# UNDERSTANDING THE INTERPERSONAL PROCESSES ASSOCIATED WITH MARITAL SATISFACTION

By

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#### ABSTRACT

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Marital satisfaction is among the strongest correlates of overall life satisfaction, whereas marital dissatisfaction is associated with a variety of physical and psychological difficulties. Although a relatively large body of research has described several interpersonal processes associated with marital satisfaction, a systematic theoretical and measurement model for conceptualizing and measuring adaptive interpersonal processes as they naturally unfold remains elusive. The primary aim of this study was to test the usefulness of moment-to-moment measurement of dominance and warmth, grounded in the Interpersonal Circumplex (IPC) as a theoretical and measurement model, to evaluate how ongoing adaptive processes relate to marital satisfaction (aim 1) and personality traits (aim 2). To do this, I used the interpersonal joystick method to code moment-to-moment interpersonal behavior displayed by husbands and wives (n = 135 dyads)across four discussion tasks (plan a vacation, best things in relationship, husbands' relationship conflict, wives' relationship conflict), and used Actor-Partner Interdependence Modeling (APIM) to examine individual and relational associations between husbands' and wives' observed behaviors across tasks and their self-reported marital satisfaction and personality characteristics. I also tested associations between dyadic patterns such as behavioral correspondence versus reciprocity and husbands' and wives' marital satisfaction. Results revealed that wives' warmth was a consistent and moderate predictor of both partners' marital satisfaction. Husbands' warmth and dominance generally showed small effects in predicting his satisfaction, but not his wives. Both partners tended to be most satisfied when moment-tomoment dominance reciprocity was high, although models examining interactions between individual warmth, dyadic dominance reciprocity, and marital satisfaction generally indicated that high dominance reciprocity was particularly associated with satisfaction when wives were warm, but not when wives were cold. In general, results examining personality traits revealed that husbands' negative emotionality and personality problems were associated with higher levels of coldness in both spouses, whereas wives' wellbeing tended to be associated with higher levels of warmth in both spouses. The data obtained using this method also provide promising avenues for detailing how negative spousal patterns, such as demand-withdraw and negativereciprocity, unfold between partners from one moment to the next. These and other results highlight the value of using the IPC as a theoretical and measurement model for understanding associations between moment-to-moment personality processes and relationship satisfaction. Copyright by Katherine Meredith Thomas 2015 To Grant Thomas Womack (1992-2014)

You were here when I submitted my dissertation, so I never imagined you would be gone before I defended it. In your loss I feel, and for the first time fully grasp, the weight of the most consequential lesson I learned in my graduate training: Choose connection.

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#### INTRODUCTION

Relationships are a cornerstone of human health and happiness (Ainsworth, 1985; Baumeister & Leary, 1995; Bowlby, 1958; 1969; Ryan & Deci, 2000). Marital relationships in particular relate to a variety of physical, psychological, familial, and financial outcomes (e.g., Fincham & Beach, 2010; Huston, 2000; Levinger & Huston, 1990). Meta-analytic results indicate that marital satisfaction is related to personal wellbeing in cross-sectional and longitudinal studies (Proulx, Helms, & Buehler, 2007) and is among the strongest correlates of overall life satisfaction (average r = .42; Heller, Watson, & Ilies, 2004). Conversely, marital dissatisfaction is associated with greater health problems, lower reports of wellbeing (Bloom, Asher, & White, 1978; Burman & Margolin, 1992; Kiecolt-Glaser & Newton, 2001), and higher levels of criminal behavior (Laub, Nagin, & Sampson, 1998).

Relationship satisfaction varies substantially across couples and marital dissatisfaction and dissolution are common (Gottman & Notarius, 2000). In an attempt to synthesize and guide research on marital satisfaction and stability, Karney and Bradbury (1995) developed the Vulnerability Stress Adaptation (VSA) model. In this model (Figure 1), marital satisfaction is influenced by the ongoing *adaptive processes* that characterize spouses' interactions. Karney and Bradbury propose that these processes are influenced by the *enduring vulnerabilities* (e.g., personality, psychopathology) each partner brings to their relationship and the *stressful experiences* encountered by one or both partners.

A considerable amount of research has been dedicated to articulating the adaptive processes associated with marital satisfaction (Gottman & Notarius, 2000; Fincham & Beach, 2010); however, a systematic model for conceptualizing and measuring adaptive processes remains elusive. This is scientifically problematic given that adaptive processes represent the

core psychological mechanism facilitating marital success in the VSA model. As such, the focus of this study is to test whether interpersonal theory, operationalized using a momentary assessment of behavioral processes as they unfold between spouses, can provide a systematic framework for understanding and examining the adaptive interpersonal processes that relate to marital satisfaction.

#### Adaptive Processes and Marital Satisfaction

Relative to nondistressed couples, distressed couples tend to display fewer positive behaviors, such as agreeing with and displaying physical affection toward one another, and more negative behaviors, such as hostility, criticism, and blame (Gottman, Markman, & Notarius, 1977; Notarius & Markman, 1989). Less satisfied couples also display higher rates of withdrawal, whining, anger, and disagreement compared to more satisfied couples (Gottman & Krokoff, 1989; Gottman & Levenson, 1992; Pasch & Bradbury, 1998), and increase in their displays of these negative communications over the course of a discussion about a relationship problem (Gottman & Levenson, 1992). Controlling for marital satisfaction at baseline, Pasch and Bradbury (1998) found that levels of contemptuous behaviors during interactions predicted marital distress two years later.

Whereas early marital research on adaptive processes was primarily focused on behaviors related to *dissatisfaction*, more recent research has also examined adaptive processes associated with marital *satisfaction and stability* (Fincham & Beach, 2010). This literature generally indicates that more satisfied couples display higher rates of affection, agreeableness, and interest in one another compared to less satisfied couples (e.g., Gottman & Levenson, 1992). Longitudinal research has shown that positive communication behaviors (e.g., humor, affection, support) during a problem solving task predict marital satisfaction several years later (e.g., Gottman, Coan, Carrere, & Swansan, 1998; Pasch & Bradbury, 1998; Rogge & Bradbury, 1999).

On a briefer time-scale, Laurenceau and colleagues (2005) found that higher daily ratings of closeness between spouses were associated with higher levels of global marital satisfaction. Positive communication behaviors may also protect couples from the otherwise negative influence of their critical, hostile, and/or withdrawing behaviors (Fincham & Beach, 2010; Johnson, Maio, & Smith-McLallen, 2005; Margolin & Wampold, 1981). For instance, Johnson and colleagues (2005) found that, among couples who display high levels of negative communication behaviors, only those who failed to also display positive behaviors such as engagement and warmth experienced a decline in marital satisfaction in subsequent years.

Research identifying the types of behaviors that differentiate more and less satisfied couples is informative for beginning to understand the behavioral processes that relate to marital satisfaction. However, dyadic interactions involve more than the simple sum or aggregate of each individual's behaviors and examination of the interlocking patterns that characterize interpersonal behaviors is needed to account more fully for the complexity of dyadic interactions (Gottman, Swanson, & Swanson, 2002; Shoda et al., 2002; Zayas, Shoda, & Ayduk, 2002). An early study employing sequential analysis found that the frequency of non-negative (i.e., neutral or positive) communications by one partner immediately following a negative communication by the other partner incremented the total number of negative and positive communications in explaining variance in marital satisfaction (Margolin & Wampold, 1981). Subsequent researchers have identified two patterns, commonly referred to as *negative reciprocity* and *demand-withdraw* (*a.k.a. pursue-withdraw*), that distinguish more and less satisfied couples.

Negative reciprocity involves "the propensity for both members of the couple to react negatively when faced with the negative behavior of the other, leading to a cycle of negative interaction that may become strong enough to be self-sustaining" (Gottman, 1979). Less satisfied

couples are more likely to engage in negative reciprocity than satisfied couples, who are relatively more likely to break this cycle by responding to negative behaviors with neutral or positive behaviors (e.g., Gottman, Markman, & Notarius, 1977; Gottman & Notarius, 2000; Margolin & Wampold, 1981).

The demand-withdraw pattern involves one partner criticizing or commanding something from the other, who responds by disengaging from the discussion and avoiding confrontation (e.g., Gottman et al., 1997; Heyman, 2001; Notarius & Markman, 1989). Wives more frequently demand and husbands more frequently withdraw (Bradbury et al., 2000; Gottman et al., 1997; Heavey, Layne, & Christensen, 1993); however, this pattern is bi-directional and can be initiated with a demand or withdrawal from either partner (Klinetob & Smith, 1996). According to the demand-withdraw perspective, "increased demands lead to increased avoidance, which in turn leads to increased demands for engagement" (Bradbury et al., 2000, p. 967), suggesting the cyclical nature of this process. Research indicates that demand-withdraw patterns are associated with decreased marital satisfaction (Eldridge & Christensen, 2002; Heavey, Christensen, & Malamuth, 1995; Klinetob & Smith, 2006), although there is some evidence that warmth moderates this association (Caughlin & Huston, 2002).

#### Interpersonal Theory and the Interpersonal Circumplex

The Interpersonal Circumplex (IPC) was derived by studying the structure of thousands of interactions (Leary, 1957) and its circular structure was replicated using a lexical approach to organize the taxonomy of interpersonal behaviors (Wiggins, 1979). These and other independent inquiries into the structure of social processes converge to suggest that two fundamental dimensions, *control* (dominance to submission) and *affiliation* (warmth to coldness), account for much of the variability in relational functioning and behavior (e.g., Leary, 1957; Luyten & Blatt,

2013; Wiggins, 1979; 1991). These dimensions are commonly operationalized using the IPC (Figure 2). The circular organization of this model has several advantages (Pincus & Gurtman, 2006; Wright, et al., 2009), including the provision of an inclusive map of interpersonal behaviors that uses only two dimensions. For instance, trusting behavior represents a blend of warmth and submissiveness because it involves a desire to *connect with* and *follow the lead* of another. In this way, the IPC combines the advantages of a simple structure with the advantages of a comprehensive taxonomy (Gurtman, 1992).

The IPC dimensions include behaviors that have commonly been found to relate to marital satisfaction. For instance, a large body of research suggests warmth is associated with marital satisfaction. Gonzaga and colleagues (2001) coded four affiliative behaviors displayed by partners during discussions (head nods, gestures, forward leans, and genuine [*Duchenne*] smiles) and found that higher levels of these behaviors were associated with higher levels of relationship satisfaction, even when controlling for trait levels of agreeableness and extraversion. Longitudinal research indicates that higher dyadic displays of disengaged behaviors, such as silence and disinterest, during problem-solving discussions predict lower marital satisfaction up to three years later (Gottman & Krokoff, 1989; Smith, Vivian, & O'Leary). Using ecological momentary assessment, Janicki and colleagues (2006) found that higher rates of agreeable behavior during spousal interactions correlated with higher daily reports of marital satisfaction.

Dominance has received less empirical attention than affiliative behaviors in marital research (Smith et al., 2009). Much of the research examining dominance in marital interactions has focused on extreme expressions of this behavioral dimension, such as intimate partner violence and coercive control. Not surprisingly, such behaviors are associated with lower levels of marital satisfaction (Fincham, 2003; Gray-Little & Burks, 1983). Highly dominant behaviors

by husbands during marital interactions have also been linked with lower levels of marital satisfaction for both partners (Gottman & Levenson, 1984; Thomsen & Gilbert, 1998).

Additional research regarding whether dominant behaviors are adaptive is mixed, and indicates the importance of examining the behaviors of both spouses. For instance, in one study Gray-Little (1982) found that higher discrepancies between behavioral ratings of husbands and wives displays of dominance during a discussion were associated with higher levels of marital satisfaction; however, in a subsequent study (Gray-Little, Baucom, & Hamby, 1996), she found that husbands and wives who were most egalitarian in their displays of dominance had the highest levels of marital satisfaction. Although such results appear inconsistent, they can be integrated using an interactional perspective. For instance, it might be adaptive for spouses to express comparable levels of dominance overall, but to takes turns speaking and listening to one another during discussions. This notion is consistent with research indicating that momentary interpersonal behaviors, particularly dominance, tend to be cyclical (Sadler, Ethier, Gunn, Duong, & Woody, 2009; Thomas, Hopwood, Woody, Ethier, & Sadler, 2014).

In additional to providing a comprehensive taxonomy of interpersonal behaviors that are relevant to marital satisfaction, the IPC may also provide a valuable tool for marital researchers because it is rooted in a theoretical model that makes specific predictions about how and under what conditions behaviors are likely to change. A core tenet of interpersonal theory is that individuals continually assert influence on the responses they receive from others in their relationships (Carson, 1969; Kiesler, 1996, Leary, 1957, Pincus & Hopwood, 2012). A specific pattern, referred to as *complementarity*, describes a commonly identified process that unfolds during dyadic interactions (Carson, 1969; Sadler, Ethier, & Woody, 2010). Based on this

principle, the behaviors of one individual invite particular behaviors from the other individual in dyadic interactions. Specifically, warmth invites warmth, whereas dominance invites submission.

Empirical research has often found evidence for complementarity across a variety of relationships and interactions (for a review, see Sadler et al., 2010), and higher levels of complementarity are associated with interpersonal closeness (Ansell, Kurtz, & Markey, 2008; O'Connor & Dyce, 2001; Yaughn & Nowicki, 1999) and relationship satisfaction (Dryer & Horowitz, 1997; Locke & Sadler, 2007). Among college students in long-term relationships, greater similarity in couples' self-reported warmth and greater discrepancy in their self-reported dominance were associated with higher levels of relationship satisfaction (Markey & Markey; 2007). Observations of interactions also indicate that higher levels of observed complementarity are associated with interactants liking one another more (Dryer & Horowitz, 1997; Markey, Lowmaster, & Eichler 2010; Nowicki & Manheim, 1991), and deviations from complementarity may be indicative of problematic interpersonal functioning (Pincus, Lukowitsky, Wright, & Eichler, 2009; Sadler et al., 2010).

There are, however, important caveats to this research. For one, measuring complementarity at a global time scale may not be the most accurate way to assess its dynamic predictions (Sadler & Woody, 2003; Sadler et al., 2009; Tracey, 2004). Complementarity is a multi-faceted construct that may be more or less relevant depending on the temporal resolution used to measure it (Sadler et al., 2010). Research examining complementarity across a variety of time scales (e.g., traits, situations, behaviors) has found that rates of complementarity are highest when measures at the level of real-time behaviors (Tracey, 2004).

Secondly, it is unclear whether complementarity functions equivalently on the warm and cold halves of the IPC. Orford (1986) suggests that although complementarity is commonly

found on the warm half of the IPC (i.e., warm-dominance and warm-submissiveness elicit one another), cold-dominance elicits cold-dominance whereas cold-submissiveness elicits warmdominance. However, the studies he reviewed largely measured complementarity at a global time scale, and more recent research measuring interpersonal behaviors suggests that complementarity occurs on both the warm and cold halves of the IPC (Sadler, Little, & Woody, 2014; Sadler & Woody, 2003). An important aim for future research is to examine whether complementarity functions as an adaptive process across the range of IPC and across a range of relationships and conversations. Research from the marital literature suggests that complementarity on the warmth half of the IPC might be more adaptive than complementarity on the cold half of the IPC.

