the lack of association between relationship satisfaction and EA.

The missing correlation between EA and relationship satisfaction creates a problem with couple therapy treatment. Current treatments to improve couples’ satisfaction aim to increase understanding between partners, essentially increasing their EA. Again, while these methods appear intuitively useful, the above research suggests these treatments may be less effective due to their flawed basis on improving empathic accuracy as a way to increase satisfaction. It is essential that therapy treatments are efficacious and based on empirical support; therefore, it is important to further investigate the factors at play between empathic understanding and relationship satisfaction. Specifically, the social support literature combined with EA’s inconsistent findings with

relationship satisfaction highlight a similar yet profoundly different variable: perceived partner empathic accuracy (PPEA).

Perceived Partner Empathic Accuracy (PPEA)

Given what we know, PPEA is a variable unique to this study and is defined as a couple member's perception that their partner correctly understood their thoughts and feelings in that moment; it is not about a partner *actually* being accurate about the couple member's specific thought/feeling content. This subtle yet important difference could be the key to understanding the paradoxical lack of association between EA and relationship satisfaction. If a person perceives that their partner understands them in that moment—regardless of whether the partner actually does—relationship satisfaction may be positively impacted. Conversely, if a couple member does not feel understood by their partner—even if their partner truly did understand them—the couple member may experience lower relationship satisfaction. In short, it is perception that is key. Despite PPEA having “EA” in the name, PPEA refers to the perception of a partner's accurate empathy as a subjective measure, NOT the perception of their partner's objective EA score. To our knowledge, no studies have investigated the associations between PPEA, EA, and relationship satisfaction as defined in the current study. However, studies using similar variables such as perceived empathic effort (Cohen et al., 2012) and perceived empathy (Cramer & Jowett, 2010) are relevant.

Cohen and colleagues (2012) investigated the association between EA, perceived motivation to understand one's partner, and relationship satisfaction. Perceived motivation was referred to as perceived empathic effort and was assessed by the degree to which participants rated their partner as being motivated to understand their thoughts and

feelings during moments of high affect (both positive and negative). This differs from the current study in that Cohen and colleagues studied perceived effort rather than perceived accuracy. Cohen's prediction was that increased perceptions of a partner trying to understand—compared to the partner's actual EA—would correlate more strongly with relationship satisfaction.

Indeed, Cohen and colleagues (2012) found that both men's and women's satisfaction was positively correlated with perceived empathic effort from their partner when positive emotions were being expressed, and women's satisfaction (but not men's) was still correlated with perceived empathic effort during moments of negative affect. The correlation between empathic effort and relationship satisfaction was stronger for women than for men, suggesting a partner's perceived effort to understand is more important to women's satisfaction than men's. This is consistent with a past finding that 50% of women's satisfaction could be accounted for by the perception of their partner's attempted perspective taking (Long & Andrews, 1990). In addition, men felt more satisfied when women perceived them as putting forth empathic effort (Cohen et al., 2012). This suggests that for women, perceiving a partner's empathy is most important to satisfaction, whereas for men, having their empathic efforts be recognized is most important. It is important to note that no gender differences were found in levels of EA, perceived empathic effort, or relationship satisfaction.

Surprisingly, Cohen and colleagues (2012) found a correlation from both EA and perceived empathic effort to relationship satisfaction. Although both links were found, the association between perceived empathic effort and relationship satisfaction was stronger than that between EA and relationship satisfaction. This supports the hypothesis

that the perception of empathy has a greater effect on relationship satisfaction than does actually understanding one's partner.

Cohen and colleagues' (2012) perceived empathic effort is similar to PPEA because both variables evaluate the level of empathy a couple member perceives from their partner. However, perceived empathic effort and PPEA are different in that perceived empathic effort only measures the belief in a partner's *attempt* to understand, whereas PPEA measures the belief of how accurately a partner understood. It is this idea of perceiving one's partner as *correctly* understanding, not just making an effort to understand, which expands upon past research.

The idea of PPEA being more meaningful than EA in terms of relationship satisfaction finds partial support in a study by Cramer and Jowett (2010). Self-report data from 149 heterosexual romantic couples was used to investigate the associations between accurate empathy, perceived empathy, and relationship satisfaction. While the first two variables sound similar to EA and PPEA, Cramer and Jowett (2010) defined them differently. Perceived empathy was defined as "the extent to which a person perceives they are understood by another" (Cramer & Jowett, 2010); however, they went on to distinguish it from "how accurately someone seems to know or understand us" (p. 328) which is the current study's definition of PPEA. In addition, the researchers defined accurate empathy as knowing a partner's overarching views on different aspects of life, measured by taking the absolute difference between the actual view and the partner's inference. Cramer and Jowett's (2010) definition of accurate empathy measures knowledge of partners' overall life perspectives, which differs from the typical definition of moment-to-moment understanding of a partner's thoughts and feelings. Therefore,

both Cramer and Jowett's definition of accurate empathy and their self-report measurement of that construct differ from the current study. However, as Cramer and Jowett's study has somewhat similar variables and overall analysis of associations, their findings still lend relevant support to the current study.

Cramer and Jowett (2010) found that perceived empathy was associated with greater relationship satisfaction for both men and women. In addition, accurate empathy was not associated with relationship satisfaction after controlling for assumed/actual partner similarities. In other words, feeling understood by one's partner was closely linked to satisfaction whereas being understood had no correlation with satisfaction. Lending further evidence for perceived empathy's beneficial relationship effects was the finding that perceived empathy was linked to less conflict and less depression, which in turn were linked to greater relationship satisfaction. These results suggest the perception of being understood—regardless of actually being understood—has a stronger association with relationship satisfaction than EA, which lends support for PPEA as a stronger correlate of satisfaction than EA.

Empathic accuracy's inconsistent association with relationship satisfaction, combined with perceptions of accurate empathy's robust, albeit little studied, correlation with relationship satisfaction raises the question of how EA and PPEA will be linked. As both variables involve an evaluation of accurate empathy (actual vs. perceived in partner), EA and PPEA may be correlated. On the other hand, based on the social support literature's weak-to-moderate correlation between enacted and perceived support, EA and PPEA may be weakly correlated or not linked at all. Due to mixed evidence and PPEA

not having been studied in this context before, the current study will simply explore the association between PPEA and EA without predictions for outcomes.

Since PPEA's association to EA and relationship satisfaction is unknown, several correlations will be explored. Due to the social support evidence suggesting perception plays a large role in satisfaction, it is predicted that PPEA will be positively correlated with relationship satisfaction. Empathic accuracy's association with relationship satisfaction is expected to be a minimally positive correlation or nonexistent, based on past research. If EA is positively correlated to relationship satisfaction, it is predicted that PPEA will mediate the association between EA and relationship satisfaction. This mediation may account for why EA is not always linked to relationship satisfaction yet variables related to perceived empathy are. This mediation hypothesis extends the work of Cohen and colleagues' (2012) study of similar variables in that PPEA is predicted to be the link between EA and relationship satisfaction if EA is associated with satisfaction..

Perceived Empathic Accuracy (PEA)

As the saying goes, "Understanding is a three-edged sword: your side, their side, and the truth" (Straczynski, DiTillio, & Green, 1994). If seen from the perspective of the couple member inferring their partner's thoughts and feelings, there are three sides to consider. In between the objective "truth" (the current couple member's EA) and the partner's perception of how well the current couple member understood the partner's thoughts (their partner's PPEA, "their side") there is one more variable: perceived empathic accuracy (PEA), considered "your side" when doing the inferring. Perceived empathic accuracy is a person's perception of their own accurate empathy, regardless of how accurate that person really is or how accurate their partner perceives them to be. As

this is self-reported accuracy, it should not be confused with the objective measure of EA; rather, PEA is the subjective measure of one's own accurate empathy. Put another way, PEA is how correctly a person believes they inferred their partner's thoughts and feelings.

In general, people have shown to be poor judges of their own empathic abilities, so much so that self-reported accurate empathy and EA have not yet been found to be correlated (Ickes et al., 1990). In fact, Ickes and colleagues (1990) stated people's poor gauge of their own EA is "one of the most fascinating and compelling foci for future theory and research" (p. 739). In an effort to examine all "edges" of the interaction between couple members, PEA will be explored in association with PPEA and EA. Due to PEA and PPEA both being measures of perceived empathic accuracy within a couple (one for the self, the other for one's partner), it is likely they will be correlated. Based on Ickes and colleagues' (1990) findings, it is likely that PEA and EA will not be correlated; however, no other studies were identified that either supported or dismissed this claim. Therefore, the current study will not make predictions about the association between PEA and EA.

Dispositional Empathy: Empathic Concern and Perspective Taking

Dispositional empathy—considered a measure of one's natural empathic ability—is another aspect of empathy studied in conjunction with relationship satisfaction (Davis & Oathout, 1987; Long & Andrews, 1990). Specifically, two main components of dispositional empathy are implicated: empathic concern and perspective taking. Empathic concern refers to the tendency to take on the feelings of another person, sometimes defined as feeling compassion or sympathy for another person's emotional state (Davis &

Oathout, 1987). Perspective taking is the tendency to cognitively take on another person's perspective (Davis & Oathout, 1987). Put together, the emotional and cognitive elements make up empathy. The tendency to take on others' emotional or cognitive perspectives is considered part of one's personality, hence "dispositional" empathy. As both elements of dispositional empathy involve a type of perspective taking (which necessarily involves how one perceives the other person's perspective to be), empathic concern and perspective taking may have associations with PPEA.