Indeed, the *negative reciprocity* and *demand-withdraw* patterns identified as maladaptive for marital satisfaction can be construed as complementarity that occurs on the cold side of the IPC. Specifically, negative reciprocity involves a complementary pattern whereby cold behavior from one spouse elicits cold behavior from the other spouse. As can be seen in Figure 3, this pattern is often cyclical and mutually reinforcing. In the demand-withdraw pattern (Figure 3), one partner's cold-dominance is met with cold-submissiveness from the other partner. This pattern may be especially common when one partner is particularly rigid in his/her behavioral style, consistently pulling for a cold-complementarity response from the other partner. The demand-withdraw pattern may also be bi-directional, with partners taking turns demanding and withdrawing from one another over time (Klinetob & Smith, 1996). Given that negative reciprocity and demand-withdraw patterns involve cold complementarity, and that these patterns are associated with reduced marital satisfaction, it is possible that complementarity is most adaptive for couples when unfolds on the warm half of the IPC.

#### Integrating the VSA and IPC Models to Examine Marital Satisfaction

Several marital researchers have drawn attention to the need for theoretical models and organizing principles capable of guiding our understanding of how and why marriages are experienced as satisfying (e.g., Heyman, 2001; O'Brien, 2005; Reis, 2007). In his review of the many methods that have been used to study marital interactions, Heyman (2001, p. 26) noted,

One cannot establish procedures and measures as content and construct valid without a theory about what they should be measuring. Although this seems rather obvious, a large number of studies [examining behavioral processes in married dyads] seem to lack a theoretical structure for their hypotheses or for their use of observational systems.

Similarly, O'Brien (2005) lamented that many measurement and data analytic techniques used to study behavioral processes employ strategies that do not adequately capture the dynamic complexities inherent in interpersonal exchanges. These conclusions suggest that it would be beneficial to measure adaptive processes using an empirically supported model that can capture dynamic complexities.

In their development of the VSA model, Karney and Bradbury (1995) evaluated common theoretical perspectives of marriage against three important criteria known to account for meaningful variance in marital satisfaction. Specifically, they evaluated whether each model: 1) could be used to examine both macro- and micro-level variables, 2) specified mechanisms of change and influence on marital satisfaction, and 3) could account for both within and betweencouple variations in marital outcomes. The interpersonal model meets each of these criteria. Specifically, interpersonal theory and the IPC can be used: 1) to organize the study warmth and dominance at high levels of abstraction (e.g., the extents to which a person values connection and achievement), to study moment-to-moment behaviors as they unfold in real time, and to examine varying levels of specificity in between (e.g., average behavioral tendencies); 2) to test

theoretically-grounded mechanisms presumed to influence behavioral processes, such as complementarity; and 3) to measure behavioral processes that unfold both within and between individuals (Leary, 1957; Fournier, Moskowitz, & Zuroff, 2008; 2009; Sadler et al., 2009; Thomas et al., 2014; Wiggins, 1996).

In the VSA model, Karney and Bradbury (1995) propose that individual vulnerabilities and stressful situations adversely influence behaviors, which in turn adversely influences marriages. The IPC provides a map for measuring real-time behavioral interactions (Gifford, & O'Connor, 1987), and the principle of complementarity provides a testable theoretical prediction regarding dynamic associations between individuals' behaviors over time. In the following section I will discuss specific aims for testing the integrative potential of the IPC as a measurement model of adaptive processes (see also Figure 4).

#### Aim 1: Marital Satisfaction and Adaptive Processes

The first aim of this study was to examine associations between momentary interpersonal behaviors and marital satisfaction. Given research indicating warmth is associated with marital satisfaction, I expected mean ratings of warmth for both spouses to be associated with both spouses' self-reported marital satisfaction. Because it is less clear whether dominant behaviors relate to marital satisfaction, I explored associations between mean ratings of dominance and marital satisfaction, but did not make a specific prediction about these potential associations.

Complementarity involves dynamically stable behavioral pulls that unfold between partners. This principle provides a baseline prediction for behavioral exchanges, but dyads display considerable differences in the extent to which their behaviors are complementary (Pincus, 1994; Sadler et al., 2009) and the potentially adaptive role of complementarity remains unclear. Whereas much research has linked complementarity with relationship satisfaction, other

research suggests that complementary cold behaviors are associated with less relationship satisfaction. Thus, the potential adaptivity of complementarity may differ depending on whether it unfolds in the context of warmth or coldness. I predicted that complementarity on both the warmth and dominance dimensions would relate to marital satisfaction, but that this association would be stronger for couples who displayed more warm behaviors.

**Hypothesis 1.1:** Observer ratings of warmth for both spouses will be associated with both spouses' self-reported marital satisfaction.

**Hypothesis 1.2:** Complementarity on both the warmth and dominance dimensions will be associated with both spouses' marital satisfaction.

**Hypothesis 1.3:** Mean levels of dyad warmth will moderate the association between marital satisfaction and complementarity on the warmth and dominance dimensions.

### Aim 2: Enduring Vulnerabilities and Adaptive Processes

Researchers using the VSA model have found that personality characteristics systematically relate to marital satisfaction (Bradbury, Fincham, & Beach, 2000; Malouff, Thorsteinsson, Schutte, Bhullar, & Rooke). One of the most robust personality predictors of poor marital satisfaction is *Negative Emotionality* (NEM)<sup>1</sup>, which involves the tendency to experience negative emotional states such as anger, anxiety, depression, and vulnerability (Clark, 2005; Rothbart, Ahadi, & Evans, 2000; Tellegen & Waller, 2008). NEM has consistently been linked with lower self- and partner-reports of satisfaction in romantic relationships in cross-sectional (Cundiff, Smith, & Frandsen, 2012; Donnellan, Assad, Robins, & Conger, 2007; Donnellan,

<sup>&</sup>lt;sup>1</sup> To maintain consistent terminology throughout the paper, I use the terms NEM, PEM, and CON to describe results from either the "Big 3" (Clark, 2005) or the Five Factor (FFM) Models of personality. Associations between the "Big 3," as measured by the MPQ (Tellegen, 1982), and the FFM, as measured by the NEO-PI-R (Costa & McCrae, 1992), are as follows: NEM is associated primarily with neuroticism and somewhat with agreeableness; PEM is highly associated with extraversion and moderately associated with agreeableness; and CON primarily overlaps with conscientiousness (Church, 1994; Markon, Krueger, & Watson, 2005).

Conger, & Bryant, 2004; Karney Bradbury, 1997; Malouff et al., 2010; Robins, Caspi, & Moffitt, 2000; Stroud et al., 2010) and longitudinal (Caughlin, Huston, & Houts, 2000; Kelly & Conley, 1987; Robins, Caspi, & Moffitt, 2002) research. The association between NEM and marital satisfaction is not surprising given NEM's association with a host of other negative outcomes, including poor physical health (Lahey, 2009) most forms of psychopathology (Kotov, Gamez, Schmidt, & Watson, 2010; Samual & Widiger, 2008), and less satisfaction in work and relationships (Ozer & Benet-Martinez, 2006).

Karney and Bradbury (1995) proposed that personality characteristics such as NEM influence marital satisfaction because they influence the adaptive processes of couples' interactions (Figure 1). Indeed, there is widespread evidence that personality traits influence behavior, although the correspondence between broad traits and specific behaviors is modest (Back, Schmukle, & Egloff, 2009; Fleeson & Gallagher, 2009; Paunonen & Ashton, 2001; Sadler & Woody, 2003). NEM has been associated with general interpersonal distress (Tracey, Rounds, & Gurtman, 1996) and with cold interpersonal characteristics in particular (Trapnell & Wiggins, 1990). Higher levels of self-reported NEM have also been associated with lower levels of observed warmth during dyadic interactions (Côté & Moskowitz, 1998; Moskowitz, 1994).These findings lend support to Karney and Bradbury's proposal that personality characteristics influence spousal behaviors.

NEM has consistently demonstrated associations with other enduring vulnerabilities such as general interpersonal problems (Ozer & Benet-Martinez, 2006) and personality disorders (PDs; Samuel & Widiger, 2008). Cross-sectional and ambulatory assessments of spousal PD symptoms consistently indicate that either partner's personality pathology is associated with reduced marital satisfaction for both partners (Knabb, Vogt, Reist Gibbel, & Brickley, 2012;

South, 2014; South, Turkheimer, & Oltmanns, 2008). These findings are not surprising given that difficulties in interpersonal relationships are a defining characteristic of PDs (e.g., Benjamin, 1996; Krueger, Skodol, Livesley, Shrout, & Huang, 2007; Pincus, 2005; Pincus & Hopwood, 2012). Evidence suggests that interpersonal problems and PDs also negatively influence adaptive processes. For instance, PDs are typically associated with cold and disagreeable behavior (Samuel & Widiger, 2008), suggesting that maladaptive behavioral processes may be one reason for relationship difficulties among individuals with PDs. The severity of individuals' personality pathology (i.e., the total number of PD symptoms endorsed) is also associated with higher rates of verbal and physical aggression toward their spouse (Schumacher, & Leonard, 2005). Likewise, there is a large body of evidence linking interpersonal problems and PDs to rigid interpersonal behavior (Chen et al., 2004; Johnson, Chen, & Cohen, 2004; Pincus & Wiggins, 1990). Given that interpersonal rigidity is associated with lower levels of complementarity (Tracey, 2005), individuals with PDs appear less likely to adhere to normative behavioral patterns when interacting with others.

Although Karney and Bradbury (1995) referred to the characteristics that contribute to adaptive processes and marital satisfaction as *vulnerabilities*, individual characteristics can also maintain and improve marital satisfaction (Fincham & Beach, 2010). Some evidence suggests marital satisfaction is associated with personality traits related to achievement and social closeness. For instance, self-reported *Positive Emotionality* (PEM), which involves tendencies to experience positive emotions such as excitement and joy and to be actively engaged with the environment, relates to higher levels of self- and partner-reported relationship satisfaction (Donnellan et al., 2005; Malouff et al., 2010; Robins et al., 2000; Stroud et al., 2010) and to higher observer-rated warmth behaviors during dyadic interactions (Côté & Moskowitz, 1998).

Most of the variance in marital satisfaction associated with PEM appears to be captured by facets related to social connection, referred to as *communal PEM* (PEM-C), rather than by facets associated with *agentic PEM* (PEM-A), which include achievement and social potency (Donnellan et al., 2007; Robins et al., 2000). Given associations between PEM-C and Five Factor Model (FFM) agreeableness and PEM-A and extraversion (Markon et al., 2010), this finding is consistent with meta-analytic results (Malouff et al., 2010) indicating that agreeableness is more strongly associated with marital satisfaction than extraversion.

In sum, individuals who characteristically experience negative emotions and relational problems tend to also have less satisfying marriages, whereas highly communal individuals tend to have more satisfactory marriages (Smith, Traupman, Uchino, & Berg, 2010; Whisman, Uebelacker, & Weinstock, 2004). In the VSA model, such enduring vulnerabilities are proposed to reduce marital satisfaction via their influence on adaptive interpersonal processes (Karney & Bradbury, 1995). Whereas my first study aim was to test associations between interpersonal processes and marital satisfaction, my second aim was to examine whether the interpersonal processes that are relevant for marital satisfaction are influenced by personality characteristics. Based on past research, I expected enduring vulnerabilities related to negative emotional experiences and interpersonal problems to be associated with maladaptive interpersonal processes, specifically warmth. In contrast, I expected positive emotional experiences and closeness in relationships to be associated with observed warmth.

**Hypothesis 2.1:** NEM, interpersonal problems, and total PD severity will be associated with lower levels of actor and partner warmth.

**Hypothesis 2.2:** PEM-C will be associated with higher levels of actor and partner warmth.

#### METHOD

#### **Participants**

The majority (93.2%) of participants were married (mean marriage length = 8.81 years; SD = 3.96 years) and raising approximately two children (M = 2.32; SD = 0.88). Women's ages ranged from 23-49 (M = 36.91; SD = 5.17) and men's ages ranged from 23-57 (M = 38.27; SD = 5.79). Approximately 90% of participants provided information on their race/ethnicity and described themselves as Caucasian/White (75.9% women, 75.5% men), Hispanic/Latino (10.2% women, 11.3% men), African–American/Black (9.3% women, 9.4% men), Asian (8.3% women, 4.7% men), Native American (2.8% women, 1.9% men), other (1.9% women, 4.7% men), and bi/multi-racial (1.9% women, 3.8% men)<sup>2</sup>. The majority (80.4%) of partners within a couple endorsed the same race/ethnicity. Among couples who provided information on their family income (86.4%), 1.9% reported income below 10,000; 17.8% reported income between 21,000 and 40,000; 15.0% reported income between 41,000 and 60,000; 31.8% reported income between 61,000 and 100,000; and 33.6% reported income above 100,000.

This study will use existing data collected from heterosexual couples (n = 140 dyads) recruited from the Chicago, IL area for a study of family relationships, temperament, and psychopathology (Stroud et al., 2010; Stroud, Durbin, Wilson, & Mendelsohn, 2011; Wilson & Durbin, 2012a; Wilson & Durbin, 2012b). Eligible couples cohabitated and had a biological child between the ages of three and six. The full study involved two laboratory visits, the first to assess child temperament and the second to assess parent personality [traits, problems, and disorders] and relationship satisfaction as well as family and spousal interactions. Only data from the second laboratory visit will be used for the present study. All procedures were approved by

<sup>&</sup>lt;sup>2</sup> Race/ethnicity values do not sum to 100% because participants could endorse multiple categories.

local Institutional Review Boards and families were financially compensated for their participation.

#### Procedure

During their lab visit, participants completed a variety of self-report measures assessing marital satisfaction and personality functioning. Following the completion of these questionnaires, couples participated in six discussion tasks, four of which were coded in this study. As the "warm-up" discussion, couples were told to plan a real or pretend *vacation* (5 minutes), discussing the location, length, and activities involved with the potential trip. For their "cool-down" discussion, couples were asked to discuss the *best things* about their relationship (5 minutes).

In between these tasks, couples engaged in two conflict discussions (8 minutes each), one identified as the *wife's conflict* with her husband and the other identified as the *husband's conflict* with his wife. For these discussions, research assistants told couples what to discuss based on the couples' combined two most highly rated areas of disagreement on the *Dyadic Adjustment Scale* (DAS; Spanier, 1976). Couples were instructed to discuss the conflict and try to reach a solution. These discussions were designed to elicit common emotional experiences that occur between couples (Foster, Caplan, & Howe, 1997).

To assess interpersonal processes during couples' interactions, coders made continuous, behaviorally anchored ratings of each spouse during each discussion (Lizdek, Sadler, Woody, Ethier, & Malet, 2012; Sadler et al., 2009). Ratings were made by simultaneously viewing a discussion task and using a computer joystick (the Microsoft SideWinder Force Feedback 2) to code the target's momentary expressions of dominance and warmth. The computer monitor displayed the video being viewed and a Cartesian plane depicting dominance and warmth (i.e.,

the IPC dimensions). A dot moved within the Cartesian plane in accordance with joystick movements, allowing coders to view the placement of their ratings as they watched videos. Joystick data were scaled from -1,000 to 1,000 on both dimensions, with 1,000 on the y-axis representing extreme dominance and 1,000 on the x-axis representing extreme warmth. Consistent with past research, the program software recorded raters' joystick placement along both axes *twice per second*.

Coders were instructed to make behaviorally anchored ratings by moving the joystick in accord with all of the target person's statements, nonverbal behaviors, fluctuations in tone, etc., that constituted an increase or decrease in dominance and/or warmth. As such, raters moved the joystick in a relatively continuous manner in accord with their perceptions of changes in the target's interpersonal behavior. Examples of dominant behaviors included directing the conversation, asserting authority, and speaking first during conversational lulls, whereas examples of submissive behaviors included following the other person's lead, adhering to requests, and not speaking during conversational lulls. Examples of warm behaviors included physical gestures such as moving closer to the other person, eye contact, and affectionate touching, and verbal communications such as laughing, praising, supporting, or complimenting the other person. In contrast, examples of cold behaviors included physical gestures like looking away or aggressive touch, verbal communications such as mean and sarcastic comments, and an absence of reciprocated warmth, such as not laughing when the other person employs humor or withdrawing from physical affection. Because many behaviors reflect a blend of dominance and warmth (e.g., interruptions are often both dominant and cold), horizontal and vertical joystick movements often occur simultaneously to varying degrees and coders were instructed to move the joystick in a manner that concurrently represents dominance and warmth. Raters were also

instructed to move the joystick to represent any times in which the absence of a behavior signified a meaningful interpersonal action (e.g., if the target remained silent after being asked a question). When no discernible changes in interpersonal behavior were displayed, raters were instructed to maintain their most recent joystick position until the target displayed a meaningful interpersonal behavior. Importantly though, raters were instructed to code even slight gestures like eye contact, head nods, and changes in tone to ensure that they capture fine-grained variations in behavior.

Eight undergraduate research assistants (fours males and four females) underwent training on the joystick method using protocol outlined by Sadler and colleagues (2009). Training began with an introduction to the IPC, familiarization with the joystick apparatus, and practice moving the joystick to represent various interpersonal descriptors. Raters then watched the study author use the joystick to code an individual's behaviors and had several opportunities to ask any clarifying questions before coding videos themselves and receiving live observation and feedback.

To practice rating momentary interpersonal behaviors, coders watched and rated several parent-adolescent conflict discussions (10 minutes). These data were selected for training purposes for several reasons. For one, these videos were previously rated by seven reliably trained coders, and their averaged ratings provided a reliable composite against which to assess the reliability of new coders. Additionally, the dyads in these training videos also involved family members, which can present unique coding challenges (e.g., it is difficult to code "inside jokes"). Lastly, participants in the training videos discussed and attempted to resolve a disagreement. This provided novice coders with opportunities to train on a task similar to tasks they rated in this study. Sadler and colleagues (2009) found that cross correlations of at least .40-

.50 are sufficient for obtaining good reliability of the moment-to-moment ratings once they are aggregated across raters. Thus, coders only began coding videos for this study when they consistently obtained cross-correlations  $\geq$  .50 with trained raters on at least five training videos.

Once trained, four coders were assigned to code each dyad. Coder assignments were quasi-randomized such that: 1) two males and two females were assigned to code each dyad, and 2) each coder was assigned to code either vacation *or* best things *and* either husband conflict *or* wife conflict. Coders assigned to a discussion for a dyad coded both the husband and the wife (one male and female coded the wife first and one male and female coded the husband first). This approach to coding should reduce the likelihood that observed differences in interpersonal behaviors were an artifact of different coders' unique perceptions.

Coders received four coding assignments, completed by task in the following order: 1) vacation, 2) husband conflict, 3) wife conflict, and 4) best things. Each coder was assigned to approximately half of the videos in each category. The order in which coders watched videos was randomized to reduce the influence of potential coder drift systematically affecting some videos more than others. Across participants, if one coder demonstrated low reliability (i.e., most cross-correlations  $\leq$  .40) with other coders on both IPC dimensions, that coder's data was removed from that individual's aggregate time-series. When multiple coders demonstrated poor reliability on both dimensions for a given dyad, we reviewed that video with one another in biweekly team meetings with all coders and the study author, and coders then re-rated the interaction. During meetings, coders took turns rating videos and receiving live observation and feedback from the group.

To obtain the final time series data for each participant on both IPC dimensions, I averaged joystick data across reliable coders at each time point. These half-second ratings of

dominance and warmth yielded eight bivariate time-series for each participant (two IPC dimensions, four discussions). The average time-series for the *vacation* and *best things* discussions (five minutes) included approximately 600 data points, and the average time-series for the *husband* and *wife conflict* discussions (eight minutes) included approximately 960 data points.

The reliability of the aggregated time series was assessed by comparing the shared variance to the total variance for each time series, as described by Sadler and colleagues (2009). The shared (i.e., true score) variance was estimated as the mean of the cross covariances of the individual raters' times series, and the total variance was estimated as the variance of the aggregated time series. In past research, this approach has yielded reliability estimates ranging from .61 to .89 for dominance and .58 to .82 for warmth (Klahr, Thomas, Hopwood, Klump, & Burt, 2013; Markey et al., 2010; Sadler et al., 2009; Thomas et al., 2014).

#### Measures

#### Adaptive Processes

Several indices were computed from joystick data to examine the associations between interpersonal behaviors and marital satisfaction (Aim 1) and between interpersonal behaviors and personality characteristics (Aim 2). These indices include the overall levels of warmth and dominance displayed by each participant and the moment-to-moment correspondence of these behaviors between spouses.

To examine how overall tendencies in interpersonal behavior were associated with the VSA model, I computed global ratings of dominance and warmth for each participant by averaging these values across reliable raters for each time-series. Averaged joystick data provides an equal weighting of all moments in an interaction, and should therefore reduce biases

associated with recency and primacy effects common to other global coding schemes (e.g., Stone & Shiffman, 1994). As such, this method is likely to yield reliable estimates of individuals' average behavioral tendencies.

I examined complementarity in two ways. First, I computed the absolute difference between partners' mean warmth (and dominance) in each task, and averaged across tasks for a total *mean correspondence* score. Second, I computed the moment-to-moment cross-correlation between partners' warmth (and dominance) time-series in each task, and averaged across tasks for a total *momentary complementarity* score. Cross-correlations are an intuitively accessible analysis of the momentary correspondence between partners (Sadler et al., 2009; Thomas et al., 2014). They provide a directional value indicating the strength of association between behaviors throughout the course of an interaction. A positive cross-correlation for warmth indicates that as one individual increases in warmth at a given time, the other individual also increases in warmth at that time. Stronger cross-correlations for warmth are more consistent with the theory of interpersonal complementarity. Conversely, stronger negative cross-correlations on the dominance dimension are more consistent with the theory of complementarity because negative values indicate that as one individual increased in dominance at a given time, the other individual increased in submissiveness at that time. Overall complementarity scores were computed by averaging the complementarity values obtained for each of the four interactions.

Although cross-correlations provide a useful estimate of momentary correspondence between partners, these values are often inflated in the presence of linear trends (Warner, 1998; Yule, 1926). Thus, if a dyad has a high cross-correlation for affiliation and both members of the dyad also became warmer from the start to the end of the interaction, it is unclear to what degree the high cross-correlation is artificially inflated due to the linear trend versus a function of genuine correspondence between partners. To test this distinction, I computed the momentary

correspondence between residual cross-correlations for all interactions in which either partner had a significant linear trend in his/her warm or dominant behaviors throughout the interaction.

I computed values for residual cross-correlations by first conducting a linear regression using each individual's dominance and warmth scores (examined separately) throughout the interaction as the dependent variable and time as the independent variable. Cross-correlations were then re-computed using the unstandardized residuals from these analyses (i.e., crosscorrelating unstandardized residuals of the husband's warmth during an interaction with the unstandardized residuals of the wife's warmth during an interaction, and repeating this analysis for unstandardized residuals of both partners' dominance). These values provide an index of momentary correspondence irrespective of systematic linear changes in interpersonal behavior over time.

#### Marital Satisfaction

I used scores from two different measures, the DAS and the *Marital Satisfaction Inventory–Revised* (MSI-R; Snyder & Aikman, 1999), to evaluate marital satisfaction. The DAS is a 32-item self-report inventory designed to assess relationship distress. Meta-analytic results indicate that the total DAS score is a reliable indicator of relationship dissatisfaction across diverse samples (Graham, Liu, & Jeziorski, 2006). Mean DAS scores averaging all items were used as an indicator of marital dissatisfaction<sup>3</sup>.

The MSI-R is a 150-item true-false measure designed to assess global and specific aspects of relationship distress. The MSI-R has demonstrated good discriminant validity, internal consistency, and test–retest reliability across several studies (Snyder & Aikman, 1999). In the

<sup>&</sup>lt;sup>3</sup> Consistent with past research using these data (Stroud et al., 2011), only participants who answered at least 26 of the 32 DAS items were included in this study.

present study, the 22-item global distress scale was used to estimate the severity of participants' marital dissatisfaction.

I computed a total marital satisfaction score for each participant by averaging their total DAS and MSI-R distress scores. Mean scores from both measures should provide a more reliable estimate of marital satisfaction than either measure would provide in isolation. Because these measures are scaled in opposite directions (lower DAS scores indicate higher levels of dissatisfaction, whereas higher MSI-R scores indicate higher levels of dissatisfaction), MSI-R scores were recoded so that higher scores on both measures indicated greater marital satisfaction. Marital satisfaction was computed and examined independently for husbands and wives.

#### **Enduring Vulnerabilities**

Participants also completed three personality-relevant measures to assess their standing on broadband personality traits, interpersonal problems, and personality disorder symptoms.

The *Multidimensional Personality Questionnaire* (MPQ; Tellegen, 1982) is a 300-item true-false measure that assesses the temperament traits NEM, PEM, and constraint (CON), each comprised of lower-order facets. NEM includes aggression, alienation, and stress reaction. PEM includes four scales that can be further divided to index PEM-A (achievement and social potency) and PEM-C (social closeness and wellbeing). CON includes control, harm avoidance, and traditionalism scales. I used these MPQ scales to test associations between self-reported vulnerabilities and observer-rated interpersonal behaviors.

The *Inventory of Interpersonal Problems* (IIP; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) assesses the severity and types of difficulties that individuals commonly experience in their relationships. The IIP total score (elevation) indexes the severity of problems individuals' experience in their social lives. Items of the IIP can also be organized around the

primary dimensions of the IPC to reflect the respondent's problems related to warmth and problems related to dominance. Total, warmth, and dominance problem scores were used to test associations between self-reported interpersonal problems and observer-rated interpersonal behaviors.

The International Personality Disorder Examination-Screener (IPDE-S; Loranger et al., 1994) is a 77-item true-false questionnaire designed to assess the ten Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 2000) PDs. The IPDE is comprised of scales assessing each DSM-IV PD (paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, and obsessive-compulsive). Common criticisms of the DSM-IV PDs have included poor reliability of the categorical rating system and high levels of co-occurrence among disorders (e.g., Clark, 2007; Widiger & Trull, 2007). However, because DSM-based measures are commonly employed, researchers have examined how these measures can be reliably used. This work indicates that dimensional counts of PD symptoms provide reliable estimates and explain variance in several outcomes related to functional severity (Morey et al., 2007; Skodol, et al., 2005). Thus, I used the total IPDE-S score (i.e., sum of all endorsed symptoms) and PD symptom counts to test associations between self-reported personality pathology and observer-rated interpersonal behaviors.

#### Data Analysis

A preliminary question is whether mean warmth and dominance ratings significantly differ (p < .05) across interactions. Frequent marital disagreements are associated with lower marital satisfaction (McGonagle, Kessler, & Schilling, 1992), and daily reports of marital disagreement are associated with lower daily reports of satisfaction, suggesting that disagreement
and dissatisfaction may co-occur (Bolger et al., 1989; Campbell, Simpson, Boldry, & Kashy, 2005). On a briefer time-scale, the manner in which couples respond to one another during conflict discussions has been associated with marital satisfaction (Argyle & Furnham, 1983; Schneewind & Gerhard, 2002; Story & Bradbury, 2003). Such findings suggest that discussions with high levels of conflict may reduce spouses' adaptive processes. Thus, I expect conflict discussions to have lower levels of average warmth than the best things and vacation discussions.

To examine this I tested differences in mean warmth and dominance across interactions using a one-way ANOVA. If these values *do not* significantly differ across interactions, it would suggest that averaging means to obtain an index of participants' overall levels of warmth and dominance across interactions may be the most reliable way to operationalize interpersonal behaviors. In contrast, if these values *do* significantly differ across interactions, it would suggest that it is worth examining associations between the VSA model and interpersonal behaviors distinctly across interactions.

Following these analyses, my first aim was to examine associations between momentary interpersonal behaviors and marital satisfaction. I expected adaptive processes to be associated with mean warmth and with complementarity, and I employed multilevel modeling (MLM) using the Actor-Partner Interdependence Model (APIM) for distinguishable dyads (Kenny, Kashy, & Cook, 2006) to test associations between momentary interpersonal behaviors and marital satisfaction. This model accounts for the inherently dependent nature of marital satisfaction within dyads (i.e., husbands and wives reports of marital satisfaction tend to be highly correlated; Cook & Snyder, 2005). The APIM model also allows researchers to estimate the influence of one spouses standing on a particular construct with his/her own marital satisfaction (an actor effect), as well as on his/her spouse's marital satisfaction (a partner effect).

To test associations between adaptive processes and marital satisfaction, I first examined individual and relational pathways between husbands' and wives' mean warmth and selfreported marital satisfaction. I next examined pathways between dyadic predictors (e.g., dominance complementarity) and each partners' satisfaction. To test the hypothesis that warmth would moderate dominance complementarity in predicting marital satisfaction, I tested associations between each partners' satisfaction and: individual warmth, dyadic complementarity, and the interaction between warmth and complementarity in a single model.

My second study aim was to examine associations between enduring vulnerabilities and momentary interpersonal behaviors. I expected NEM, IIP elevation, and PD severity to be associated with maladaptive interpersonal processes, whereas I expected PEM to be associated with adaptive interpersonal processes. Given the possibility that one spouse's personality characteristics would influence the behavior of the other spouse (e.g., Sadler & Woody, 2003), I tested both actor and partner effects using APIM.

#### RESULTS

# Reliability and Descriptive Statistics

Reliability of joystick time-series data was comparable to what has been observed in past studies, with mean inter-rater reliabilities for dominance averaging .77 and mean inter-rater reliabilities for warmth averaging .64 (see Table 1 for full results). The within dyad correlation between husbands and wives reliability was small for warmth and moderate for dominance, suggesting that dominance is relatively more or less reliably coded within dyads.

Mean levels of warmth, as well as variability in warmth, tended to be highly correlated within dyads (Table 1). Husbands and wives did not significantly differ from one another in their mean levels of warmth displayed in any task. Unsurprisingly, however, spouses did display less warmth during the conflict discussions relative to the vacation and best things discussions  $(F_{(3,531)} = 28.35, p < .05)$ . Husbands' and wives' mean warmth averaged across the best things and vacation tasks (157.77; *SD* = 120.61) was higher than their mean warmth averaged across both conflict tasks (62.32; *SD* = 140.86); the effect size difference in mean warmth between conflict and non-conflict tasks was moderately large (*Cohen's d* = .73). This finding suggests that there is value in examining potential effects across tasks, rather than only in aggregate.

In general, mean levels of spouse dominance tended to be moderately to strongly negatively associated within dyads, and variability in dominance was generally highly associated within dyads, although a bit lower in the vacation task (see Table 2). Husbands and wives did not significantly differ from one another in their levels of dominance with one exception: wives were more dominant than husbands during their conflict discussion ( $t_{(266)} = 2.26$ , p < .05). Across dyads, the highest levels of mean dominance were observed in the vacation task (65.38; *SD* =

153.21), whereas the lowest was observed in the best things task (1.93; SD = 167.47). The effect size difference between these means was moderate (*Cohen's d* = .40).

Overall, these results highlight that joystick data are as reliable as we would expect based on past research, husbands and wives were generally correlated in the extent to which they were warm within tasks, and they tended to correlate negatively in the extent to which they were generally dominant within tasks. These results are consistent with concept of mean-level complementarity in dyads, which has frequently been studied in past literature. Also, consistent with expectable contextual factors, participants tended to be warmer when discussing the best things in their relationship and when planning a vacation than when discussing their relationship conflicts. Participants were also the most dominant when asked to plan something.