Looking at relationship satisfaction as influenced by the perception of a partner's interactions, Davis and Oathout (1987) investigated perspective taking and empathic concern in 132 heterosexual romantic relationships. The researchers found that empathic concern was most strongly associated with relationship satisfaction, followed by perspective taking. However, perspective taking didn't influence satisfaction in shorter relationships (i.e., under 6 months), whereas empathic concern was associated with relationship satisfaction regardless of relationship length. Altogether, Davis and Oathout's (1987) model accounted for a third of the variance in relationship satisfaction for both males and females, suggesting that aspects of empathy involving understanding one's partner have a huge impact on relationship satisfaction.

In another study of dispositional empathy, Long and Andrews (1990) found that perspective taking was significantly and positively associated with relationship satisfaction in married couples. For both husbands and wives, perspective taking accounted for 8% and 4% of their partners' relationship satisfaction, respectively. In addition, couple members' perceptions of their partners' perspective taking score was positively associated with relationship satisfaction. The perception about one's partner

being able to take one's perspective accounted for 22% of marital satisfaction for men and a whopping 50% for women. These results suggest that not only is the ability to understand a partner's perspective important, it's also important to be perceived as having that ability. Perceptions of perspective taking are similar to PPEA and may have similar associations with relationship satisfaction.

The above studies on dispositional empathy—specifically the components of empathic concern and perspective taking—all involve elements of empathy, perception, and relationship satisfaction. Therefore, dispositional empathy will be explored in the current study. Specifically, correlations will be explored between empathic concern, perspective taking, PPEA, PEA, and EA. No predictions will be made as to outcomes, although the literature suggests that at least one component of dispositional empathy should be associated with a perception of empathy variable (PEA or PPEA).

Sources of Empathic Accuracy Perceptions

PEA and PPEA are distinct variables and likely have distinct correlations with each other and other measures, yet both are measured at the same time points in the same interaction. This raises the question of how we may get two different measure outcomes when using the same information from a moment in time. For example, a couple member may perceive themselves as being highly accurate at understanding their partner at a particular point in time, yet their partner may not perceive that couple member as being accurate at all. In other words, how are couple members potentially getting different perceptions of empathy (self and partner) from the exact same available information?

To answer the question of how PEA and PPEA may have different outcomes despite being based on the same information, the current study will investigate the

sources that influence PEA and PPEA. “Sources” refer to types of incoming present-moment information obtained from a partner (Hall & Mast, 2007), which in this study includes tone of voice, word choice, facial expression, and body posture. In the literature, types of sources may be referred to as “cues” (Hall & Mast, 2007) and the way information is obtained (verbal vs. visual) may be referred to as “channels” or “modalities” (Gesn & Ickes, 1999). For simplicity, the word “source” will be used as a blanket term referring to information gained from a partner during a social interaction. Couples pay attention to these sources in order to understand what is occurring in an interaction. For example, aggressive or tense body language may be a useful source to attend to when determining if a partner is angry.

Indeed, research has suggested that people pay closer attention to nonverbal sources (e.g., body language) than verbal sources (e.g., vocal tone) when trying to infer someone’s emotions (Hall & Mast, 2007). Conversely, people tend to pay closer attention to verbal sources (e.g., word choice) when trying to infer someone’s thoughts (Hall & Mast, 2007). Past studies have shown women are slightly better than men at understanding nonverbal sources (Eisenberg & Lennon, 1983), however those differences are nullified when the conversation being analyzed is naturalistic, such as those in the current study (Graham & Ickes, 1997). Therefore, some sources may be more important than others for inferring a partner’s inner experiences, depending on the context.

One source-related factor that impacts perception is the cumulative context in which the inferences are derived. For example, if a person has had past interactions with someone, the person may develop a schema to guide their perceptions of the other person based on what they’ve seen over time (Gesn & Ickes, 1999; Ickes, 1993; Lakey, 2000).

This fits within a social cognitive perspective as relational context (the ways in which you know the person with whom you're interacting) have a huge influence on perceptions of that person, oneself, and the overall social situation (Kaul & Lakey, 2003; Lakey, 2000; Sarason et al., 1995). As the current study only includes couples who have been together at least six months, the couple members have had time to develop ways of relating to their partners. This relational context is a sum of their history of interactions with each other and guides their knowledge of how each other likely thinks, feels, and acts (Helgeson, 1993; Kaul & Lakey, 2003; Lakey, 2000). In this way, past interactions act as a guide for whether one has understood their partner and whether one's partner has understood them. As relationships provide long-term histories of interactions from which to make schema-driven inferences, the fifth source that will be included is "knowledge of past interactions."

Past research on EA suggests that auditory sources (e.g., tone, word choice) tend to lead to more accurate inferences than nonverbal sources (e.g., facial expressions, body language; Gesn & Ickes, 1999; Hall & Mast, 2007; Zaki, Bolger, & Ochsner, 2009). Although the different sources affect EA, it seems likely that a person's PEA is affected as well since their perception of the situation is affected by context clues such as sources (Lakey, 2000). As PEA and PPEA are similar in nature because both assess perceptions of accurate empathy, it may be that auditory sources produce higher perceptions of accuracy than visual sources for both variables. However, if the most influential sources differ between PPEA and PEA, sources may provide the key as to how PPEA and PEA differ despite using the same context and information. In other words, the difference between the two variables may lie in what sources partners pay attention to when

evaluating the two types of empathic perception. For instance, partners may pay closer attention to one source (e.g., facial expression) to decide whether they correctly understand what their partner is thinking or feeling (PEA), yet pay attention to a different source (e.g., tone of voice) to decide whether they've been understood by their partner (PPEA).

Knowledge of which sources most strongly influence PPEA and PEA could potentially answer the question of why PPEA and PEA (hypothetically) correlate differently with EA and relationship satisfaction. However, as there is little information on perceptions of accurate empathy in regards to sources, we will explore the differing sources related to PEA and PPEA predicting that the most influential source for each will differ, although no specific predictions on the exact sources will be made. In addition, as different sources may contribute to both PEA and PPEA (and thus potentially relationship satisfaction), we will examine the unique contribution of PEA's and PPEA's sources to relationship satisfaction.

Summary

With so many people entering romantic relationships in their lifetimes, knowledge of the factors involved in couples' happiness is of primary importance. As there are significant benefits to having highly satisfying relationships, increasing couples' relationship satisfaction should be a major clinical focus. Understanding one's partner's thoughts and feelings—empathic accuracy—is a large part of relationships and the miscommunication that pushes couples to seek therapy; however, EA is rarely associated with relationship satisfaction in empirical research. Instead, theory would suggest that the perception that one's partner has correctly understood—perceived partner empathic

accuracy—is more strongly associated with relationship satisfaction. If PPEA is a better predictor of relationship satisfaction than EA, a clinical focus of couple therapy should be teaching how to convey accurate empathy to one’s partner instead of simply learning to be accurate. As EA has an inconsistent association with relationship satisfaction, PPEA may mediate the association between EA and relationship satisfaction. Therefore, PPEA may be the missing link between EA and satisfaction.

As PEA and PPEA are likely positively correlated with each other because they both measure perceptions of accurate empathy, investigating the sources of each could help explain the difference between them. Examining the sources could pinpoint which sources are most influential to a partner’s evaluation of perceived empathy, both self and partner. As a result, therapy could focus on how couples can utilize the correct sources to maximize satisfaction. This small yet potentially important shift in how empathy is evaluated by partners could add greatly to relationship satisfaction, a main goal of couple therapy.

Hypotheses

It is hypothesized that:

1. Empathic accuracy will be minimally, if at all, associated with relationship satisfaction.
2. Perceived partner empathic accuracy will be positively correlated with relationship satisfaction.
 - a. If EA is associated with relationship satisfaction, based on the literature reviewed above, it may be that PPEA will mediate this association.

3. Although there are no specific predictions, the associations between PPEA, PEA, empathic concern, perspective taking, and EA will be explored. It is expected that simply by the interdependent nature of couples, PPEA and PEA will likely be associated with each other; however, the associations with EA and components of dispositional empathy are less clear.
4. Without specific predictions, the unique contributions of PPEA, PEA, and components of dispositional empathy to relationship satisfaction will be explored.
5. It is expected that the most influential sources will differ between PPEA and PEA, based on the literature reviewed above. Therefore, the sources of PPEA and PEA will be compared with each other.
 - a. This study will also examine the unique contribution of each source of PEA and PPEA to relationship satisfaction.

Chapter II

Methods

Participants

A power analysis was conducted using the GPower computer program (Faul & Erdfelder, 1992) to determine an adequate sample size with a power of .95 and an alpha level of .05. Using small to medium effect sizes, the results suggest that a sample of 125-175 participants (62-88 couples) would be reasonable for this study.

The final sample for the study was 51 couples. At least one couple member was an undergraduate currently taking a class in the Behavioral Sciences Department at the University of Michigan—Dearborn. Although recruitment occurred during the Fall 2015 and Winter 2016 semesters, there was not an active subject pool during the Summer 2016 semester, resulting in a smaller than expected sample size. Several efforts were made to recruit additional participants from enrolled Behavioral Sciences classes; however, these efforts did not prove fruitful. Given the timeline for the project, data collection had to be stopped at 51 couples. It should be noted, however, that data collection for this study will continue following the completion of this thesis project.