Past research indicates that dyads are often most satisfied when their warmth correspondence is high, but when their dominance correspondence is low, a dyadic pattern referred to as complementarity. Descriptive statistics for complementarity, examined as both mean-level correspondence between spouses as well as moment-to-moment correspondence between spouses, are presented in Table 3. Additionally, correlations between moment-tomoment and mean-levels of interpersonal behaviors are small to null, indicating that complementarity differs depending on how it is measured. For instance, across dyads, the degree to which couples displayed mean-level correspondence in dominance was generally unrelated to the degree to which they displayed momentary correspondence in dominance. This suggests that spouses can have low dominance complementarity across an interaction (e.g., both may behave somewhat dominantly), while simultaneously displaying high dominance complementarity within the interaction (e.g., they may take turns displaying more and less dominance, while still remaining actively engaged).

In addition to these results, I examined the consistency of dyadic behaviors across tasks by computing Chronbach's alpha across the four discussion tasks. Results indicated moderate stability in mean-level dyadic correspondence for both warmth ( $\alpha$  = .69) and dominance ( $\alpha$  = .64). In contrast, consistency in moment-to-moment dominance correspondence was high ( $\alpha$  = .80), whereas consistency in moment-to-moment warmth correspondence was low ( $\alpha$  = .37). These results suggest that dyad correspondence between partners' mean warmth and mean dominance appears to be a somewhat stable feature of relationships across contexts. In contrast, momentary correspondence in warmth was not a stable attribute in couples over time, although momentary dominance correspondence was a moderately consistent aspect of couples' conversations across contexts, suggesting that the extent to which individuals' negotiate and take turns, or not, in conversations may be a relatively stable aspect of their relationship. *Hypothesis 1.1: Observer ratings of warmth for both spouses will be associated with both spouses' self-reported marital satisfaction*.

Using APIM I tested the hypothesis that individuals' observed warmth would be associated with their marital satisfaction, actor effects, as well as their spouses' marital satisfaction, partner effects (see Figure 5). Wives' warmth was associated with both spouses' marital satisfaction across all tasks (see Table 4). Husbands' warmth was generally associated with his marital satisfaction. Notably, husbands' total actor effect for warmth, although significant, was less than half the strength of wives' total partner effect, indicating that husbands' marital satisfaction may be more associated with wives' warmth than with their own warmth. Husbands' warmth did not demonstrate a significant partner effect in total. Taken together, these results indicate that wives' warmth is strongly associated with both partners' satisfaction, whereas husbands' warmth is moderately associated with his own satisfaction.

*Hypothesis 1.2: Complementarity on both the warmth and dominance dimensions will be associated with both spouses' marital satisfaction.* 

I first tested the hypothesis that complementarity would relate to marital satisfaction by using APIM to examine <u>mean correspondence</u> as a dyadic (level 2) variable in predicting husbands' and wives' satisfaction (see Figure 6). As indicated in Table 4, dyadic correspondence in mean warmth, averaged across tasks, was significantly associated with marital satisfaction for husbands and wives. Mean-level dominance correspondence, in contrast, was not associated with marital satisfaction in any tasks.

Next I tested the hypothesis that complementarity would relate to marital satisfaction by using APIM to examine <u>momentary correspondence</u> as a dyadic (level 2) variable in predicting husbands' and wives' satisfaction (see also Table 4). Although mean-level warmth correspondence was associated with marital satisfaction for both partners, momentary warmth correspondence was unrelated to marital satisfaction. In contrast, momentary dominance correspondence was significantly associated with husbands' and wives' marital satisfaction across all tasks. Results did not significantly differ when using residual cross-correlations for warmth or dominance. As such, I used raw cross-correlations, which are more intuitively appealing as they reflect observed data, for all remaining analyses.

Taken together, results from these analyses suggest that satisfactory relationships are characterized by high levels of general dyadic correspondence in warmth, and moment-tomoment reciprocity in dominance. These results raise the possibility that dominance complementarity only characterizes satisfying relationships when both partners are warm, the next study hypothesis.

*Hypothesis 1.3: Mean levels of dyad warmth will moderate the association between marital satisfaction and complementarity on the warmth and dominance dimensions.* 

The association between complementarity and marital satisfaction was significant for two dyadic variables: mean-level warmth and moment-to-moment dominance. However, given that negative behavioral patterns such as negative reciprocity and demand-withdraw can be characterized as warmth and dominance complementarity, respectively, on the cold half of the IPC (see Figure 3), I also anticipated that mean warmth would moderate the association between complementarity and marital satisfaction. I tested this hypothesis using the APIM simple slopes method (Kenny, Kashy, & Cook, 2006), in which estimates of the influence of warmth and complementarity were computed at both high and low levels of husband, and wife, warmth (defined as 1z and -1z, respectively; see Figure 7).

Table 5 displays two models. The left side of the table shows main effects and interaction effects of mean warmth and mean-level warmth complementarity on marital satisfaction. Results of the full model indicate that individual warmth, but not dyadic warmth correspondence nor their interaction, is associated with marital satisfaction. Thus, consistent with the simple individual model, results indicate that only actor effects for husbands and wives, and partner effects of wives' warmth on husbands, explain significant variance in marital satisfaction.

The right side of Table 5 shows main effects and interaction effects of mean warmth and momentary dominance complementarity. In this model, mean-level warmth remains a significant predictor of marital satisfaction for both actors and for wives' partner effect on husbands' satisfaction. Although dominance complementarity does not remain a significant predictor of marital satisfaction in this model, interactions between mean warmth and momentary dominance

complementarity significantly predicted marital satisfaction. Graphs of these moderation effects are presented in Figures 8–12.

Results from the total scores (Figure 8) indicate that if both partners are generally warm, or if both partners are generally cold, dominance complementarity does not influence marital satisfaction for either partner. In the latter instance, marital satisfaction tends to be low for both partners. This follows given that, in the case of low dominance complementarity, couples are either both engaging in demanding/critical/quarrelsome behavior (both generally cold-dominant) or both withdrawing/distancing (cold-submissive), and in the case of high dominance complementarity, couples are likely engaging in demand-withdraw patterns (see Figure 3). In cases characterized by generally high husband warmth but low wife warmth, higher dominance complementarity decreases satisfaction for both partners. In contrast, in cases with higher wife warmth but lower husband warmth, higher dominance complementarity *increases* satisfaction for both partners. The most satisfied individuals are in relationships characterized by high wife warmth, relatively lower husband warmth, and high dominance complementarity. It is important to remember that given characteristics of the total score (i.e., mean and variability of total warmth scores – see Table 1), 'low warmth' indicates that a person's warmth was generally 'neutral' – hovering around the center (i.e., 0) of the warmth scale. Thus, these results suggest that when husbands are neutral, wives are warm, and they show moment-to-moment reciprocity in dominance, marital satisfaction is likely to be high. In contrast, when the wife is neutral or colder, neither husband warmth nor moment-to-moment reciprocity in dominance seems to counter this effect and marital satisfaction is likely to be low for both partners.

These results are based on total scores; Figures 9-12 examine whether this pattern is also observed across each of the four tasks. For both of the conflict discussions, the same pattern of

significant interactions was found (see Table 5 and Figures 9 and 10). For the best things discussion, wives' warmth was the only significant predictor of either partner's satisfaction (Table 5). This simple bivariate effect can be seen in Figure 11. Finally, for the vacation discussion, mean warmth was related to satisfaction for both patterns, irrespective of dominance complementarity; however, unlike with the total scores, in this task high dominance complementarity was related to higher levels of satisfaction when bother partners displayed less warmth. Also unlike the total scores, dominance complementarity was related to *increased* satisfaction when the husband was warmer and the wife was colder, but was related to *decreased* satisfaction when the wife is warmer and the husband is colder (see Figure 12). The differential results found in this task may be related to it being the first and/or generally the least emotionally evocative discussion couples engaged in during their lab visit.

Hypothesis 2.1: NEM, interpersonal problems, and total PD severity will be associated with lower levels of actor and partner warmth.

#### Negative Emotionality

Husband actor and partner effects for NEM and its lower-order facets were all significant in the predicted direction (Table 6). Husbands who described themselves as high in stress, alienation, and aggression behaved more coldly, and were with wives who behaved more coldly, across most tasks. Actor effects for wives were only observed for the NEM factor and the aggression facet, such that higher levels of these variables were associated with lower levels of wives' warmth. No partner effects of wives NEM on husbands' warmth were observed.

# Interpersonal Problems

As predicted, husbands' total problems were associated with his observed coldness; however, this effect was not found for wives. Husbands and wives with higher self-reported

problems related to being overly dominant behaved more coldly across tasks, particularly the conflict discussions. Husbands who reported more problems related to warmth behaved more warmly across tasks, whereas wives' self-reported warmth problems and warmth behaviors were unrelated. The only partner effect observed was that wives who reported higher levels of problems related to dominance were with husbands who behaved more coldly across tasks.

#### Personality Disorders

I expected individuals' PD symptoms to relate to their overall coldness. Actor effects of PD symptoms yielded stronger associations for husbands' coldness (total, paranoid, schizotypal, antisocial, borderline, histrionic, and obsessive-compulsive) than for wives' coldness (paranoid, antisocial) across interactions (Table 8). Wives who reported more symptoms of antisocial PD were with husbands who behaved more coldly, particularly during his conflict discussion; however no other partner effects for wives PDs were observed (Table 9). In contrast, partner effects were consistently observed between husbands' PD symptoms and their wives' coldness (total, paranoid, schizotypal, antisocial, borderline, histrionic, avoidant, and obsessive-compulsive). Taken together, these results suggest that husbands' PD symptoms were generally associated with both partners' coldness, whereas wives' PD symptoms had less of an influence on either partners' coldness.

#### *Hypothesis 2.2: PEM-C will be associated with higher levels of actor and partner warmth.*

As predicted, wives who reported higher levels of PEM-C were warmer across tasks (Table 10). Wives' PEM-C, driven by the wellbeing facet, was also associated with higher levels of husband warmth. Husbands who reported higher levels of social closeness were warmer across tasks; however, no other actor or partner effects were observed for husbands' PEM-C. As expected, no effects between PEM-A and warmth were observed (Table 11). Taken together,

these results support an association between wives' communion and their own and their husbands' tendencies to behave warmly during interactions.

# Exploratory Associations with Dominance

Lastly, given mixed past research, I did not predict associations between observed dominance and self-reported satisfaction or personality; however, I did explore possible associations among these variables.

### Marital Satisfaction

First I examined associations between observed dominance and self-reported marital satisfaction using APIM (see Table 4). Results indicated that the actor effect of husbands' dominance significantly predicted his marital satisfaction, and in fact, demonstrated stronger total associations with marital satisfaction than his actor effect of warmth. The partner effect of wives' mean dominance on husbands' marital satisfaction was also significant. Neither actor nor partner effects of dominance were associated with wives' satisfaction. These results suggest that husbands who exhibit higher levels of mean dominance, and husbands with wives who also tend to exhibit higher levels of mean dominance, report greater satisfaction in their marriages.

#### Personality Traits (NEM, PEM, & CON)

APIM associations between observed dominance and self-reported NEM and its facets are presented in Table 6. Wives with higher self-reported levels of aggression tended to behave more dominantly across tasks. No other actor effects were consistently observed. Partner effects indicated that husbands who reported higher levels of NEM, specifically alienation and aggression, were with wives who tended to behave more submissively. As expected, no significant actor or partner effects were observed between dominance and PEM-C (Table 10). With respect to PEM-A, higher levels of wives' social potency was associated with higher levels

of wives' dominance and lower levels of husbands' dominance (Table 11). Lastly, higher levels of wives' CON were associated with lower levels of wives' dominance but higher levels of husbands' dominance (Table 12). Actor effects were also observed between wives' self-reported traditionalism and control and their observed dominance.

### Interpersonal Problems

No actor or partner effects were observed between total interpersonal problems and dominance, however, actor effects were observed between higher levels of self-reported dominance problems and higher levels of observed dominance for both husbands and wives (Table 7). Complimentary partner effects for these variables were also observed, such that husbands' and wives' with high self-reported dominance problems were with spouses observed to behave submissively. Wives with self-reported problems related to warmth were also observed to behave more dominantly across tasks.

### Personality Disorders

Lastly, I examined associations between observed dominance and self-reported PD symptoms among spouses (Tables 8 & 9). Husbands' symptoms of obsessive-compulsive PD were associated with their tendency to behave dominantly across tasks. Wives who rated themselves as relatively high in borderline and histrionic PD symptoms were observed to behave more dominantly, especially when discussing their own conflict. Partner effects indicated that husbands with higher self-reported PD symptoms, particularly of borderline and paranoid PDs, were with wives' with lower levels of observed dominance. No other effects between selfreported PDs and behavioral displays of dominance were observed.

#### DISCUSSION

Karney and Bradbury's (1995) proposal of the VSA model has led to an increased synthesis among researchers interested in better understanding the factors that lead to marital satisfaction. Despite many advantages, the VSA model has been criticized on the grounds that its most important proposed mechanism, *adaptive processes*, is hard to define and perhaps harder to measure. The overarching aim of this study was to test the potential of a momentary assessment technique, guided by interpersonal theory and structured by the IPC, as an effective means of operationalizing 'adaptive processes' in the VSA model. An observational coding system was used to rate individuals' momentary dominance and warmth across four distinct discussion tasks and data obtained from this method were used to test the hypotheses that overall warmth, momentary correspondence in warmth, and momentary reciprocity in dominance would relate to actor and partner marital satisfaction and personality characteristics.

# Interpersonal Behaviors across Tasks

Although the primary focus of this study was to test associations between momentary behaviors and marital satisfaction and personality characteristics, researchers have not previously used the joystick method to obtain ratings of interpersonal behaviors across multiple interactions. Not surprisingly, spouses were colder during the conflict discussions than they were during the vacation and best things discussions, suggesting that the joystick method is sensitive to capturing contextual differences across varied environments. Relatively minimal differences were observed in mean levels of dominance across tasks or displayed by husbands and wives.

Examinations of dyadic behaviors across tasks revealed that average levels of husbands' and wives' warmth were highly associated within dyads whereas average levels of husbands' and wives' dominance were negatively associated within dyads. Mean differences in spouses' levels

of warmth and dominance were moderately consistent across tasks. These findings suggest that the dyadic pattern of complementarity emerged at the level of *characteristic behaviors* across tasks, and that mean-level complementarity in warmth and dominance is a relatively stable feature among married dyads. Additionally, the amount that husbands and wives varied in their warm (and dominant) behaviors also tended to be highly correlated within dyads, indicating that some dyads tend to be more variable in their behaviors whereas other dyads tend to be more rigid. For instance, several couples displayed both warm and cold behaviors during the conflict tasks, but some couples engaged almost exclusively in cold behaviors, whereas other couples avoided engaging in critical behaviors even during discussions of a conflict.

At the moment-to-moment level, dominance complementarity within dyads was highly consistent across tasks, indicating that the extent to which dyads negotiate power is typically consistent across conversations. Importantly, however, mean-level discrepancies in dominance and momentary correlations in dominance were not related within dyads. That is, the extent to which dyads differed in their overall levels of dominance was unrelated to their moment-tomoment dominance reciprocity. This suggests that mean-level dominance complementarity may be orthogonal to moment-to-moment dominance complementarity.

In contrast to momentary dominance correspondence, momentary correspondence in warmth was not stable across tasks. Within tasks, dyad discrepancies in warmth were modestly associated with momentary warmth correspondence. Thus, the extent to which dyads were generally similar in their overall levels of warmth was associated with the extent to which they tended to vary together from one moment to the next in warmth within a task, even though momentary warmth complementarity was less consistent than mean-level complementary within dyads from one discussion to the next. These results further illustrate that different measurements

of complementarity reveal different types of dyadic processes (e.g., Sadler, Ethier, & Woody, 2010), and these processes may have differing effects on relationship functioning.

# Interpersonal Style and Marital Satisfaction

The first aim of this study was to understand better the associations between ongoing interpersonal processes and marital satisfaction. I tested the hypothesis that observed levels of both spouses' warmth would relate to both spouses' self-reported marital satisfaction. Across tasks, wives' warmth was consistently associated with both partners' marital satisfaction. Husbands' warmth was associated with his own satisfaction, although this association was weaker than the association between wives' warmth and husbands' satisfaction. Surprisingly, his warmth was not associated with his wives' satisfaction.

I also explored associations between dominance and marital satisfaction and found that both husbands' and wives' dominance was associated with husbands' marital satisfaction, although these effects were smaller than the effects observed for warmth. Neither partners' dominance was consistently associated with wives' satisfaction. Taken together, results from this study indicate that wives' warmth is a robust predictor of both partner's satisfaction, and wives' and husbands' dominance are also associated with husbands' satisfaction.

### Complementarity and Marital Satisfaction

The next set of study hypotheses involved the prediction that higher levels of complementarity would be associated with higher levels of marital satisfaction. Mean-level results indicated that correspondence in warmth between members of a dyad related to marital satisfaction for both partners, but this effect washed out after accounting for individual warmth. That is, dyadic similarity in warmth was unrelated to marital satisfaction after accounting for the overall effects of warmth on satisfaction. Momentary correspondence in warmth did not relate to satisfaction for either partner, and was not consistent within dyads across tasks.

Mean-level correspondence in dominance was unrelated to satisfaction for husbands or wives; however, momentary reciprocity in dominance predicted satisfaction for both partners. These results were more nuanced when considering interactions with husbands' and wives' mean warmth. Results from analyses examining potential moderating effects of mean warmth indicated that, when both partners were warm, marital satisfaction was generally high and dominance complementarity did not further increase satisfaction. Likewise, if neither partner was warm, satisfaction was generally low and dominance complementarity did not improve it. Interaction effects emerged when husbands' and wives' mean warmth was relatively discrepant. When wives were warm and husbands somewhat colder, higher dominance complementarity was associated with greater marital satisfaction for both partners. This suggests that satisfaction tends to be highest when wives are warm and husbands and wives reciprocate their levels of dominance from one moment to the next.

The reverse pattern was found in couples characterized by high husband warmth and relatively low wife warmth. In these cases, higher dominance complementarity was associated with lower levels of satisfaction for both partners. It is possible that, in many of these dyads, low wife warmth and high dominance complementarity manifests as a form of demand-withdraw. This pattern might partially explain why relatively low wife warmth, even in the context of high husband warmth and high dominance complementarity, is associated with low levels of both partners' satisfaction.

# Momentary Behaviors and Personality Traits

The second aim of the study was to better understand how warmth, an *adaptive process* in marriages, relates to personality characteristics. Results from analyses using temperament traits indicated that husbands' self-reported NEM was associated with less observed warmth among both husbands and wives. Thus, husbands who reported higher levels of NEM, including stress, alienation, and aggression, not only tended to behave more coldly across all discussions, particularly their own conflict, but these husbands were also with wives who tended to behave more coldly across tasks, particularly the conflict discussions. With respect to dominance, wives of husbands who reported higher levels of alienation and aggression tended to behave more submissively across tasks. These results highlight ways in which one partners' characteristic traits influence not only their own behavior in close relationships, but also their partners' behaviors. More specifically, study results suggest that dyads characterized by higher levels of distress, particularly among husbands, are also characterized by lower levels of warmth.

Results from this study are cross-sectional, and thus do not permit distinctions regarding the directionality of associations between traits, behaviors, and satisfaction. However, altogether the pattern of results obtained is suggestive of a vicious cycle whereby husbands' enduring vulnerabilities, such as frequently feeling stressed, angry, and isolated, can lead *both partners* to behave more coldly in their ongoing interactions. This coldness, particularly when displayed by wives, is associated with lower levels of marital satisfaction for *both partners*, which likely leads them to feel increasingly stressed, angry, and isolated, thereby reaffirming a maladaptive cycle.

Additional analyses of temperament traits indicate that wives with higher self-reported levels of communal positive emotionality were warmer, and were also with husbands who were warmer, across discussions. Husbands who reported higher levels of social closeness were

warmer across tasks, but in contrast to negative emotionality, no partner associations were observed for husbands with regards to their positive emotionality. As expected, no associations were observed between communal positive emotionality and dominance.

In contrast, and consistent with expectations, wives' agentic positive emotionality, particularly her self-reported tendencies to be persuasive and noticed (social potency), was associated with higher levels of wives' dominance and lower levels of husbands' dominance. Unexpectedly, however, no associations were observed between husbands' report of agentic positive emotionality and either husbands' or wives' observed dominance. In general results from this study suggest that wives' positive emotionality may have relatively more influence on both spouses' behaviors than husbands' negative emotionality. This is in contrast to negative temperament, in which husbands' negative emotionality was more strongly associated with both partners' behaviors than wives' negative emotionality.

With respect to self-reported tendencies to inhibit impulses and engage in conventional, conservative behavior, results from this study suggest that wives who report higher levels of constraint tend to behave more submissively across tasks. In particular, wives' who described themselves as generally cautious and relatively traditional in their personal and family values tended to behave less dominantly across tasks. Wives who reported higher levels of harm avoidance tended to behave more coldly, particularly when discussing their conflict and the best things in their relationship. Given that the MPQ harm avoidance scale primarily assesses content involving a preference for tedium over risk, this finding may suggest that wives with high proclivities to avoid harm may be less likely to risk the vulnerability that is often associated with expressed warmth and connection. It is ironic and unfortunate that wives' who are more harm avoidant are also colder, and that coldness tends to increase harm within marriages.

# Momentary Behaviors and Interpersonal Problems

Examinations of self-reported interpersonal problems indicated that husbands' total problems was related to their coldness across tasks; however, this effect was not found for wives. Husbands with higher self-reported problems related to being overly warm were also observed to behave more warmly across tasks; however, wives self-reported warmth problems were unrelated to their observed warmth, but were instead associated with their observed levels of dominance. These results suggest that associations between problematic variants of a behavior, like warmth, can have complicated associations with normative variants of that same behavior, and that one moderator of this complex association can be gender. For instance, wives may perceive their dominant behavior as a way in which they express care and concern for their partner, and thus are too kind, whereas husbands may tend to perceive their displays of warmth as ways in which they seek to please others too much.

Results were more similar across husbands and wives with respect to self-reported dominance problems and observed behavior. For both partners, self-reported problems related to being overly dominant were associated with higher levels of observed dominance and lower levels of observed warmth. These results indicate that the general tendency to have problems related to assertiveness may manifest specifically as distant and disconnected behavior in spousal relationships.

Results for partner effects indicated that wives' self-reported dominance problems were associated with lower levels of husband warmth and dominance. Thus, wives who reported higher levels of relationship problems related to dominance were with husbands who tended to behave more coldly and submissively across tasks. Considered with results of actor effects, this finding may reflect a global level demand-withdraw pattern, whereby wives who report

dominance problems indeed behave more dominantly, but also behave more coldly, and in turn have husbands who tend to compliment this position with cold and submissive behavior, thereby reinforcing the demand-withdraw pattern.

# Momentary Behaviors and Personality Disorders

Analyses examining associations between self-reported personality pathology and observed interpersonal behaviors indicated that husbands', but not wives', coldness was associated with a higher total number of self-reported PD symptoms. Likewise, whereas actor effects were observed between husbands' coldness and 6/10 PD dimensions, actor effects of wives' coldness were only observed for 2/10 PD dimensions. Results for partner effects further indicated that husbands' PD symptoms were more strongly related to wives' behaviors than vice-versa. Specifically, partner effects were observed between wives' coldness and 6/10 husband PD dimensions, whereas the only partner effect of wives' personality pathology was that her antisocial PD symptoms were associated with higher levels of husbands' coldness (as well as her own coldness, suggesting a complementary pattern).

Compared to results for warmth, relatively few actor or partner effects were observed between PD symptoms and dominance. Actor effects indicated that husbands who reported higher levels of obsessive-compulsive PD, and wives who reported higher levels of borderline and histrionic PDs, behaved more dominantly across tasks. Husbands' total, paranoid, and borderline PD symptoms were also associated with lower levels of wives' dominance, whereas no partner effects of wives' personality pathology on husbands' dominance were observed.

All together, results examining associations between PDs and spousal behaviors indicate that husbands who report more total PD symptoms tend to behave coldly and to have wives who withdraw (i.e., behave coldly and submissively). These results, which indicate stronger

associations between self-reported PDs and observed coldness for husbands than for wives, mirror aforementioned findings related to spouses' self-reported interpersonal problems and their observed coldness, and in this way are consistent with a broad literature which describes interpersonal problems as the core impairment in personality disorders (e.g., Benjamin, 1996; Hopwood, Wright, Ansell, & Pincus, 2013).

### Momentary Measurement of Demand-Withdraw and Negative Reciprocity

Descriptions of demand-withdraw and negative reciprocity in clinical theory and research describe these processes as *dyadic patterns* that unfold over time. I have argued that these patterns can be conceptualized as dominance complementarity (demand-withdraw) and warmth complementarity (negative reciprocity) when these processes unfold on the cold half of the IPC. In this study I examined complementarity as a pattern that can emerge at two levels: overall and moment-to-moment. To highlight how demand-withdraw and negative reciprocity can unfold as complementarity on the cold half of the IPC, I graphed and examined complementarity at both of these levels in two couples who report high levels of marital dissatisfaction.

Figure 13 displays the interaction between a dyad (marital satisfaction *z*-scores = -2.32 [husband] and -2.00 [wife]) discussing the best things in their relationship. Data from this interaction are displayed in two ways: Panels A and B are density plots which provide information about this husband's and wife's overall levels of warmth and dominance during their interaction; Panel C is a time-series graph of each partners' warmth from one moment to the next. Panels A and B indicate that both partners tended to behave in a cold and submissive manner, and that for both of them, colder behavior tended to co-occur with more submissive behavior. It becomes more evident that this couple engaged in a negative-reciprocity pattern when looking at the time-series graph for this interaction, which indicates that increases in

coldness tended to occur in conjunction for these partners. Numerically, this dyads' average warmth during this discussion was -152.18 (SD = 184.24), indicating that their behaviors generally unfolded on the cold half of the IPC. Their warmth complementarity measured as mean-level correspondence was 6.44, which suggests that were considerably more similar in their mean levels of warmth than most dyads in this sample were during this discussion (see Table 3). Likewise, this couples' momentary complementarity in warmth was high (cross-correlation = .96 using raw data and .70 using residual data removing the linear time trend). These values were also much higher than the sample averages (Table 3), indicating that not only were both partners' similarly cold, but also that their momentary expressions of coldness tended to fuel one another and co-occur.

Figure 14 displays the interaction between a different dyad (marital satisfaction *z*-scores = -1.92 [husband] and -2.22 [wife]) discussing the husband's conflict. Data from this interaction are displayed in the manner described above except, for this dyad, the time-series data in Panel C represent each partners' dominance during this interaction. In these graphs, Panel A indicates that the husband was generally cold and dominant during this discussion, whereas Panel B shows that his wife tended to behave in a cold and submissive manner. These graphs illustrate mean-level dominance complementarity unfolding on the cold half of the IPC. Indeed, this couples' average warmth during this discussion was -290.92 (SD = 177.21) and both remained almost exclusively on the cold half of the IPC during this interaction. Panel C further highlights how this couple engaged in a demand-withdraw process by showing how increases in husbands' dominance are consistently met with decreases in the wife's dominance. This couple's momentary dominance correspondence was comparable to the sample mean (raw cross-correlation = -.63). These graphs are useful for highlighting

how this otherwise normative pattern of complementarity can unfold as a demand-withdraw process when it occurs on the cold half of the IPC, and particularly when one partner is consistently the more dominant partner, rather than partners' taking turns commanding a situation.

### Limitations and Future Directions

This was the first study to use the interpersonal joystick method to examine behaviors across multiple interactions in married dyads, and thus the expected stability of these measurements over time is unknown. This study also included discussion tasks that involved different content, making it difficult to discern to what extent behavioral instability may have been a function of: context, predictable instability in behavior over time and across situations, and/or measurement error. Future research will benefit from continued examination of the stability of momentary interpersonal behaviors over time and across contexts and partners.

Observational coding methods such as the one used in this study offer many advantages compared to other methods, however, they are not without their own set of limitations. For instance, although I took several steps to minimize coder fatigue, coders were assigned an average of eight hours of videos to code per week, and they were likely fatigued and less attentive to the task at some points (e.g., when other academic and/or personal stressors were high). I attempted to counter such sources of error by giving coders one-month notice on their deadlines so they could plan their coding schedule in accord with their other obligations. I also conducted bi-weekly meetings during which coders could share effective strategies for maximizing attention, particularly when videos were difficult to hear, boring to watch, etc. Nonetheless, error as a result of various forms of coder bias and unreliability was inevitably present in this data and may have minimized our ability to find true and meaningful effects.

This study involved testing a number of hypotheses. Conventional cut-offs of nullhypothesis significance testing were employed (i.e., *p*-values less than .05 were regarded significant), and given the large number of analyses, it is likely that some significant results were obtained by chance. Generally, however, results were only interpreted when they consistently demonstrated at least small effect sizes across tasks.

In many respects, this sample was healthy and high functioning. The majority of participants were married, employed, and effectively raising their children. Spouses endorsed relatively low rates of some variables of interest, most notably symptoms of personality disorders. Relationship satisfaction was also relatively high, particularly compared to treatment seeking samples. As such, research on more severely distressed populations will be informative for better understanding associations between psychopathology and marital satisfaction. More research on momentary expressions of patterns such as demand-withdraw could also valuably inform treatment of these patterns in therapy.

Although I collected intensive longitudinal data, I conducted most analyses using crosssectional designs. This limited my ability to determine the direction of influence between behaviors and satisfaction. Figures 13 and 14 provide preliminary indications regarding how data obtained using the joystick method can be used to model the vast range of behavioral patterns displayed across couples. Consistent with interpersonal theory, complementarity was generally observed across tasks. However, couples ranged considerably in the extent to which they adhered to patterns of complementarity versus the extent to which they displayed different behavioral patterns (see Table 3). Future directions with this data could utilize idiographic, time-series analyses capable of answering questions like: how does a wife who reports high levels of negative emotionality and borderline personality and low levels of constraint react when her

husband withdraws from her? Criticizes her? Nurtures her? Are these reactions consistent patterns within a given person or dyad? Are they consistent over time and across contexts? When they differ, is there a consistent pattern to these deviations? These questions provide a glimpse into some of the many possible future directions for applying momentary assessment of interpersonal behavior to the improved understanding of marital satisfaction.

#### **Conclusions**

This study highlights the value of using the interpersonal joystick method (Lizdek et al., 2012) to measure more and less adaptive processes in relationships as they unfold from one moment to the next. In addition to reliably capturing real-time behavior, this method is rooted in an empirically based model of interpersonal behavior that is tethered to a rich network of theoretical predictions (e.g., that complementarity is a "baseline behavior" that commonly unfolds, even though the degree to which this is true varies considerably across dyads). Further, this model accommodates existing conceptualizations of detrimental relational processes such as demand-withdraw and negative reciprocity, and provides a map and a method for measuring these processes as they occur in real-time interactions.