In order to be eligible for the study, participants were required to be at least 18 years old, in a heterosexual relationship of at least 6 months, and with both partners willing to participate in the study. Ages ranged from 18 to 64 years old ($Mdn = 19.75$, $M = 22.21$, $SD = 7.46$). The average relationship length was 3.04 years ($Mdn = 2$ years,

range = 5 months to 41.33 years, $SD = 5.77$ years). It should be noted that the eligibility criteria specified that participants must be in a relationship for a minimum of 6 months, however one member of a couple reported a relationship length of only 5 months (their partner stated 6 months). In order to preserve sample size, this couple was left in the data set. Demographic data for the participants can be found in Table 1. As can be seen, this was an ethnically/racially diverse sample with over a fourth of participants reporting Hispanic or Arab ethnicity (12% and 20%, respectively) and over 23% of participants reporting their race as African American or other. Additionally, only a minority of the sample was married (12%).

Measures

Demographics

Participants completed a demographics questionnaire which gathered data regarding their gender, age, year in school (if applicable), ethnicity, race, marital/relationship status, anniversary of the relationship, and number of children (see Appendix A).

Empathy

Empathic accuracy. Empathic accuracy was measured using the thought/feeling coding procedure following the Dyadic Interaction Paradigm (Ickes, 1993, 2001; see Appendix B for thought/feeling record and Appendix C for the thought/feeling inference form). Trained research assistants compared one partner's recorded thoughts/feelings with their partner's inferences of those thoughts/feelings. Those compared thoughts/feelings and inferences were coded for accuracy by independent raters. The coding used a 0 to 2 scale, with 0 meaning the content is basically different, 1 meaning

that the content is similar but not identical, and 2 meaning basically the same content. A couple member's EA score was calculated by averaging their 0 to 2 scores across their thought/feeling inferences by several independent raters then averaging across raters. This methodology has been used successfully with couples in past research (Ickes, 1993, 2001; Simpson et al., 2003).

Four raters were trained over the course of a month to code EA. Three sets of five practice couples' thought/feeling records were used for training purposes. Booster meetings were held with all four coders present to train for reliability. The overall reliability for the EA raters in the current study was $r = .92$, which was excellent. In addition, removal of any one of the raters would have brought the overall alpha value down.

The mean EA score for participants was 13.32 ($SD = 13.26$) with scores ranging from 0 to 57.5 where higher scores indicate greater EA. When the data was split by gender, the mean for women was 13.52 ($SD = 14.98$) and the mean for men was 13.11 ($SD = 11.43$). The average number of thoughts/feelings recorded per participant was 6.99 ($SD = 3.66$). It should be noted that the difference in thought/feeling response amounts between men and women was not significant ($t(100) = .78, p = .44$). It has been suggested that EA scores calculated using less than five thought/feeling inferences are unreliable (Ickes, 2001); however, we chose to include all participants' EA data to preserve sample size.

Perceived partner empathic accuracy. To measure PPEA, a column on the thought/feeling record asked participants to rate on a scale of 1-10 (with 1 being *not at all* and 10 being *completely*) how well their partner correctly understood their recorded

thought or feeling (see Appendix B). This is a new addition to the thought/feeling record developed for this study and has not been fully validated. The PPEA score was calculated by averaging the 1 to 10 ratings across all thought/feeling records for each participant. The average PPEA for the entire sample was 6.74 ($SD = 2.10$). When split by gender, the average PPEA score for women was 6.36 ($SD = 2.23$) and for men the average was 7.13 ($SD = 1.89$).

Perceived empathic accuracy. To measure PEA, we used a similar confidence rating question during the inference portion of the study as was used to measure PPEA. Using the same 1 to 10 point scale, after each inference about the partner's thought or feeling was made we asked participants to rate how well they correctly understood their partner's thought or feeling (see Appendix C). This variable was calculated by averaging this 1 to 10 rating across all thought/feeling inferences for each participant. The average for the entire sample was 7.06 ($SD = 1.73$). When split by gender, the average PEA score for women was 6.57 ($SD = 1.91$) and the average for men was 7.55 ($SD = 1.37$).

Relationship satisfaction

Relationship satisfaction was measured using the Dyadic Adjustment Scale (DAS; Spanier, 1976; see Appendix D). The scale consists of 32 items that measure agreement on various topics and general relationship happiness. The range of the scale is 0 to 151 with higher scores indicating greater relationship satisfaction. A meta-analysis of 91 studies using the DAS suggested the DAS has high reliability and validity in a variety of populations, making it a viable test for undergraduate relationship satisfaction (Graham, Liu, & Jeziorski, 2006). In the current study, the DAS items were slightly modified for

inclusion of participants who may not be married but are nonetheless in committed relationships (e.g., handling family finances was changed to handling finances).

It should be noted that 29 participants did not complete one item on the DAS (item 21, “How often do you and your partner fight/quarrel?”). Examination of the paper and pencil measure showed that this item was formatted in such a way that participants likely overlooked the item while completing the measure. It is not likely that it was the content of the item which led to the missing data. Examination of the DAS scores with and without this item showed similar results (with item 21, $M = 118.59$, $SD = 13.36$; without item 21, $M = 116.08$, $SD = 13.11$; $r = .99$, $p < .001$). Therefore, in order to preserve sample size, data analysis was conducted without item 21 included. Cronbach’s alpha for the DAS in the current sample was .88.

Dispositional empathy

Dispositional empathy was measured using the Interpersonal Reactivity Index for Couples (IRIC; Peloquin & Lafontaine, 2010; see Appendix E). The IRIC was developed for couples from the original Interpersonal Reactivity Index (IRI; Davis, 1980), a measure of cognitive and emotional empathy assessing four subscales (empathic concern, perspective taking, fantasy, and personal distress). The IRIC consists of 13 questions assessing two of the original IRI subscales: empathic concern and perspective taking. IRIC scores range from 0 to 52 with higher scores indicating higher levels of empathy. The IRIC demonstrated good reliability and validity when used in a sample of young heterosexual couples and had adequate stability over 18 months (Peloquin & Lafontaine, 2010). In the current sample, the alpha for the empathic concern subscale was .48 and the perspective taking subscale was .82. Mean scores for empathic concern were 23.76 ($SD =$

3.21) and for perspective taking were 15.96 ($SD = 4.51$). Examination of the item correlations on the empathic concern subscale showed low correlations among the items (r values ranged from $-.06$ to $.38$). Statistics on each item did not suggest that removal of any items would significantly improve the overall reliability of the subscale. Therefore, the empathic concern results could be considered unreliable and should be interpreted with extreme caution.

Positive and negative affect

To test for potential effects of the conflict discussion task, the PANAS was included as a manipulation check. Positive and negative affect were measured using the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988; see Appendix F). The measure consists of 20 emotion words which were rated based on the degree to which the participant was feeling them at that current moment. The rating was on a scale of 1 to 5, with 1 being *not at all* and 5 being *extremely*. The PANAS demonstrated good reliability and validity in a sample of undergraduates (Watson et al., 1988); in the current study, Cronbach's alpha was $.82$. The average positive affect score before the conflict discussion was 30.09 ($SD = 8.79$) and after the thought/feeling inference task was 29.54 ($SD = 9.36$). This difference in positive affect over time was not significant ($t(100) = .88, p = .38$). The average negative affect score before the conflict discussion was 14.39 ($SD = 5.56$) and after the thought/feeling inference task was 14.07 ($SD = 5.76$). Similar to positive affect, the difference in negative affect over time was not significant ($t(100) = .74, p = .46$).

Sources of empathic accuracy perceptions

After each thought/feeling was recorded, participants rated aspects of their partner's behavior which influenced their perceptions of either their own understanding or their partner's understanding, called sources. These sources included tone of voice, word choice, facial expression, body language, and knowledge of past interactions. During the initial thought/feeling recording, participants rated each source for how much it influenced their rating of their partner's level of understanding (PPEA), using a 1 to 5 scale (1 being *little to no influence* and 5 being *very influential*; see Appendix G). The same 1 to 5 scale was used during the thought/feeling inference portion, this time referring to how influential each source of partner behavioral information was to the participant's own perceived understanding (PEA; see Appendix H).

Procedure

Prior to data collection, this study was reviewed by the IRB and given approval. Couples were recruited using fliers (see Appendix I) and a listing on the online university subject pool for introductory psychology students (SONA; see Appendix J). Behavioral Sciences students either received SONA credit or extra credit per instructor prior approval and all other participants were able to enter a lottery for a \$50 Visa giftcard. The lottery collected only the participant's name and email address, neither of which was linked to their participant ID in the study. Lottery winners were drawn every 38 entries and the winner was contacted via email for their mailing address, to which the giftcard was sent. During the course of data collection, only one lottery drawing was conducted.

Upon both couple members' arrival to the research laboratory, participants were asked if they were there to participate in the DisCUSS Study (Discussion of Couples'

Understanding and Social Support). If only one partner arrived, they were given one opportunity to reschedule and the criteria for eligibility were emphasized, including that both partners must be present. If both couple members were present and responded affirmatively to coming for the DisCUSS Study, written informed consent was obtained from both members of the couple. The informed consent document described how participants would be videotaped having a conflict discussion and would complete measures while watching the tape afterward; the document also explained how the data would be kept in a secure location and never linked to their name. Participants were then verbally screened for eligibility in the study; in order to be eligible, participants had to be in a heterosexual relationship of at least six months and able to read, write, and understand English (see Appendix K for verbal screening script). If the couple did not meet criteria after signing the consent form, both participants received credit and were thanked for their time.

Following informed consent and meeting eligibility requirements, couple members were asked to individually fill out study questionnaires without discussing or sharing answers with their partner. Participants first completed a basic demographic questionnaire as well as the DAS. After the questionnaires' completion, one research assistant administered the PANAS while the other research assistant unobtrusively went to another lab room (connected by a small antechamber) and compared each participant's DAS scores for items 1 through 15 which assessed agreement/disagreement on a variety of topics. Two topics—a main topic and a back-up—were chosen for the dyadic interaction task, AKA the conflict resolution discussion. These topics were chosen based on DAS items which both couple members reported they had moderate disagreement on,

thus they had mutual disagreement about the topic. To avoid risks beyond those associated with everyday life (such as a couple having an intense fight about a topic they typically avoid), the chosen DAS topics carefully avoided items which were areas of severe disagreement (i.e., rated a 4 or 5 on the DAS by either couple member). When couples reported very little disagreement on the DAS, one of their slightly disagreed upon topics was chosen at random.

When participants finished the PANAS, the second experimenter reentered the room and introduced the conflict discussion task. Couple members were told that based on their questionnaires, it appeared they had some disagreement about [Topic X]. Each person was prompted to give their “side” of what the disagreement was about; research assistants were trained to keep partners from arguing at this point in the study. After each couple member gave their uninterrupted side of the disagreement, the couple was asked to solve the identified problem through discussion. They were informed of the conversation being videotaped to use later in the study and were instructed not to discuss topics involving illegal behavior, intent for physical violence or self harm, or sensitive health information. The couple was also given a second topic to discuss in case they completed talking about the first topic before time was up. Participants were informed that a white noise machine in the hallway would be turned on for added privacy. After answering any questions the participants had, the videorecording equipment (a camcorder with an attached microphone) was started and the researchers left the room. After closing the door, the researchers turned on the white noise machine in the antechamber, started a stop-watch, and went inside the smaller lab room for the duration of the 10 minute

discussion task. Similar tasks have been used previously in couples research (Cohen et al., 2012; Ickes, 2001; Ickes et al., 1990; Simpson et al., 2003; Thomas et al., 1997).

To ensure the safety of the participants, the research assistants monitored the couple through a two-way mirror in the other room. The research assistants were trained to stop the protocol if any of the following occurred: one of the couple members became so aroused during the discussion task that they got up from their seated position, one partner touched the other in an aggressive way, profanity was used in an aggressive way, or a partner raised their voice in aggression toward the other. In any of those situations, the couple would be interrupted and debriefed to reduce distress, safety would be assessed, and the couple would be dismissed (with appropriate compensation of credit). As none of the participants exhibited any of these signs of aggression, this part of the protocol was never implemented.

After ensuring no signs of aggression occurred between the couple members during the conversation, the research assistants interrupted the discussion after 10 minutes. The researchers then introduced the thought/feeling recall procedure. Couples were told that they would be separated to watch the video of their interaction two times, and for the first viewing their task would be to inform the researchers at any point in which they recalled having a specific thought or feeling during the conversation. It was emphasized that couple members should not report thoughts or feelings in reaction to watching the video or something they believed they “should have” thought or felt in hindsight. The researchers explained that participants would also be assessing the level to which they felt understood by their partner and rating aspects of the interaction which influenced that assessment. After answering any questions, one participant went with a

research assistant to the smaller lab room, thus separating the participants while they each viewed the video with a research assistant. Participants were positioned so they could not see each other through the two-way mirror and the white noise machine was left on to ensure participants could not hear each other through the wall for the remainder of the study tasks, thus ensuring privacy to answer honestly. Participants were also reassured that their answers would be kept confidential from their partners.

After going to separate rooms, each participant was reminded to only report thoughts or feelings at the time of the discussion and to tell the researcher to stop the tape immediately when the thought or feeling occurred. Participants then watched the videotaped conversation and told the researcher to pause whenever they recalled a specific thought or feeling. The researcher would write down the timestamp of the paused tape, whether the participant was recording a thought or a feeling, and the thought/feeling content reported by the participant. This thought/feeling was then repeated back to the participant to check for accuracy and amended as needed. The participants were then asked to rate how well they believed their partner correctly understood their thought/feeling on a scale of 1 to 10 (with 1 being *not at all* and 10 being *completely*).

In addition, for each thought/feeling record participants were asked to rate different aspects of the interaction for how much influence those aspects had on their rating of their partner's accuracy. These aspects—sources—solely referred to their partner's behavior, not their own behavior or reactions. These sources included tone of voice, word choice, facial expression, body language, and knowledge of past interactions, all of which were explained to participants. Participants rated each source for how much each source influenced them when rating their partner's level of understanding. Source

ratings used a scale of 1 to 5 (1 being *little to no influence* and 5 being *very influential*). This source rating process was completed for each thought/feeling recorded.

During the thought/feeling recall procedure, if two minutes passed without the participant identifying any thoughts/feelings the research assistant paused the tape and asked, “Did we miss any thoughts/feelings?” to prompt the participant. If the participant said no thoughts/feelings were missed, the research assistant prompted the participant again every two minutes that passed without anything being recorded. If the participant acknowledged that some thoughts/feelings had been identified, the researcher would rewind the tape to those moments and record them.

After the first video replay finished, each couple member’s research assistant transferred the time stamps—times at which their participant stopped the tape to record a thought/feeling—onto a blank thought/feeling inference sheet. It is important to note that only the time stamp—not the content of the thought or feeling—was transferred. The research assistants then gave each other the newly time-stamped thought/feeling inference forms, thus each researcher ended up with a blank time-stamped form corresponding to the opposite partner’s recorded thoughts/feelings.

Each couple member was then introduced to the inference task. Participants were told to watch the video a second time, but this time the researcher would pause the tape wherever the other couple member had paused it to record a thought or feeling. The current couple member’s task was to infer what their partner was thinking or feeling at that moment. After each thought/feeling was inferred, participants were asked how well they believed they correctly understood their partner in that moment, using the same 1 to 10 scale as before. Participants then rated the five sources (still regarding their partner’s

behaviors, not their own) for how much influence each had on the accuracy of the inference they made. Essentially, participants rated how important each source was in determining what their partner was thinking or feeling. Again, participants went through each step of this process for every thought/feeling recorded.

After finishing the second viewing of the video, participants were introduced to the last part of the study. This part consisted of questionnaires measuring dispositional empathy and affect. After completing these measures, researchers would open their lab doors to signal that they were finished. Upon both participants finishing the questionnaire, the couple members were reunited in the main room and debriefed (see Appendix L for debriefing script). Each couple member was given a sheet of resources to find follow up care if they experienced distress following their participation (see Appendix M). Participants were thanked for their time and shown out of the lab.

Chapter III

Results

Before any analyses were completed, the data were cleaned and checked for normalcy. Besides the missing data from item #21 on the DAS described previously, nine other items on the DAS were identified in which a participant did not complete the item. For those data points, a mean substitution was conducted. There was also one participant who failed to complete the second-to-last page of the DAS; given that this error was more systematic than missing a single item, this individual's overall DAS score (which was also identified as a significant outlier) was substituted with that gender's mean score on the DAS. In addition, for the sources of empathic accuracy perception data, there was one individual who did not rate each of the sources for PPEA and PEA. In this case, a corrected average (based on the source data they did rate) was used in analysis.

In terms of univariate outliers, there were at least two outliers identified on each measure (range was 2 to 6 outliers per measure). An analysis of multivariate outliers was conducted and a total of nine multivariate outliers were identified. Analyses were run with and without these outliers and results were in similar directions for both genders. Therefore, to preserve sample size it was decided not to exclude any outliers.

An examination of descriptive statistics showed that all but one of the study variables demonstrated statistically significant skew. Data transformations (reflections and natural logs) and winsorizing were conducted to attempt to correct for skew. There

were two variables where correction did not reduce skew (EA and relationship satisfaction), however the remainder of corrections reduced skew by a statistically significant amount. Analyses were conducted with both the corrected (relationship satisfaction range = 93 to 141, EA range = 0 to 37.5) and uncorrected data (relationship satisfaction range = 81 to 141, EA range = 0 to 57.5) and results showed similar magnitude and direction. Therefore, for ease of interpretation, uncorrected data were used in the study analyses.

Since the current study utilized couples data, the assumption of independence was not met. In order to help protect against this, separate analyses were run for men and women in the sample. Due to small sample size, analyses which allowed for dyadic data were not used. While separate analyses mitigate some of the interesting data that can capture partners' dynamics within the relationship, they also protect against Type 1 error.

Associations between demographic characteristics of the participants and study variables were examined. No differences were found between racial/ethnic groups on study variables. However, effects for women were identified for relationship duration and age ($r = .95$). Specifically, age and relationship duration were negatively correlated with empathic concern ($r = -.29, p < .05$ and $r = -.37, p < .01$, respectively). These associations were not statistically significant for men, although the correlation between age and empathic concern approached significance ($r = -.26, p = .07$). Therefore, in analyses that involved empathic concern, age was controlled for in women. It was decided that one of these variables (not both) would be controlled for, given their high correlation ($r = .95, p < .001$).

As the analyses were split by gender, gender differences were examined among study measures. While there was no significant difference between men's and women's EA scores ($t(100) = .15, p = .87$), the gender difference for PPEA scores approached statistical significance ($t(100) = 1.90, p = .06$) such that men believed their partners were more accurate at understanding their thoughts/feelings, more so than women.

Additionally, the difference in PEA scores between genders was statistically significant ($t(100) = 2.98, p < .01$) with men perceiving themselves as being more accurate in inferring their partner's thoughts and feelings than women. Means and standard deviations for the various sources of accurate empathy for PPEA and PEA split by gender can be found in Table 2. Comparisons of means did not reveal any gender differences between sources of PPEA and PEA, meaning that men and women did not differ significantly in which sources they used to assess their partner's understanding of them or their understanding of their partner. There were, however, differences noted within genders between PPEA and PEA sources, meaning that men and women showed a difference in which sources they used to determine their own understanding versus their partner's understanding, as seen in Table 2.