Despite these advantages of the joystick method, relative to methods such as self-report, it is a time-intensive assessment tool. However, results from this study highlight the numerous and often complex ways in which joystick rated behaviors display differential associations with self-reported behaviors across gender and across actors and partners. Thus, these behavioral data provide additional insight into ways in which self-reported behaviors manifest in important interpersonal relationships. Perhaps more importantly, unlike traditional assessment methods which tend to aggregate data over time, joystick data permit analyses that examine change over time, and thus these data can be used to model and elucidate processes as they unfold between

individuals. Future researchers are encouraged to continue exploring optimal methods for quantifying the time-series data generated by the joystick method. Promising methods include dynamic systems modeling (e.g., Boker & Laurenceau, 2006), state-space grids (Hollenstein, 2013) and time-varying effect models (e.g., Tan, Shiyko, Li, Li, & Dierker, 2012).

This study adds to an expanding body of literature which highlights the usefulness of measuring not just individual pathways between variables, but also pathways between individuals (i.e., relational effects). The current study replicates existing research indicating that behaviors are influenced not only by the personality of actors, but also by the personality and behaviors of their partners. Simply put, relationships are bi-directional experiences. However, this study and others also suggest that relationship processes are not necessarily gender or context invariant. For instance, in this study wives' warmth was a better predictor of both partners' satisfaction than husbands' warmth, and husbands' general levels of distress were more strongly associated with both partners' coldness than wives' general distress. Such findings point to compelling future hypotheses such as: Husbands' enduring personality vulnerabilities will be more highly associated with bi-directional spousal coldness than wives', whereas wives' adaptive characteristics and behaviors will be more strongly associated with relationship sources are strongly associated with relationship sources are strongly associated with bi-directional spousal coldness than wives', whereas wives' adaptive characteristics and behaviors will be more strongly associated with relationship

This study provides an initial illustration of how interpersonal theory and momentary assessment can be usefully integrated with existing models of marital functioning, and several results merit replication and more nuanced attention in future research. The consistent associations between wives' warmth and both partners' satisfaction bring to mind various colloquial adages about the importance of "keeping wives' happy," however empirical questions regarding the overlap between momentary expressions of warmth and momentary expressions of

"happiness" are yet to be examined and offer exciting avenues for future research. In general, ongoing research aimed at further testing these and other hypotheses would provide a valuable contribution to our understanding of marital satisfaction.

Overall, results from this study highlight the value of measuring ongoing interpersonal processes as they unfold in real-time, and of tethering these measurements to well-validated theoretical models. Specifically, this study suggests that the IPC and interpersonal theory can be usefully integrated into the VSA model to provide a framework for measuring adaptive processes as they unfold between couples. These results also highlight the importance of considering individual, partner, and dyadic pathways when seeking to understand relationship processes. Although the present study focused on these pathways using nomothetic analyses, I also used two case studies to demonstrate how interpersonal joystick data can also be used to examine idiographic and relational patterns that unfold across specified dyads. This method could have valuable implications for studying interpersonal processes as they unfold over multiple sessions in the course of counseling among treatment seeking dyads. Ultimately, the pattern of results obtained in this study not only adds to a large body of literature indicating that personality characteristics, interpersonal behaviors, and relationships satisfaction are intricately associated, but also highlights promising avenues for future investigations of nomothetic, dyadic, and idiographic processes associated with satisfaction in important relationships.

APPENDICES

# APPENDIX A: TABLES

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	wa	rmth Mean		warmth	variability (SD)		<u>warmth Kellability (a)</u>			
Discussion	Husbands'	Wives'	r	Husbands'	Wives'	r	Husbands'	Wives'	r	
Total	<b>102.86</b> (109.65) -227.39 – 274.73	<b>116.16</b> (106.93) -437.79 – 275.61	.69	<b>64.42</b> (24.98) 33.63 – 169.73	<b>68.57</b> (26.44) 34.34 – 190.69	.63	<b>.63</b> (.08) .45 – .84	<b>.65</b> (.08) .42 – .89	.21	
Best Things	<b>152.78</b> (108.44) -223.73 – 347.40	<b>162.76</b> (123.57) -334.47 – 334.47	.70	<b>60.08</b> (28.64) 21.91 – 204.87	<b>61.92</b> (31.19) 23.70 – 197.51	.60	<b>.66</b> (.14) .26 – .96	<b>.65</b> (.15) .27 – .98	.24	
Vacation	<b>143.53</b> (137.74) -515.12 – 390.42	<b>172.01</b> (112.68) -380.87 – 365.69	.52	<b>62.13</b> (33.61) 16.25 – 214.83	<b>62.06</b> (29.07) 20.25 – 225.05	.63	<b>.63</b> (.14) .24 – .92	<b>.65</b> (.13) .30 – .94	.33	
Husband Conflict	<b>58.83</b> (156.08) -403.45 – 365.16	<b>65.44</b> (153.88) -564.07 – 358.30	.68	<b>75.41</b> (40.44) 24.64 – 220.12	<b>83.41</b> (46.81) 19.65 – 240.81	.63	<b>.63</b> (.16) .18 – .92	<b>.64</b> (.15) .24 – .96	.33	
Wife Conflict	<b>56.74</b> (128.06) -388.51 – 293.24	<b>68.27</b> (125.41) -471.77 – 315.75	.71	<b>58.57</b> (33.12) 16.82 – 195.09	<b>66.54</b> (35.73) 17.79 – 195.32	.55	<b>.61</b> (.14) .23 – .92	<b>.64</b> (.15) .24 – .92	.21	

Table 1. Mean, (SD), Range, and Reliability of Warmth Time-Series across Tasks

*Note:* Joystick data range from -1000 to 1000 for warmth and dominance. Within each column, bold values indicate sample means, parenthetical values are sample standard deviations, and beneath are sample ranges. The *r* values in each section of the table represent Pearson correlation values between husbands and wives across the sample.

	Dom	inance Mean		Dominance	Variability (SD)		Dominance Reliability (α)			
Discussion	Husbands'	Wives'	r	Husbands'	Wives'	r	Husbands'	Wives'	r	
Total	<b>37.90</b> (136.14) -304.94 – 394.76	<b>40.57</b> (127.31) -403.70 – 324.53	62	<b>148.57</b> (30.40) 98.05 – 248.39	<b>147.42</b> (34.09) 75.87 – 270.84	.71	<b>.77</b> (.06) .59 – .89	<b>.77</b> (.06) .55 – .89	.49	
Best Things	<b>5.08</b> (155.21) -532.10 - 377.52	<b>-1.22</b> (151.21) -463.05 – 313.18	49	<b>151.11</b> (47.43) 69.04 – 320.83	<b>149.46</b> (49.62) 63.67 – 332.00	.74	<b>.81</b> (.09) .55 – .93	<b>.81</b> (.09) .34 – .96	.41	
Vacation	<b>64.81</b> (167.26) -322.04 – 407.36	<b>65.95</b> (167.67) -384.69 - 414.42	65	<b>121.60</b> (36.14) 60.34 – 243.54	<b>119.00</b> (38.10) 61.74 – 296.85	.48	<b>.72</b> (.11) .32 – .91	<b>.72</b> (.12) .32 – .91	.37	
Husband Conflict	<b>48.48</b> (179.63) -444.42 – 551.80	<b>36.00</b> (176.03) -552.03 – 536.12	63	<b>166.36</b> (52.31) 72.23 – 392.35	<b>168.93</b> (53.51) 70.32 – 316.01	.71	<b>.78</b> (.11) .46 – .95	<b>.78</b> (.09) .40 – .93	.48	
Wife Conflict	<b>25.79</b> (152.42) -466.93 - 500.17	<b>65.31</b> (132.80) -368.65 – 359.04	42	<b>155.80</b> (57.10) 62.89 – 339.17	<b>150.97</b> (58.36) 64.20 – 354.41	.72	<b>.78</b> (.10) .37 – .96	<b>.77</b> (.10) .48 – .97	.45	

Table 2. Mean, (SD), Range, and Reliability of Dominance Time-Series across Tasks

*Note:* Joystick data range from -1000 to 1000 for warmth and dominance. Within each column, bold values indicate sample means, parenthetical values are sample standard deviations, and beneath are sample ranges. The *r* values in each section of the table represent Pearson correlation values between husbands and wives across the sample.

	Warmth	<b>Complementarity</b>		<b>Dominance Complementarity</b>					
Discussion	Cross-Correlation	Mean Discrepancy	r	Cross-Correlation	Mean Discrepancy	r			
Total	<b>.46</b> (.18) 01 – .88	<b>59.89</b> (62.71) 0.24 – 362.46	27	<b>52</b> (.26) 86 – .81	<b>187.91</b> (144.22) 5.24 – 746.59	10			
Best Things	<b>.47</b> (.34) 49 – .96	<b>63.15</b> (66.59) 0.65 – 383.96	32	<b>62</b> (.33) 98 – .89	<b>206.44</b> (163.83) 4.14 – 713.89	.05			
Vacation	<b>.48</b> (.31) 49 – .96	<b>86.32</b> (94.05) 0.11 – 763.05	17	<b>52</b> (.35) 96 – .74	<b>245.58</b> (178.94) 0.38 – 791.00	10			
Husband Conflict	<b>.48</b> (.31) 49 – .96	<b>85.19</b> (89.73) 0.35 – 576.28	25	<b>50</b> (.36) 96 – .89	<b>188.70</b> (153.28) 0.65 – 677.82	18			
Wife Conflict	<b>.45</b> (.29) 5893	<b>67.03</b> (70.54) 0.09 - 341.73	16	<b>47</b> (.31) 94 – .88	<b>245.58</b> (178.94) 0.38 - 791.00	09			

Table 3. Mean, (SD), and Range of Dyadic Behaviors across Tasks

*Note:* Within each column, bold values indicate dyad means, parenthetical values are dyad standard deviations, and beneath are dyad ranges. The *r* values in each section of the table represent across sample Pearson correlation values between cross-correlations and mean discrepancies across dyads.

			<u>Warmth</u>			Dominance					
		Best		Husband	Wife		Best		Husband	Wife	
	Total	Things	Vacation	Conflict	Conflict	Total	Things	Vacation	Conflict	Conflict	
Hintercept	03(.06)	03(.06)	04(.07)	03(.07)	05(.07)	02(.08)	03(.08)	02(.08)	03(.08)	04(.08)	
Wintercept	04(.07)	$04_{(.07)}$	01 <sub>(.08)</sub>	03(.07)	04(.07)	02(.08)	03(.08)	$.00_{(.08)}$	03(.08)	02(.08)	
Actor Effects											
$H \rightarrow H_{MarSat}$	<b>.20</b> (.08)	<b>.18</b> (.10)	<b>.17</b> (.08)	<b>.28</b> (.09)	.06(.10)	<b>.30</b> (.10)	<b>.22</b> (.09)	<b>.29</b> (.11)	.16(.11)	<b>.24</b> (.08)	
$W \rightarrow W_{MarSat}$	<b>.50</b> (.09)	<b>.48</b> (.09)	<b>.30</b> (.10)	<b>.38</b> (.09)	<b>.46</b> (.10)	.09(.11)	01 <sub>(.10)</sub>	.15(.11)	02(.11)	$.11_{(.10)}$	
Partner Effects											
$W \rightarrow H_{MarSat}$	<b>.45</b> (.09)	<b>.39</b> (.09)	<b>.36</b> (.10)	<b>.34</b> (.09)	<b>.43</b> (.10)	<b>.22</b> (.10)	.10(.09)	.21(.11)	.03(.11)	<b>.27</b> (.09)	
$H {\rightarrow} W_{MarSat}$	.13(.09)	.08(.10)	<b>.18</b> (.08)	<b>.21</b> (.09)	.02(.10)	.19(.10)	.13(.09)	<b>.24</b> (.11)	.07(.11)	<b>.18</b> (.09)	
Dyad Effects											
$D_{mean} \rightarrow H_{MarSat}$	<b>.20</b> (.08)	<b>.18</b> (.08)	<b>.16</b> (.08)	<b>.17</b> (.08)	$.10_{(.08)}$	$.02_{(.08)}$	.03(.08)	03(.08)	$.03_{(.08)}$	.07(.08)	
$D_{mean} \rightarrow W_{MarSat}$	<b>.20</b> (.08)	.13(.08)	<b>.17</b> (.08)	.13(.08)	.12(.08)	<b></b> 01 <sub>(.08)</sub>	02(.08)	01 <sub>(.08)</sub>	$.05_{(.08)}$	.02(.08)	
$D_{moment} \rightarrow H_{MarSat}$	.04(.08)	.13(.08)	.01(.08)	07 <sub>(.08)</sub>	.00(.08)	<b>31</b> (.08)	<b>28</b> (.08)	<b>36</b> (.08)	<b>17</b> (.08)	<b>17</b> (.08)	
$D_{moment} \rightarrow W_{MarSat}$	$.04_{(.08)}$	$.08_{(.08)}$	$.00_{(.08)}$	$05_{(.08)}$	$.04_{(.08)}$	<b>24</b> (.08)	<b>20</b> (.08)	<b>31</b> (.08)	<b>14</b> (.08)	<b>14</b> (.08)	

Table 4. APIM Associations between Husbands' and Wives' Marital Satisfaction and Individual and Dyadic Warmth and Dominance

*Note:* D = Dyad, H = Husband, W = Wife, Mean = mean-level correspondence between spouses, and Moment = moment-to-moment correspondence between spouses. Values represent standardized Beta ( $\beta$ ) estimates from multi-level regression models. Standard Errors (*SE*) of these estimates are in parenthesis. Bold values indicate p < .05.

	D=D	yad Mean	Warmth C	Correspond	ence	<b>D=Dyad Momentary Dominance Correspondence</b>				
		Best		Husband	Wife		Best		Husband	Wife
	Total	Things	Vacation	Conflict	Conflict	Total	Things	Vacation	Conflict	Conflict
H <sub>intercept</sub>	06(.07)	04(.08)	06(.08)	.01(.07)	06(.08)	01 <sub>(.07)</sub>	01 <sub>(.07)</sub>	.02(.08)	03(.07)	02(.07)
Wintercept	07 <sub>(.07)</sub>	04(.08)	04(.08)	02(.08)	06(.08)	05(.07)	03(.07)	$.05_{(.08)}$	04(.07)	$04_{(.08)}$
Actor Effects										
$H_{warm} \rightarrow H_{MarSat}$	<b>.41</b> (.14)	.30(.16)	<b>.25</b> (.12)	<b>.46</b> (.14)	.14(.18)	<b>.18</b> (.09)	.15(.11)	<b>.19</b> (.08)	<b>.25</b> (.09)	$.05_{(.10)}$
$W_{warm} {\rightarrow} W_{MarSat}$	<b>.40</b> (.14)	<b>.50</b> (.16)	.20(.12)	<b>.35</b> (.15)	<b>.55</b> (.17)	<b>.57</b> (.10)	<b>.48</b> (.10)	.18(.10)	<b>.42</b> (.10)	<b>.47</b> (.11)
Partner Effects										
$W_{warm} \rightarrow H_{MarSat}$	<b>.28</b> (.14)	<b>.33</b> (.15)	<b>.26</b> (.12)	.20(.15)	<b>.39</b> (.17)	<b>.45</b> (.09)	<b>.36</b> (.10)	<b>.22</b> (.10)	<b>.35</b> (.09)	<b>.40</b> (.11)
$H_{warm} \rightarrow W_{MarSat}$	.27(.14)	.12(.17)	.24(.12)	<b>.33</b> (.14)	05(.18)	.12(.09)	.07(.12)	<b>.19</b> (.08)	.18(.09)	.01(.10)
Dyad Effects										
$D \rightarrow H_{MarSat}$	02(.11)	.06(.10)	23(.13)	.17(.11)	.05(.10)	06(.08)	.01(.09)	<b>.22</b> (.09)	.02(.08)	02(.08)
$D \rightarrow W_{MarSat}$	05 <sub>(.11)</sub>	.12(.10)	25(.13)	.17(.11)	.02(.10)	09(.08)	04(.09)	.17(.09)	03(.08)	01(.08)
Interaction Effects										
$D^*H_{warm} {\rightarrow} H_{MarSat}$	<b></b> 11 <sub>(.06)</sub>	04(.07)	07(.03)	02(.06)	04(.08)	<b>23</b> (.10)	.00(.07)	.16(.08)	<b>26</b> (.08)	<b>24</b> (.11)
$D^*W_{warm} \rightarrow W_{MarSat}$	.02(.06)	<b>01</b> (.07)	.20(.10)	.04(.06)	07(.08)	<b>.27</b> (.11)	.00(.08)	<b>30</b> (.11)	<b>.21</b> (.10)	<b>.25</b> (.10)
$D*W_{warm} \rightarrow H_{MarSat}$	$.05_{(.06)}$	.03(.07)	.17(.10)	.11(.06)	.00(.08)	.14(.10)	01 <sub>(.08)</sub>	<b>30</b> (.11)	.19(.10)	.10(.10)
$D^{*}H_{warm} \rightarrow W_{MarSat}$	10 <sub>(.06)</sub>	.01(.07)	07(.04)	02(.06)	.03(.08)	<b>29</b> <sub>(.10)</sub>	03(.07)	<b>.15</b> (.09)	<b>24</b> (.08)	<b>31</b> (.11)

Table 5. APIM Associations between Marital Satisfaction and Individual Warmth, Dyadic Correspondence, and their Interaction

*Note:* H = Husband, W = Wife. Values on the left side of the table are from analyses in which the dyadic variable was mean warmth correspondence and values on the right side of the table are from analyses in which the dyadic variable was momentary dominance correspondence. Values represent standardized Beta ( $\beta$ ) estimates from multi-level regression models. Standard Errors (*SE*) of these estimates are in parenthesis. Bold values indicate p < .05.