To test the first hypothesis—that objectively rated EA would be minimally associated with relationship satisfaction—a correlation was conducted. Correlations among relevant study variables can be found in Table 3. As shown in the table, there was not a statistically significant association between EA and relationship satisfaction for either men or women.

The second hypothesis predicted that PPEA would be positively correlated with relationship satisfaction. As also shown in Table 3, this hypothesis was supported. There

was a significant positive association for both men and women between PPEA and relationship satisfaction, meaning that the more couple members felt as if their partner understood them, the greater their relationship satisfaction. Post-hoc *r*-to-*z* transformations revealed that the association between relationship satisfaction and PPEA was marginally stronger for men than women ($z = 1.81, p = .07$, two-tailed). The second component of this hypothesis was that PPEA might mediate the association between EA and relationship satisfaction. As EA was not significantly associated with either relationship satisfaction or PPEA, this part of the hypothesis was not tested.

The third aim of the study was to explore the associations between PPEA, PEA, EA, empathic concern, and perspective taking. Although no specific associations were expected, it was found that for both men and women there was a statistically significant positive association between PPEA and PEA. As shown in Table 3, this positive association means that couple members believed they understood their partners to a similar degree that they believed their partners understood them. In terms of dispositional empathy, empathic concern was significantly positively correlated with PPEA for men ($r = .35, p < .05$) and women ($r = .38, p < .01$). For perspective taking, however, there was a difference between men and women: women's perspective taking was significantly associated with PPEA ($r = .35, p < .05$) and men's perspective taking was significantly associated with PEA ($r = .33, p < .05$). This means that women's tendency to take another person's cognitive perspective correlated with women's belief that they were understood by their partner. In contrast, men's tendency to take on another person's perspective was significantly associated with their belief in their own accurate understanding.

To test the fourth hypothesis—examining the unique contribution of PPEA, PEA, and components of dispositional empathy to relationship satisfaction—a linear regression was conducted. For men, the linear regression used the simultaneous entry of PPEA, PEA, empathic concern, and perspective taking. Due to women's statistically significant correlation between age and empathic concern, a separate linear regression was conducted with age entered in the first step and the above four predictor variables in the second step. The results of these analyses showed that of the four predictors, only PPEA and perspective taking had a statistically significant unique contribution to relationship satisfaction (see Table 4). This effect was present for both men and women even after controlling for age for women. Using the semi-partial correlation, PPEA was found to uniquely account for 28.5% of variance in relationship satisfaction for men and 7% for women. Similarly, perspective taking accounted for 10% of the variance in relationship satisfaction for men and 9% for women. Therefore combined, PPEA and perspective taking predicted between 16% and 38.5% of relationship satisfaction.

The fifth hypothesis explored how the sources of empathic accuracy perceptions impacted both PPEA and PEA. While there were no specific expectations for source types, it was predicted that there would be a difference between the sources which most influenced PPEA and PEA. To test this hypothesis, linear regressions were conducted separately for PPEA and PEA with each of the five source variables being simultaneously entered in the first step. The results of these analyses for PPEA and PEA are presented in Table 5 and Table 6, respectively. As can be seen in Table 5, tone of voice significantly predicted PPEA for both men and women. In addition, facial expression was another significant predictor of PPEA for men; body language was a significant predictor of

PPEA for women. This means that the partner's tone of voice influenced both men's and women's belief that their partner was (or was not) understanding them in that moment. Additionally, men's belief about being understood by their partner was related to women's facial expressions, while women used men's body language as an indicator of how well they believed they were being understood. To compare gender differences in source correlations for PPEA, post-hoc *r-to-z* transformations were conducted and revealed no statistically significant difference between genders for use of sources for PPEA, except facial expression for men which approached significance ($z = 1.67, p = .09$, two-tailed).

As shown in Table 6, for PEA facial expression was the only significant predictor for men, meaning that paying attention to women's facial expressions influenced men's beliefs about how well they understood their partner. For women, PEA was significantly predicted only by knowledge of past interactions, although word choice approached significance. This means that women's belief in how well they understood their partner was primarily influenced by past interactions with their partner. Post-hoc *r-to-z* transformations revealed that for women, PEA was more strongly correlated with past interactions ($z = -2.51, p = .01$, two-tailed) and word choice ($z = -2.25, p = .02$, two-tailed) than for men

The second part of the fifth hypothesis was to examine the association between the source variables of PPEA and PEA and relationship satisfaction. However, the only source variable that approached statistical significance was men's partner's facial expressions for PPEA ($t(50) = 1.77, p = .08$). Therefore, no sources relating to either PPEA or PEA were significantly linked to relationship satisfaction for men or women.

Chapter IV

Discussion

Given that the majority of adults enter into romantic relationships and highly satisfied couples have increased overall happiness and health (e.g., Kiecolt-Glaser & Newton, 2001), the basic underpinnings of relationship satisfaction are an important area of research. Empathy, long theorized to be essential to relationship satisfaction, has been empirically linked to satisfied relationships (Cramer & Jowett, 2010; Davis & Oathout, 1987); however, within the current literature there are wildly different conceptualizations of what empathy entails (e.g., objective empathy, perceived understanding, trait empathy, etc.) and this leads to mixed results within the literature. This is problematic as current treatments in couple therapy center on increasing understanding/empathy and communication between partners. Furthermore, outcome research suggests accurately understanding a partner's thoughts and feelings does not always correlate with higher relationship satisfaction (Cramer & Jowett, 2010; Sillars & Scott, 1983; Thomas et al., 1997). Models of social support and social cognitive theory can provide a framework to study these different types of empathy as it may be that self-report measures of perception may be more useful and informative than objective measures of empathy. Therefore, this study aimed to better understand which types of empathy, including perceived partner, self, and objective empathic accuracy as well as dispositional empathy, associated with relationship satisfaction. In addition, consistent with social cognitive

theory, sources of information derived from the social interaction were examined for influence on empathy.

Based on the current literature, it was expected that PPEA would be positively associated with relationship satisfaction, whereas EA would likely not be associated at all with relationship satisfaction. Correlations were explored between all empathy variables with the prediction that at least PPEA and PEA would be positively associated. Empathy variables' and sources' unique contributions to relationship satisfaction were also explored. In addition, the sources of PPEA and PEA were compared with the prediction that the most influential source for each would be different.

In general, the results of the current study supported the hypotheses, suggesting that feeling understood by one's partner is more important for relationship satisfaction than is actually being understood. Indeed, having one's thoughts or feelings correctly understood in the moment (using an objective rating) was not linked to relationship satisfaction at all. These results were not surprising as past studies have found that EA was not associated with relationship satisfaction even when controlling for factors such as marriage length or assumed similarity between partners (Cramer & Jowett, 2010; Thomas et al., 1997).

The null findings on EA in this study may be influenced by the current sample's low levels of EA (13% compared to the average 26% seen in couples; Simpson et al., 2003), although another study reported EA averages between 13% and 47% (Soto & Levenson, 2009). One potential explanation for the low levels of EA in the current study could be "motivated inaccuracy" (Simpson et al., 1995). Avoiding accuracy when a partner may be having relationship threatening thoughts/feelings can be useful in the

short term and this phenomenon is a common occurrence, especially in “newer” couples typically found in college samples (Ickes & Simpson, 2001). However, the procedure in the current study specifically avoided high-threat topics and given that affect following the conflict discussion was unchanged, it is unlikely that motivated inaccuracy accounts for the below average EA scores.

A more likely possibility for the current sample’s low EA is poor engagement in the study tasks. The student population used for this study may not have been fully engaged with the conflict resolution discussion task and subsequent thought/feeling inference task. This possibility gains support from the lack of difference in positive and negative affect scores at the beginning and end of the study, suggesting that the couples were not engaged enough to have an emotional reaction to conflict. Additionally, past studies have shown grade point average and level of education are associated with higher EA (Ickes et al., 1990; Thomas et al., 1997), therefore the low EA in the present study is most likely attributable to poor engagement and not lack of ability or intelligence to comprehend the EA task.

Despite the potential reasons for low overall EA, the current study suggests that as unlikely as it sounds, objectively/actually understanding one’s partner truly may not be associated with having a satisfying relationship. In fact, the results of the current study suggest that EA isn’t even related to other measures of empathy. This discrepancy between objective reality and subjective satisfaction can be viewed from a social cognitive perspective in which all social interactions (such as conversations between couple members) are filtered through subjective perceptions. Perceptions of empathic

accuracy, both of the self and partner, turned out to be fruitful variables to investigate in terms of objective versus subjective empathy and relationship satisfaction.

Indeed, believing one had been understood by one's partner (PPEA) was positively associated with relationship satisfaction and other measures of empathy. Specifically, men and women who felt accurately understood by their partners also displayed higher confidence in their own empathic abilities, a stronger tendency to feel another person's emotions, and for women (and marginally for men) a stronger tendency to take someone else's cognitive perspective. Importantly, this study found a positive association between PPEA and relationship satisfaction for both men and women. This suggests that both couple members are happier in relationships where they feel understood by their partners. It appears that the perception, not the objective knowledge or act, is what counts in the idiosyncratic nature of relationships.

When investigating the importance of the perception of understanding, interesting gender differences were observed. For instance, men's perception of being understood contributed over one fourth of their relationship satisfaction. Women, however, were slightly more complex than men when it came to satisfaction, having only 7% of their relationship satisfaction accounted for by the perception of being understood. This is slightly surprising, as Cohen and colleagues (2012) found that perceived empathic effort was more strongly associated with women's satisfaction than men's. This discrepancy suggests there may be a difference between the concepts of perceived empathic effort (believing one's partner is trying to understand) and perceived partner empathic accuracy (believing one's partner truly does understand).

Besides PPEA, the only other empathy variable that predicted relationship satisfaction for both men and women was perspective taking. While no specific predictions were made about perspective taking's association to relationship satisfaction, previous studies support such a correlation. Davis and Oathout (1987) discovered that perspective taking was predictive of satisfaction when social support mediated the association. The researchers found that dispositional empathy led to supportive behaviors for one's partner, which in turn led to the partner's positive perception of those behaviors and ultimately relationship satisfaction. Therefore, partner perceptions helped mediate the link between perspective taking and relationship satisfaction. Additionally, evidence suggests that perspective taking is associated with decreased negative social support (Devoldre et al., 2010), indicating another potentially mediated link between perspective taking and relationship satisfaction.

Although this specific association was not part of the tested hypotheses for the current project, the proposed sequence of events—dispositional empathy, supportive behaviors, partner perceptions, then satisfaction—not only supports the current study's correlation between perspective taking and relationship satisfaction, it also lends support for why both perspective taking and PPEA were the only significant predictors of satisfaction. It is possible that the tendency to take a partner's perspective (whether accurately or not) may positively influence the other partner's perceptions of behaviors indicating empathy during the interaction (PPEA using sources) which may result in increased relationship satisfaction. Alternatively, it may be that satisfied partners have the assumption that happy couples understand each other, therefore they perceive that their

partner understands them and over time, both partners may develop the tendency to attempt to take each other's perspectives.

A difference between the current findings on dispositional empathy and those of Davis and Oathout (1987) is that the current study did not find a correlation between empathic concern (the other dispositional empathy variable) and relationship satisfaction. One reason behind the lack of significant findings for empathic concern might be due to the measure itself. The internal consistency of the empathic concern subscale was exceptionally low (.48) and the inter-correlation between items suggested that the items themselves were not working well together. Therefore, the empathic concern results are potentially unreliable. One reason for this might be that the wording of certain items was confusing. Some of the items in this subscale involved figures of speech (e.g., feeling "touched" and "soft-hearted") and several participants (who were not native English speakers) asked for clarification on those items. As it is not uncommon for the student population at this university to have English as a second language (and likely for their partners as well), it is possible that several participants completed the questionnaire without fully understanding those items. Currently there has been minimal research on the effects of variables such as language and culture for the IRIC; the measure's unknown generalizability is noted as a limitation by the researchers (Peloquin & Lafontaine, 2010).

Of the other empathy variables, the belief in one's own accurate understanding (PEA) was correlated with several main variables. Specifically, both men's and women's belief in their own accurate empathy was positively associated with stronger belief that their partner understood them, as well as an increased tendency to view thoughts from their partner's perspective. For men, confidence in their own accurate understanding

trended toward additionally being linked to higher relationship satisfaction, thus men were happier in relationships where they believed they understood their partners. This suggests that couple members often feel like they're on the same "page" as their partner in terms of understanding. For men, the sign of a successful couple may be mutual (perceived) understanding, especially (perceived) knowledge of their partner's thoughts—the common phrase "happy wife, happy life" would seem to require understanding one's wife/partner in order to do what makes the partner happy. Therefore, men feeling like they accurately understand their partner may be more strongly associated with their relationship satisfaction. Women, however, may encompass many more elements in what it means to be a successful couple—after all, there is no common phrase for "happy husband, happy life"—thus their satisfaction was not associated with this mutual understanding. This gender difference due to common ideas of what it means to be a good couple may also explain why PPEA accounted for more of men's relationship satisfaction than women's.

While the association between PEA and PPEA was expected since both variables measure perceptions of accurate empathy, there was a question of how they differed. Specifically, as PPEA and PEA were both subjective judgments based on a partner's behavior measured in the same moment, it begged the question of what information couple members were drawing from when making these perceptions. Therefore, sources of empathic accuracy perceptions were investigated.

The inclusion of source information in combination with perceived empathy was a unique aspect of this study. It was expected that couple members would pay attention to different sources of information from their partner depending on whether they were

looking for confirmation that they had correctly understood their partner (PEA) or confirmation that their partner had correctly understood them (PPEA). Indeed, there were some differences between the sources men and women used to infer PPEA and PEA.

For PPEA, both men and women considered their partner's tone of voice as a significant factor in feeling understood. This is not surprising, as several studies have found verbal sources to be central in partner understanding (Gesn & Ickes, 1999; Hall & Mast, 2007; Zaki et al., 2009). Tone of voice influencing PPEA suggests that a couple member could understand their partner completely yet speak in a certain tone of voice which communicates to their partner that the couple member doesn't understand them at all. Conversely, a couple member could have no idea what's on their partner's mind yet speak in a tone of voice which makes the partner feel understood. For PPEA, there was no significant difference between genders and their use of sources, meaning both considered their partners' facial expression to gauge whether they have been understood and both also used body language (not just women). This suggests that facial expressions and body language are a strong influence toward partners feeling understood. The use of visual sources for PPEA is interesting, as the literature on EA suggests that visual sources are the least influential when correctly inferring a partner's thoughts/feelings (Gesn & Ickes, 1999; Hall & Mast, 2007). While sources of EA were not measured in the current study, the current results on PPEA's nonverbal sources compared to past findings on EA's verbal sources suggest that visual sources may play a stronger role in feeling understood versus being understood. If visual sources matter more for PPEA than EA, couple therapy techniques should focus less on verbal communication and more on nonverbal elements of communication such as body language and facial expression.

For PEA, men and women relied on different sources to gauge their own level of accurate understanding. More so than men, women used knowledge of past interactions and word choice to determine if they had correctly understood their partners. This suggests that women are paying attention both to information provided in the moment and information beyond the current interaction when gauging how correctly they understand their partner in that moment. Women may be building up a schema of how to infer their partners' thoughts and feelings, knowledge which does not come directly from the information provided in the current moment but is built over time. This interpretation aligns with past findings which indicate perspective taking in longer relationships (i.e., longer than 12 months) is associated with relationship satisfaction (Davis & Oathout, 1987). This suggests that perspective taking is something which takes time to develop in relationships as a schema of perceived interactions is formed, thus one's perceived accuracy may increase over time. It's also possible that putting oneself in a partner's shoes is more meaningful for satisfaction as time goes on and the schema grows more complex.

In the case of PEA, neither gender used verbal sources as would be predicted by studies on EA (Gesn & Ickes, 1999; Hall & Mast, 2007; Zaki et al., 2009). Again, the difference in source type may be due to measuring perceptions of empathy, rather than true accuracy of empathy. As little research has been done on sources of perceived self or partner empathy, there is no indication of whether the current findings are due to different sources used when measuring perceptions or something else entirely.

Not only did the current study examine the types of sources couple members used to gauge if they understood their partner or if their partner understood them, it also

examined the direct association between relationship satisfaction and sources. Surprisingly, the only variable that even approached statistical significance for relationship satisfaction was men's use of facial expressions for PPEA. This suggests that while PPEA as a whole has an association with relationship satisfaction, the informational sources which influence PPEA do not appear to be directly associated with relationship satisfaction. This means that teaching couple members to pay attention to specific sources of information during interactions (e.g., tone of voice) may not be a direct method of increasing relationship satisfaction. However, as certain sources predict PPEA for both genders and PPEA predicts relationship satisfaction, sources may still indirectly influence satisfaction. While teaching control over sources does not appear to be a viable treatment option on its own, it might indirectly increase relationship satisfaction to help each gender pay attention to specific sources which make their partner feel most understood.

There are a number of clinical implications that can be garnered from the results of the current study. As feeling understood was found to be most associated with relationship satisfaction and tone of voice was influential for feeling understood for both men and women, therapy could hone communications training on tone of voice, not word choice or even accurate thought/feeling reflections. In addition, men's reliance on facial expressions as a primary source of both PPEA and PEA suggests that closer examination of facial expressions should be explored, perhaps using a detailed facial analysis. In the case of women believing they accurately understood their partners' thoughts/feelings, the main source was knowledge of past interactions; this presents a challenge for therapy, as a distressed couple's past interactions have likely been full of miscommunication and

negativity. One possible treatment change could be to use Cognitive Behavioral Therapy (CBT) to target the maladaptive thinking habit of mindreading. By using that CBT technique and analyzing several past incidents, the negative (and perception-based) schema of past interactions could begin to erode and a new, open schema could set the stage for clearer perceptions of understanding and thus relationship satisfaction.

This study had several limitations which may influence the results and their interpretation. First and foremost, the current study had a small sample size ($N = 51$ couples). This sample size was below the amount desired for full statistical power using small-to-medium effect sizes ($N = 62-88$ couples). It should be noted that data collection for this study will continue after the completion of this thesis until a sufficient sample size is reached; however, due to time constraints, the current analyses used a smaller sample size.

Secondly, the data collected was cross-sectional and therefore causal conclusions cannot be made about the associations between relationship satisfaction and empathy. Longitudinal data would be necessary to begin making inferences about the direction and causality of the associations between the various types of empathy and relationship satisfaction. For instance, we know that PPEA is significantly associated to relationship satisfaction for both men and women, yet we do not know the direction of this association. For example, it may be that people who are in more satisfying relationships start to feel more understood by their partner, or perceptions of being understood by one's partner precedes relationship satisfaction, or a third variable may drive the association (e.g., perhaps optimistic people tend to believe their partners understand them and tend to be more satisfied in their relationships). As PPEA is a relatively unexplored

variable in terms of relationship satisfaction, it requires further investigation using different types of data collection methods such as creating and validating a measure for perceived partner understanding or an *in vivo* measurement of PPEA and PEA.