		Μ	lean Warm	th		Mean Dominance					
		Best		Husband	Wife		Best		Husband	Wife	
	Total	Things	Vacation	Conflict	Conflict	Total	Things	Vacation	Conflict	Conflict	
Hintercept	<b>-</b> .04 <sub>(.08)</sub>	<b></b> 08 <sub>(.08)</sub>	<b>-</b> .05 <sub>(.08)</sub>	$.03_{(.08)}$	<b>-</b> .03 <sub>(.09)</sub>	<b></b> 01 <sub>(.10)</sub>	<b></b> 01 <sub>(.10)</sub>	.03(.09)	<b></b> 01 <sub>(.09)</sub>	<b>-</b> .11 <sub>(.10)</sub>	
W <sub>intercept</sub>	$.04_{(.09)}$	.00(.09)	$.10_{(.08)}$	$.05_{(.09)}$	.03(.09)	$.04_{(.08)}$	.04(.09)	<b></b> 01 <sub>(.09)</sub>	.02(.09)	<b>.17</b> (.08)	
<u>Actor Effects</u>											
$H_{NEM} {\rightarrow} H$	- <b>.40</b> (.09)	<b>31</b> (.09)	- <b>.25</b> (.09)	$42_{(.08)}$	<b>34</b> (.10)	.02(.10)	<b></b> 04 <sub>(.10)</sub>	.12(.10)	.00(.10)	<b>-</b> .06 <sub>(.10)</sub>	
$W_{NEM}\!\rightarrow\!\!W$	- <b>.20</b> (.09)	<b>-</b> .19 <sub>(.10)</sub>	<b>-</b> .15 <sub>(.09)</sub>	<b>21</b> (.09)	<b>-</b> .14 <sub>(.10)</sub>	$.13_{(.09)}$	<b>.21</b> (.09)	.01(.10)	.12(.10)	.06(.09)	
$\mathrm{H}_{\mathrm{stress}} \! \rightarrow \mathrm{H}$	- <b>.27</b> (.09)	<b>-</b> .18 <sub>(.09)</sub>	- <b>.20</b> (.09)	- <b>.30</b> (.09)	- <b>.22</b> (.10)	<b>-</b> .03 <sub>(.10)</sub>	<b>-</b> .03 <sub>(.10)</sub>	.04(.10)	<b>-</b> .04 <sub>(.10)</sub>	<b>-</b> .08 <sub>(.11)</sub>	
$W_{stress} \rightarrow W$	<b>-</b> .11 <sub>(.10)</sub>	<b>-</b> .18 <sub>(.10)</sub>	<b></b> 07 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.09)</sub>	<b>-</b> .03 <sub>(.10)</sub>	<b>-</b> .01 <sub>(.09)</sub>	.08(.09)	<b></b> 07 <sub>(.10)</sub>	<b>-</b> .06 <sub>(.10)</sub>	<b>-</b> .01 <sub>(.09)</sub>	
$\mathrm{H}_{\mathrm{alienation}} {\rightarrow} \mathrm{H}$	- <b>.46</b> (.09)	- <b>.41</b> (.09)	- <b>.24</b> (.09)	- <b>.49</b> (.09)	- <b>.37</b> (.10)	.00(.11)	<b>-</b> .11 <sub>(.11)</sub>	.13(.11)	.07(.11)	<b>-</b> .12 <sub>(.11)</sub>	
$W_{alienation}\!\rightarrow\!W$	<b>-</b> .19 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.10)</sub>	<b>19</b> (.09)	- <b>.24</b> (.09)	<b>-</b> .11 <sub>(.10)</sub>	.13(.10)	.15(.10)	<b>-</b> .02 <sub>(.10)</sub>	<b>.25</b> (.10)	.07(.10)	
$H_{aggression} \rightarrow H$	<b>31</b> (.09)	- <b>.26</b> (.08)	<b>-</b> .15 <sub>(.09)</sub>	- <b>.34</b> (.09)	- <b>.27</b> (.10)	.07(.10)	<b>-</b> .03 <sub>(.10)</sub>	.14(.09)	.03(.09)	.01(.10)	
$W_{aggression}\!\rightarrow\!W$	<b>33</b> (.09)	<b>31</b> (.10)	<b>-</b> .17 <sub>(.09)</sub>	<b>30</b> (.09)	<b>30</b> (.09)	<b>.23</b> (.08)	<b>.25</b> (.09)	.12(.10)	<b>.21</b> (.09)	.14(.08)	
Partner Effects											
$W_{NEM}\!\rightarrow H$	<b>-</b> .12 <sub>(.09)</sub>	<b></b> 07 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.09)</sub>	<b>-</b> .16 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.10)</sub>	<b>-</b> .03 <sub>(.11)</sub>	<b></b> 03 <sub>(.10)</sub>	<b></b> 07 <sub>(.10)</sub>	<b></b> 03 <sub>(.10)</sub>	.10(.11)	
$H_{NEM} \! \rightarrow \! W$	- <b>.35</b> (.09)	<b>29</b> <sub>(.10)</sub>	- <b>.24</b> (.08)	<b>30</b> (.09)	- <b>.34</b> (.09)	<b>21</b> (.09)	<b>-</b> .16 <sub>(.09)</sub>	- <b>.22</b> (.10)	<b>-</b> .15 <sub>(.10)</sub>	<b></b> 14 <sub>(.09)</sub>	
$W_{stress} \! \rightarrow \! H$	<b>-</b> .09 <sub>(.09)</sub>	<b>-</b> .08 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.09)</sub>	<b>-</b> .11 <sub>(.09)</sub>	.00(.10)	.02(.10)	.03(.10)	<b>-</b> .04 <sub>(.10)</sub>	.04(.10)	.09(.11)	
$H_{stress} \! \rightarrow \! W$	- <b>.26</b> (.10)	<b>-</b> .18 <sub>(.10)</sub>	<b>18</b> (.09)	<b>26</b> (.09)	- <b>.22</b> (.10)	.09(.09)	<b>-</b> .10 <sub>(.09)</sub>	<b></b> 11 <sub>(.10)</sub>	<b>-</b> .02 <sub>(.10)</sub>	<b></b> 07 <sub>(.09)</sub>	
$W_{alienation} {\rightarrow} H$	<b>-</b> .06 <sub>(.09)</sub>	.04(.09)	<b>-</b> .10 <sub>(.10)</sub>	<b>-</b> .11 <sub>(.09)</sub>	<b>-</b> .04 <sub>(.11)</sub>	.05(.11)	.05(.11)	.01(.11)	<b>-</b> .02 <sub>(.11)</sub>	.14(.12)	
$H_{alienation} {\rightarrow} W$	- <b>.42</b> (.09)	- <b>.41</b> (.10)	- <b>.22</b> (.09)	- <b>.35</b> (.09)	- <b>.42</b> (.10)	- <b>.23</b> (.09)	<b>-</b> .10 <sub>(.10)</sub>	<b>23</b> (.10)	- <b>.25</b> (.10)	<b>-</b> .16 <sub>(.09)</sub>	
$W_{aggression} \rightarrow H$	<b>-</b> .15 <sub>(.09)</sub>	<b>-</b> .09 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.09)</sub>	<b>-</b> .15 <sub>(.09)</sub>	<b>-</b> .13 <sub>(.10)</sub>	- <b>.20</b> (.10)	<b>-</b> .16 <sub>(.10)</sub>	<b></b> 18 <sub>(.10)</sub>	<b>-</b> .16 <sub>(.10)</sub>	<b>-</b> .13 <sub>(.10)</sub>	
$H_{aggression} \rightarrow W$	- <b>.20</b> (.09)	<b>-</b> .13 <sub>(.10)</sub>	<b>-</b> .13 <sub>(.08)</sub>	<b>19</b> (.09)	- <b>.20</b> (.09)	- <b>.25</b> (.08)	<b>18</b> (.09)	<b>-</b> .18 <sub>(.09)</sub>	- <b>.25</b> (.09)	<b>18</b> (.08)	

Table 6. APIM Associations between Husbands' and Wives' Warmth and Dominance and MPQ Negative Emotionality

*Note:* H = Husband, W = Wife. Values represent standardized Beta ( $\beta$ ) estimates from multi-level regression models. Standard Errors (*SE*) of these estimates are in parenthesis. Bold values indicate p < .05.

		Μ	lean Warm	th		Mean Dominance					
		Best		Husband	Wife		Best		Husband	Wife	
	Total	Things	Vacation	Conflict	Conflict	Total	Things	Vacation	Conflict	Conflict	
Hintercept	<b>-</b> .02 <sub>(.08)</sub>	<b></b> 04 <sub>(.08)</sub>	<b></b> 04 <sub>(.09)</sub>	.03(.09)	<b>-</b> .05 <sub>(.09)</sub>	<b>-</b> .01 <sub>(.10)</sub>	.02(.10)	.03(.09)	$.00_{(.09)}$	<b>-</b> .12 <sub>(.10)</sub>	
Wintercept	$.06_{(.09)}$	.03(.10)	.12(.08)	.03(.09)	.02(.09)	$.01_{(.09)}$	<b></b> 04 <sub>(.09)</sub>	<b></b> 01 <sub>(.09)</sub>	$.00_{(.09)}$	$.12_{(.08)}$	
Actor Effects											
$H_{total.probs} {\rightarrow} H$	- <b>.29</b> (.08)	- <b>.23</b> (.08)	<b>33</b> (.09)	- <b>.24</b> (.09)	<b>-</b> .16 <sub>(.09)</sub>	<b>-</b> .03 <sub>(.10)</sub>	$.02_{(.09)}$	<b>-</b> .11 <sub>(.09)</sub>	$.02_{(.09)}$	.01(.10)	
$W_{total.probs}\!\rightarrow\!\!W$	<b>-</b> .16 <sub>(.12)</sub>	<b></b> 16 <sub>(.10)</sub>	<b></b> 05 <sub>(.08)</sub>	<b>-</b> .18 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.09)</sub>	$.09_{(.09)}$	$.15_{(.09)}$	<b>-</b> .06 <sub>(.09)</sub>	.08(.09)	$.15_{(.09)}$	
$H_{warm.probs} \rightarrow H$	<b>.24</b> (.09)	<b>.20</b> (.08)	.18(.10)	<b>.18</b> (.09)	<b>.27</b> (.09)	.05(.10)	.11(.09)	.03(.09)	.03(.09)	<b>-</b> .03 <sub>(.10)</sub>	
$W_{warm.probs} \! \rightarrow \! W$	$.04_{(.09)}$	.07(.10)	$.10_{(.08)}$	<b>-</b> .04 <sub>(.09)</sub>	.01(.09)	<b>.24</b> (.09)	<b>.20</b> (.09)	<b>.21</b> (.09)	$.10_{(.09)}$	<b>.29</b> (.08)	
$H_{dom.probs} \! \rightarrow \! H$	- <b>.25</b> (.08)	<b>20</b> (.08)	<b>-</b> .08 <sub>(.09)</sub>	- <b>.25</b> (.08)	- <b>.27</b> (.09)	<b>.22</b> (.09)	.10(.09)	.16(.09)	<b>.21</b> (.09)	<b>.23</b> (.09)	
$W_{dom.probs}\!\rightarrow\!\!W$	- <b>.40</b> (.09)	<b>32</b> (.10)	<b>26</b> (.08)	<b>41</b> (.09)	<b>38</b> (.09)	<b>.40</b> (.08)	<b>.33</b> (.09)	<b>.29</b> (.09)	<b>.39</b> (.08)	<b>.26</b> (.08)	
Partner Effects											
$W_{total.probs} {\rightarrow} H$	<b>-</b> .16 <sub>(.09)</sub>	<b>-</b> .11 <sub>(.08)</sub>	<b>-</b> .11 <sub>(.09)</sub>	<b>-</b> .18 <sub>(.09)</sub>	<b>-</b> .13 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.10)</sub>	.00(.10)	.00(.09)	$.05_{(.09)}$	.12(.10)	
$H_{total.probs} {\rightarrow} W$	<b>-</b> .17 <sub>(.09)</sub>	- <b>.25</b> (.10)	<b>-</b> .14 <sub>(.08)</sub>	<b>-</b> .13 <sub>(.09)</sub>	<b>-</b> .04 <sub>(.09)</sub>	<b>-</b> .14 <sub>(.09)</sub>	<b></b> 14 <sub>(.09)</sub>	<b></b> 01 <sub>(.09)</sub>	<b>-</b> .11 <sub>(.09)</sub>	- <b>.17</b> (.08)	
$W_{warm.probs} \rightarrow H$	<b>-</b> .01 <sub>(.09)</sub>	.04(.09)	<b>-</b> .07 <sub>(.09)</sub>	.05(.09)	<b>-</b> .04 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.10)</sub>	<b>-</b> .05 <sub>(.10)</sub>	<b>-</b> .16 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.10)</sub>	
$H_{warm.probs} {\rightarrow} W$	<b>-</b> .01 <sub>(.09)</sub>	.01(.10)	<b></b> 07 <sub>(.09)</sub>	.01(.09)	.07(.09)	.06(.09)	<b></b> 04 <sub>(.09)</sub>	$.07_{(.09)}$	$.11_{(.09)}$	$.05_{(.08)}$	
$W_{dom.probs} \! \rightarrow \! H$	<b>31</b> (.08)	- <b>.28</b> (.08)	- <b>.24</b> (.09)	<b>30</b> (.08)	- <b>.24</b> (.09)	<b>36</b> (.09)	<b>33</b> (.09)	<b>30</b> (.09)	<b>31</b> (.09)	- <b>.24</b> (.10)	
$H_{dom.probs} \! \rightarrow W$	<b>-</b> .10 <sub>(.09)</sub>	<b></b> 11 <sub>(.10)</sub>	.00(.08)	<b>-</b> .06 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.09)</sub>	- <b>.24</b> (.08)	<b>-</b> .13 <sub>(.09)</sub>	<b>20</b> (.09)	25(.08)	- <b>.21</b> (.08)	

Table 7. APIM Associations between Husbands' and Wives' Warmth and Dominance and IIP Interpersonal Problems

*Note:* H = Husband, W = Wife. Values represent standardized Beta ( $\beta$ ) estimates from multi-level regression models. Standard Errors (*SE*) of these estimates are in parenthesis. Bold values indicate p < .05.