Thirdly, the couples in the sample reported high levels of relationship satisfaction and therefore may not be representative of the typical couples who would present for couples-based treatment. It's possible that higher relationship satisfaction may lead to feeling understood by one's partner as well as feeling connected enough to accurately understand one's partner, which would not be the case for distressed couples. In addition, the student sample may not have been fully engaged in the study for any number of reasons (e.g., not enough incentive, sleep deprivation, the discomfort of having their partner participate in an unfamiliar laboratory setting), potentially leading to EA scores below the typical amount.

Lastly, data from dyads are interdependent by nature; as this study did not have a large enough sample size to use hierarchical linear modeling, analyses were split by gender to reduce bias. While splitting analyses by gender is a valid way to reduce the influence of interdependent data, interdependence could not be entirely eliminated or investigated. With a larger sample size, hierarchical linear modeling could be performed to more accurately assess relationship dynamics at both the individual and dyad levels.

Future directions for research are indicated, as the concept of PPEA in regards to relationship satisfaction has only begun to be explored. Future studies should conduct more detailed statistical analyses such as hierarchical linear modeling to more accurately examine interactions at the individual and dyad levels. A new power analysis should be conducted for statistical analyses at the dyad level, as the calculated power (125-175

individuals, 62-88 couples) reflects analyses at the individual level, as the analyses in the current study were split by gender. Future studies should also investigate other sources of PPEA, perhaps including more detailed facial analysis.

Despite the limitations of the current study, this work represents a crucial addition to the literature. Little is known about the effects of perceptions of partner empathic accuracy on relationship satisfaction and the current study sheds light onto the importance of perceptions in satisfying relationships. One strength of the current study is its use of naturalistic interactions between partners to more closely approximate how couples use empathy in everyday relationship interactions. Another strength of this study is its inclusion of source data to investigate the “how” behind perceptions of partner’s accurate empathy, which is the next step toward purposefully increasing PPEA. Overall, this study’s assessment of numerous empathy variables, especially perceived empathic accuracy of the partner and self, bridges gaps in the literature between types of empathy, correlates of relationship satisfaction, and perception as an important subjective measure of relationship dynamics. With continued research, the basis of PPEA may be found and empirically-supported treatments could be developed to increase the perception of understanding in relationships.

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Table 1*Demographic Statistics by Gender*

Demographic Variable	Male		Female	
	%	<i>n</i>	%	<i>n</i>
Race				
White	74.5	38	78.4	40
Black/African American	7.8	4	5.9	3
Other	17.7	9	15.7	8
Ethnicity				
Hispanic	13.7	7	9.8	5
Arab	21.6	11	19.6	10
Other	64.7	33	70.6	36
Year in College				
Freshman	27.5	14	43.1	22
Sophomore	25.5	13	31.4	16
Junior	15.7	8	9.8	5
Senior	11.8	6	5.9	3
Not Answered	19.6	10	9.8	5
Marital Status				
Married	11.8	6	11.8	6

Table 2*Source Means and Standard Deviations for PPEA and PEA by Gender*

Source Type	Men				Women			
	PPEA		PEA		PPEA		PEA	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Tone of Voice	3.40	.99	3.52	.96	3.44	.80	3.79**	.87
Word Choice	3.46	1.00	3.39	.84	3.45	.80	3.65 [†]	.83
Facial Expression	3.71	.87	3.90	.80	3.70	.77	3.85	.72
Body Language	3.36	.90	3.57 [†]	1.02	3.20	.92	3.52*	1.03
Knowledge of Past Interactions	3.92	.90	3.75 [†]	.89	3.92	.73	3.91	.89

Note. PPEA = Perceived Partner Empathic Accuracy; PEA = Perceived Empathic Accuracy. Significant differences between PPEA and PEA sources within gender are in bold face. * $p < .05$, ** $p < .01$, [†] $p < .10$.

Table 3*Study Variable Correlations by Gender*

	DAS	EA	PPEA	PEA	EC	PT
DAS	--	-.05	.66***	.30*	.29*	.47***
EA	.08	--	-.13	.19	.14	-.04
PPEA	.40**	.18	--	.33*	.35*	.24 [†]
PEA	.01	-.02	.44***	--	.15	.33*
EC	.36**	.00	.38**	.16	--	.45***
PT	.49***	.02	.35*	.12	.43**	--

Note. Correlations above the diagonal are for men and below the diagonal are for women. Statistically significant results are in bold face. DAS = Dyadic Adjustment Scale; EA = Empathic Accuracy; PPEA = Perceived Partner Empathic Accuracy; PEA = Perceived Empathic Accuracy; EC = Empathic Concern; PT = Perspective Taking. * $p < .05$; ** $p < .01$; *** $p < .001$, [†] $p < .10$.

Table 4*Empathy Variables' Unique Contribution to Relationship Satisfaction by Gender*

	Variable	B	SE B	β	t	Part	R ²
Men							.54
	PPEA	3.74	.70	.60	5.34***	.53	
	PEA	-.06	1.05	-.01	-.05	-.01	
	Empathic Concern	-.38	.53	-.08	-.71	-.07	
	Perspective Taking	.98	.31	.37	3.12**	.32	
Women							.34
	PPEA	2.16	.98	.33	2.20*	.27	
	PEA	-1.44	1.08	-.18	-1.33	-.16	
	Empathic Concern	.38	.53	.11	.722	.088	
	Perspective Taking	1.00	.40	.34	2.49*	.30	

Note. Women's results controlled for age with age entered in the first step and the empathy variables entered in the second step. R^2 at step one was .01 and not significant. Statistically significant results are in bold face. PPEA = Perceived Partner Empathic Accuracy; PEA = Perceived Empathic Accuracy. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5*Source Predictors of PPEA by Gender*

	Variable	B	SE B	β	t	Part	R ²
Men							.43
	Tone of Voice	1.01	.34	.52	2.92**	.33	
	Word Choice	-.31	.29	-.16	-1.06	-.12	
	Facial Expression	.70	.32	.32	2.17*	.24	
	Body Language	-.13	.26	-.06	-.50	-.06	
	Knowledge of Past Interactions	-.00	.25	.00	-.00	.00	
Women							.27
	Tone of Voice	.93	.46	.37	2.02*	.26	
	Word Choice	-.37	.40	-.15	-.94	-.12	
	Facial Expression	-.83	.56	-.32	-1.48	-.19	
	Body Language	1.18	.42	.53	2.80**	.36	
	Knowledge of Past Interactions	.39	.42	.14	.93	.12	

Note. Statistically significant results are in bold face. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 6*Source Predictors of PEA by Gender*

	Variable	B	SE B	β	t	Part	R ²
Men							.26**
	Tone of Voice	.18	.24	.14	.74	.09	
	Word Choice	.11	.26	.08	.43	.06	
	Facial Expression	.71	.31	.46	2.30*	.29	
	Body Language	-.05	.22	-.04	-.24	-.03	
	Knowledge of Past Interactions	-.05	.21	-.04	-.26	-.03	
Women							.51***
	Tone of Voice	.17	.31	.09	.56	.06	
	Word Choice	.70	.36	.34	1.96 [†]	.21	
	Facial Expression	-.24	.40	-.10	-.60	-.06	
	Body Language	.31	.24	.19	1.26	.13	
	Knowledge of Past Interactions	.71	.30	.37	2.34*	.25	

Note. Statistically significant results are in bold face. * $p < .05$; ** $p < .01$; *** $p < .001$, [†] $p < .10$.

Appendix A

Demographic Form

Participant #: _____ Partner (A/B)_____

Gender:

Date of Birth: _____ / _____ / _____

Female

(month) (day) (year)

Male

Year in School (please choose one):

Freshman _____ Sophomore _____ Junior _____ Senior _____

Ethnicity:

Hispanic

Arabic

Other (specify): _____

Race:

White/Caucasian

Black/African American

Asian

Pacific Islander

- American Indian/Native American
- Mixed/Other: _____

What is your current marital status?

- Single, never married
- Married
- Divorced
- Separated
- Widowed

If you are not currently married are you in a relationship or engaged?

- In a relationship
- Engaged
- Neither

Date of Beginning of Relationship (date you began dating your partner)

_____/_____/_____
(month) (day) (year)

How many children do you have?

- 0
- 1
- 2
- 3
- 4
- 5
- 6+

Appendix B

#	Time	Thought/Feeling (check one)	Content	How well did your partner understand your thought/feeling? (1-10, 1=not at all, 10=completely)
		<input type="checkbox"/> I was thinking <input type="checkbox"/> I was feeling		
		<input type="checkbox"/> I was thinking <input type="checkbox"/> I was feeling		
		<input type="checkbox"/> I was thinking <input type="checkbox"/> I was feeling		
		<input type="checkbox"/> I was thinking <input type="checkbox"/> I was feeling		
		<input type="checkbox"/> I was thinking <input type="checkbox"/> I was feeling		

Appendix C

#	Time	Thought/Feeling (check one)	Content	How well did you understand your partner's thought/feeling? (1-10, 1=not at all, 10=completely)
		<input type="checkbox"/> My partner was thinking <input type="checkbox"/> My partner was feeling		
		<input type="checkbox"/> My partner was thinking <input type="checkbox"/> My partner was feeling		
		<input type="checkbox"/> My partner was thinking <input type="checkbox"/> My partner was feeling		
		<input type="checkbox"/> My partner was thinking <input type="checkbox"/> My partner was feeling		
		<input type="checkbox"/> My partner was thinking <input type="checkbox"/> My partner was feeling		

Appendix D

DAS

Most people have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list by circling the number for the appropriate response.

	Always Agree	Almost Always Agree	Occasion- ally Disagree	Frequently Disagree	Almost Always Disagree	Always Disagree
Handling Finances	0	1	2	3	4	5
Matters of Recreation	0	1	2	3	4	5
Religious Matters	0	1	2	3	4	5
Demonstrations of Affection	0	1	2	3	4	5
Friends	0	1	2	3	4	5
Sex Relations	0	1	2	3	4	5
Conventionality (correct or proper behavior)	0	1	2	3	4	5
Philosophy of Life	0	1	2	3	4	5
Ways of Dealing with Parents or In-Laws	0	1	2	3	4	5
Aims, Goals, and Things Believed Important	0	1	2	3	4	5
Amount of Time Spent Together	0	1	2	3	4	5
Making Major Decisions	0	1	2	3	4	5
Household Tasks	0	1	2	3	4	5
Leisure Time Interests and Activities	0	1	2	3	4	5
Career Decisions	0	1	2	3	4	5

	All the Time	Most of the Time	More Often than Not	Occasionally	Rarely	Never
How often do you discuss or have you considered divorce, separation, or terminating your relationship?	0	1	2	3	4	5
How often do you or your partner physically leave after a fight?	0	1	2	3	4	5
In general, how often do you think that things between you and your partner are going well?	0	1	2	3	4	5
Do you confide in your partner?	0	1	2	3	4	5
Do you ever regret that you got married, lived together, or began a relationship with your partner?	0	1	2	3	4	5
How often do you and your partner fight/quarrel?	0	1	2	3	4	5
How often do you and your partner "get on each other's nerves"?	0	1	2	3	4	5

	Every Day	Almost Every Day	Occasionally	Rarely	Never
Do you kiss your partner?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	All of Them	Most of Them	Some of Them	Very Few of Them	None of Them
Do you and your partner engage in outside activities together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How often would you say the following events occur between you and your partner?

	Never	Less than Once per Month	Once or Twice a Month	Once or Twice a Week	Once a Day	Often
Have a stimulating exchange of ideas	0	1	2	3	4	5
Laugh Often	0	1	2	3	4	5
Calmly discuss something	0	1	2	3	4	5
Work together on a project	0	1	2	3	4	5

These are some things about which couples agree and sometimes disagree. Indicate if either item below caused differences of opinions or were problems in your relationship during the past few weeks.

Being too tired for sex Yes ___ No__

Not showing love Yes__ No__

Which of the following statements best describes how you feel about the future of your relationship?

(Choose One)

- I want desperately for my relationship to succeed, and would go to almost any length to see that it does.
- I want very much for my relationship to succeed, and will do all I can to see that it does.
- I want very much for my relationship succeed, and will do my fair share to see that it does.
- It would be nice for my relationship to succeed, but I can't do much more than I'm doing now.
- It would be nice if it succeeded, but I refuse to do anymore that I am doing now to keep the relationship going.
- My relationship can never succeed, and there is no more I can do to keep the relationship going.

Appendix E

Interpersonal Reactivity Index for Couples

The following statements inquire about your thoughts and feelings in a variety of situations occurring in your relationship with your partner. For each item, indicate how well it describes you by circling the appropriate number.

1. I often have tender, concerned feelings for my partner when he/she is less fortunate than me.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

2. Sometimes I don't feel very sorry for my partner when he/she is having problems.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

3. I try to look at my partner's side of a disagreement before I make a decision.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

4. When I see my partner being taken advantage of, I feel kind of protective towards him/her.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

5. I sometimes try to understand my partner better by imagining how things look from his/her perspective.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

6. My partner's misfortunes do not usually disturb my a great deal.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

7. If I'm sure I'm right about something, I don't waste much time listening to my partner's arguments.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

8. When I see my partner being treated unfairly, I sometimes don't feel very much pity for him/her.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

9. I am often quite touched by things I see happen in my relationship.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

10. In my relationship, I believe that there are two sides to every question and try to look at them both.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

11. In my relationship with my partner, I would describe myself as a pretty soft-hearted person.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

12. When I'm upset at my partner, I usually try to "put myself in his/her shoes" for a while.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

13. Before criticizing my partner, I try to imagine how I would feel if I were in his/her place.

0	1	2	3	4
Does not describe me well		Somewhat describes me		Describes me very well

Appendix F

PANAS

The words below describe different feelings and emotions. Read each item and then, in the space next to that word, indicate the extent to how you currently feel.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
	_____	interested		_____
	_____	distressed		_____
	_____	excited		_____
	_____	upset		_____
	_____	strong		_____
	_____	guilty		_____
	_____	scared		_____
	_____	hostile		_____
	_____	enthusiastic		_____
	_____	proud		_____
			_____	irritable
			_____	alert
			_____	ashamed
			_____	inspired
			_____	nervous
			_____	determined
			_____	attentive
			_____	jittery
			_____	active
			_____	afraid

Appendix G

Please rate how much influence each category had on your assessment on **how well your partner understood you**. The rating scale is 1-5, with 1=little to no influence, 3=some influence, and 5=very strong influence. (Circle one)

#	Time	Tone of Voice	Word Choice	Facial Expression	Body Language	Knowledge of Past Interactions
		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Appendix H

Please rate how much influence each category had on your assessment on **how well you understood your partner**. The rating scale is 1-5, with 1=little to no influence, 3=some influence, and 5=very strong influence. (Circle one)

#	Time	Tone of Voice	Word Choice	Facial Expression	Body Language	Knowledge of Past Interactions
		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Appendix I

Participants Needed!

DisCUSS: Discussion of Couple's Understanding and Social Support

Are you in a heterosexual married or dating relationship?

Have you and your partner been together for at least 6 months?

Would your partner be able to participate with you in a study?

Compensation

+Receive one (1) SONA credit

+Enter to win a \$50 Visa giftcard!

If you answered yes to all three questions, you may be eligible to participate!

Participation includes:

-Videotaping a discussion between you and your partner

-Reflecting upon that discussion

Interested or have questions?

Contact:
Katie Blasko
blasko@umich.edu

Appendix J

Google x Study Information x +

https://umd-umich.sona-systems.com/exp_info.aspx?experiment_id=363

Most Visited Getting Started Latest Headlines Recipes

[Send Request](#)

Active study: Does not appear on list of available studies -- must also be approved

Duration	60 minutes
Credits	1 Credits
Abstract	The goal of the current study is to investigate couple members' understanding during relationship discussions.
Description	<p>The current study will ask participants and their partners to complete surveys on background information (e.g., age, student status, etc), their own personal characteristics, and their relationship. Couples who agree to participate will be videotaped during a conflict discussion with their partner and will answer questions related to the interaction.</p> <p>Both you and your partner must meet the following eligibility requirements:</p> <ul style="list-style-type: none"> -At least 18 years of age -Able to read, write, and understand English -In a romantic heterosexual relationship of at least 6 months duration -Both partners able to attend and participate <p><u>BOTH PARTNERS MUST BE ABLE TO ATTEND!</u></p> <p>Please arrive on time! If you or your partner arrive more than 5 minutes late, you will not be able to participate that day and will have one opportunity to reschedule.</p>

Appendix K

Verbal Pre-Screening Script for Eligibility:

“Welcome! You are here to participate in the DisCUSS Study. In this study we are looking to better understand couple members’ understanding during relationship discussions. Before we begin, I want to make sure you are eligible to participate. As you might remember from the SONA description of the study, in order to be eligible you must be at least 18 years of age, in a heterosexual relationship of at least 6 months, and be able to read, write, and understand English. Based on this information, are you eligible to participate in the study today?”

Appendix L

Debriefing Script:

“This concludes your participation in the DisCUSS study. As we mentioned before, the goal of this study is to examine couple member’s understanding during relationship discussions. We hope that the results from the study will be able to inform clinical professionals about the role that couples’ understanding plays in relationship satisfaction. We thoroughly appreciate the time and effort that you have put into your participation and would like to thank you for participating. In the unlikely event that you feel distressed following your participation today, I am going to give you a list of resources you can use to find follow-up care.”

Appendix M

Study ID: HUM00098919 IRB: Dearborn Date Approved: 4/10/2015



Thank you for your participation in the DisCUSS Study. We hope that by exploring how couples relationship functioning, empathy, and perceptions of understanding interact during stressful situations, we can better inform psychological professionals about how to provide more comprehensive care for a variety of relationship problems. Without individuals like yourself, advances in therapy may not be made.

This sheet is provided as a reminder that should your participation in this project lead to a desire to seek additional services, you may contact any of the agencies listed below.

Psychological Services (please call for information on fees for the services)

University of Michigan – Dearborn Counseling Services*	313-593-5430
Marla Bartoi, Ph.D.	313-577-2841
Jeff Kuentzel, Ph.D.	313- 600-9840

*provides free counseling to current students of the University of Michigan – Dearborn

Medical Services

Henry Ford Medical Center- Fairlane	313-982-8495
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Domestic Violence

Catholic Social Services of Wayne County	313-883-2100 ext. 217
First Step	734- 416-1111 (Crisis) 888- 453-5900

Please feel free to contact any of these agencies should you feel you need additional care following your participation. Once again, thank you for your participation.

-Katie Blasko and the DisCUSS Study team