		$\mathbf{M}$	<u>lean Warm</u>	<u>th</u>		<u>Mean Dominance</u>					
Actor Effects		Best		Husband	Wife		Best		Husband	Wife	
	Total	Things	Vacation	Conflict	Conflict	Total	Things	Vacation	Conflict	Conflict	
$H_{total.PD} \rightarrow H$	- <b>.34</b> (.09)	- <b>.34</b> (.09)	<b>-</b> .18 <sub>(.09)</sub>	<b>33</b> (.09)	- <b>.28</b> (.10)	.00(.11)	<b>04</b> (.10)	.08(.10)	.00(.10)	<b>-</b> .03 <sub>(.11)</sub>	
$W_{total.PD} {\rightarrow} W$	<b></b> 06 <sub>(.10)</sub>	<b>-</b> .03 <sub>(.11)</sub>	<b>-</b> .06 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.10)</sub>	<b>-</b> .01 <sub>(.10)</sub>	$.14_{(.09)}$	.16(.09)	.00(.10)	$.12_{(.10)}$	<b>.18</b> (.09)	
$H_{paranoid} \rightarrow H$	- <b>.38</b> (.10)	- <b>.35</b> (.09)	19 <sub>(.10)</sub>	- <b>.37</b> (.09)	- <b>.35</b> (.11)	.03(.11)	<b>-</b> .16 <sub>(.10)</sub>	.13(.11)	.10(.11)	.04(.12)	
$W_{paranoid} \rightarrow W$	- <b>.29</b> (.10)	- <b>.22</b> <sub>(.11)</sub>	- <b>.29</b> <sub>(.09)</sub>	<b>31</b> (.10)	<b>-</b> .19 <sub>(.11)</sub>	.10(.10)	.08(.10)	<b>-</b> .07 <sub>(.11)</sub>	<b>.23</b> (.10)	.06(.10)	
$H_{schizoid} \rightarrow H$	<b>-</b> .13 <sub>(.09)</sub>	- <b>.20</b> (.08)	<b>-</b> .08 <sub>(.09)</sub>	<b>-</b> .08 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.09)</sub>	<b>-</b> .14 <sub>(.09)</sub>	.01(.09)	<b>-</b> .14 <sub>(.09)</sub>	<b>-</b> .19 <sub>(.09)</sub>	
$W_{schizoid} \! \rightarrow \! W$	<b>-</b> .13 <sub>(.11)</sub>	<b>-</b> .22 <sub>(.12)</sub>	<b>-</b> .11 <sub>(.10)</sub>	<b>-</b> .08 <sub>(.11)</sub>	<b>-</b> .09 <sub>(.11)</sub>	<b>-</b> .17 <sub>(.10)</sub>	<b>-</b> .07 <sub>(.10)</sub>	- <b>.27</b> (.10)	<b>-</b> .08 <sub>(.11)</sub>	<b>-</b> .13 <sub>(.09)</sub>	
$H_{schizotypal} \rightarrow H$	<b>26</b> (.09)	- <b>.23</b> (.08)	- <b>.23</b> (.09)	- <b>.22</b> (.09)	<b>-</b> .19 <sub>(.10)</sub>	<b>-</b> .07 <sub>(.10)</sub>	07 <sub>(.09)</sub>	<b>-</b> .03 <sub>(.09)</sub>	<b>-</b> .02 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.10)</sub>	
$W_{schizotypal} \! \rightarrow W$	<b>09</b> (.11)	<b>-</b> .09 <sub>(.12)</sub>	<b>-</b> .09 <sub>(.10)</sub>	<b>-</b> .15 <sub>(.11)</sub>	.02(.11)	.02(.10)	.03(.10)	<b>-</b> .14 <sub>(.11)</sub>	.16(.11)	.03(.10)	
$H_{antisocial} \rightarrow H$	- <b>.24</b> (.08)	- <b>.30</b> (.08)	<b>-</b> .08 <sub>(.08)</sub>	- <b>.20</b> (.08)	- <b>.22</b> (.09)	<b>-</b> .05 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.09)</sub>	.06(.09)	<b>-</b> .06 <sub>(.09)</sub>	<b>-</b> .11 <sub>(.10)</sub>	
$W_{antisocial} \! \rightarrow W$	- <b>.32</b> (.11)	- <b>.28</b> (.12)	<b>28</b> (.10)	- <b>.26</b> (.11)	<b>23</b> (.11)	.07(.11)	.13(.11)	<b>-</b> .08 <sub>(.11)</sub>	.10(.11)	.04(.10)	
$H_{borderline} \rightarrow H$	- <b>.36</b> (.10)	- <b>.29</b> <sub>(.10)</sub>	<b>-</b> .12 <sub>(.10)</sub>	- <b>.42</b> (.09)	- <b>.32</b> (.11)	<b>-</b> .01 <sub>(.11)</sub>	<b>-</b> .06 <sub>(.11)</sub>	.08(.11)	.01(.11)	<b>-</b> .05 <sub>(.12)</sub>	
$W_{borderline} \! \rightarrow W$	<b></b> 17 <sub>(.09)</sub>	<b>-</b> .11 <sub>(.10)</sub>	<b>19</b> (.09)	<b>-</b> .15 <sub>(.09)</sub>	<b>-</b> .08 <sub>(.10)</sub>	<b>.22</b> (.09)	<b>.23</b> (.09)	.06(.10)	<b>.20</b> (.09)	<b>.25</b> (.08)	
$H_{histrionic} \rightarrow H$	- <b>.32</b> (.09)	- <b>.19</b> <sub>(.09)</sub>	- <b>.20</b> (.10)	- <b>.32</b> (.09)	- <b>.34</b> (.10)	.07(.11)	.05(.10)	.05(.10)	.10(.10)	.07(.11)	
$W_{histrionic} \rightarrow W$	<b></b> 08 <sub>(.09)</sub>	<b>-</b> .02 <sub>(.11)</sub>	<b>-</b> .05 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.09)</sub>	<b>-</b> .06 <sub>(.09)</sub>	<b>.21</b> (.08)	<b>.18</b> (.09)	.09(.09)	.15(.09)	<b>.26</b> (.08)	
$H_{narcissistic} \rightarrow H$	.14(.10)	.03(.10)	<b>.19</b> (.10)	.18(.10)	.10(.11)	.11 <sub>(.11)</sub>	.11(.10)	.09(.10)	.08(.10)	.11 <sub>(.11)</sub>	
$W_{narcissistic} {\rightarrow} W$	<b></b> 11 <sub>(.10)</sub>	.03(.11)	<b>-</b> .12 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.10)</sub>	<b>-</b> .15 <sub>(.11)</sub>	.08(.09)	.07(.09)	$.05_{(.10)}$	.03(.10)	.07(.09)	
$H_{avoidant} \rightarrow H$	<b>-</b> .20 <sub>(.10)</sub>	- <b>.25</b> (.10)	- <b>.21</b> (.10)	<b>-</b> .14 <sub>(.10)</sub>	<b>-</b> .10 <sub>(.11)</sub>	<b>-</b> .19 <sub>(.11)</sub>	<b>-</b> .10 <sub>(.11)</sub>	<b>-</b> .10 <sub>(.11)</sub>	- <b>.24</b> (.10)	<b>-</b> .20 <sub>(.11)</sub>	
$W_{avoidant} {\rightarrow} W$	$.05_{(.10)}$	<b>-</b> .01 <sub>(.11)</sub>	.03(.09)	.03(.09)	.09(.10)	<b>-</b> .06 <sub>(.09)</sub>	<b>-</b> .01 <sub>(.09)</sub>	<b></b> 08 <sub>(.09)</sub>	<b>-</b> .04 <sub>(.09)</sub>	<b></b> 04 <sub>(.09)</sub>	
$H_{dependent} \rightarrow H$	<b>-</b> .13 <sub>(.11)</sub>	<b>-</b> .13 <sub>(.10)</sub>	<b>-</b> .03 <sub>(.11)</sub>	<b>-</b> .17 <sub>(.11)</sub>	<b>-</b> .06 <sub>(.12)</sub>	<b>-</b> .03 <sub>(.12)</sub>	<b>-</b> .06 <sub>(.11)</sub>	.02(.11)	<b>-</b> .02 <sub>(.11)</sub>	.00(.12)	
$W_{dependent} \rightarrow W$	<b></b> 07 <sub>(.09)</sub>	<b>-</b> .02 <sub>(.09)</sub>	<b>-</b> .02 <sub>(.08)</sub>	<b>-</b> .11 <sub>(.09)</sub>	<b>-</b> .06 <sub>(.09)</sub>	$.06_{(.08)}$	$.06_{(.08)}$	$.06_{(.08)}$	<b>-</b> .02 <sub>(.09)</sub>	.09(.08)	
$\mathrm{H}_{\mathrm{obsess-comp}} {\rightarrow} \mathrm{H}$	- <b>.27</b> (.09)	- <b>.20</b> (.09)	<b>-</b> .15 <sub>(.09)</sub>	- <b>.32</b> (.09)	- <b>.22</b> (.10)	<b>.23</b> (.10)	.14(.10)	<b>.19</b> (.09)	<b>.21</b> (.10)	<b>.25</b> (.10)	
$W_{obsess\text{-}comp} {\rightarrow} W$	.09(.10)	.05(.11)	.11(.09)	.02(.09)	.07(.10)	.08(.09)	$.11_{(.09)}$	.02(.10)	.09(.10)	.09(.08)	

Table 8. APIM Associations between Husbands' and Wives' Warmth and Dominance and IPDE Personality Disorders, Actor Effects

*Note:* H = Husband, W = Wife. Values represent standardized Beta ( $\beta$ ) estimates from multi-level regression models. Standard Errors (*SE*) of these estimates are in parenthesis. Bold values indicate p < .05.
	<u>Mean Warmth</u>				<u>Mean Dominance</u>					
<u>Partner Effects</u>		Best		Husband	Wife		Best		Husband	Wife
	Total	Things	Vacation	Conflict	Conflict	Total	Things	Vacation	Conflict	Conflict
$W_{total.PD} \rightarrow H$	<b>-</b> .04 <sub>(.10)</sub>	.03(.09)	<b>-</b> .06 <sub>(.10)</sub>	<b>-</b> .10 <sub>(.10)</sub>	.03(.11)	<b>-</b> .04 <sub>(.11)</sub>	.03(.11)	<b>-</b> .06 <sub>(.10)</sub>	<b>-</b> .08 <sub>(.11)</sub>	.00(.11)
$H_{total.PD} \! \rightarrow \! W$	<b>33</b> (.10)	<b>33</b> (.10)	<b>-</b> .16 <sub>(.09)</sub>	- <b>.32</b> (.09)	- <b>.28</b> (.10)	- <b>.20</b> (.09)	<b>-</b> .16 <sub>(.09)</sub>	<b>-</b> .18 <sub>(.10)</sub>	<b>-</b> .12 <sub>(.10)</sub>	- <b>.19</b> (.09)
$W_{paranoid} \rightarrow H$	17 <sub>(.10)</sub>	04 <sub>(.10)</sub>	- <b>.20</b> (.10)	- <b>.25</b> (.09)	<b>-</b> .06 <sub>(.11)</sub>	<b>-</b> .07 <sub>(.12)</sub>	<b>-</b> .00 <sub>(.11)</sub>	<b>-</b> .06 <sub>(.11)</sub>	<b>-</b> .11 <sub>(.11)</sub>	<b>-</b> .14 <sub>(.12)</sub>
$\mathrm{H}_{\mathrm{paranoid}} {\rightarrow} \mathrm{W}$	<b>31</b> (.10)	<b>34</b> (.11)	<b>-</b> .17 <sub>(.09)</sub>	- <b>.25</b> (.10)	<b>30</b> (.10)	- <b>.22</b> (.10)	<b>-</b> .02 <sub>(.10)</sub>	<b>-</b> .20 <sub>(.10)</sub>	- <b>.34</b> (.10)	<b>-</b> .05 <sub>(.09)</sub>
$W_{schizoid} \rightarrow H$	.06(.10)	.01(.10)	.05(.10)	.06(.11)	.13(.11)	.09(.11)	.08(.11)	.16(.11)	.02(.11)	.05(.12)
$H_{schizoid} {\rightarrow} W$	<b>-</b> .10 <sub>(.09)</sub>	<b>-</b> .15 <sub>(.09)</sub>	<b>-</b> .02 <sub>(.08)</sub>	<b>-</b> .09 <sub>(.09)</sub>	<b>-</b> .09 <sub>(.09)</sub>	$.06_{(.08)}$	$.07_{(.08)}$	.06(.09)	$.11_{(.09)}$	.01(.08)
$W_{schizotypal} \rightarrow H$	<b>-</b> .04 <sub>(.11)</sub>	<b>-</b> .01 <sub>(.10)</sub>	.04(.10)	<b>-</b> .17 <sub>(.10)</sub>	.04(.12)	.12(.12)	.21(.11)	.12(.11)	<b>-</b> .12 <sub>(.11)</sub>	.17(.12)
$H_{schizotypal} \! \rightarrow \! W$	- <b>.24</b> (.09)	- <b>.23</b> (.10)	<b>-</b> .12 <sub>(.08)</sub>	- <b>.27</b> (.09)	<b>-</b> .18 <sub>(.10)</sub>	<b>-</b> .04 <sub>(.08)</sub>	<b>-</b> .05 <sub>(.08)</sub>	<b>-</b> .02 <sub>(.09)</sub>	.03(.09)	<b></b> 07 <sub>(.08)</sub>
$W_{antisocial} {\rightarrow} H$	- <b>.28</b> (.11)	<b></b> 14 <sub>(.10)</sub>	- <b>.26</b> (.11)	<b>33</b> (.11)	<b>-</b> .19 <sub>(.12)</sub>	.04(.12)	.01(.12)	.01(.12)	.05(.12)	.13(.13)
$H_{antisocial} {\rightarrow} W$	- <b>.28</b> (.08)	- <b>.29</b> (.09)	<b>-</b> .12 <sub>(.08)</sub>	- <b>.22</b> (.08)	<b>30</b> (.08)	<b>-</b> .14 <sub>(.08)</sub>	<b>-</b> .05 <sub>(.08)</sub>	<b>-</b> .13 <sub>(.09)</sub>	<b>-</b> .16 <sub>(.08)</sub>	<b>09</b> (.08)
$W_{borderline} \! \rightarrow H$	<b>-</b> .13 <sub>(.09)</sub>	<b>-</b> .02 <sub>(.09)</sub>	<b>21</b> (.09)	<b></b> 14 <sub>(.08)</sub>	<b>-</b> .06 <sub>(.10)</sub>	<b>-</b> .15 <sub>(.10)</sub>	<b>-</b> .09 <sub>(.10)</sub>	<b>-</b> .13 <sub>(.10)</sub>	<b>-</b> .17 <sub>(.10)</sub>	<b></b> 11 <sub>(.11)</sub>
$H_{borderline} \! \rightarrow W$	- <b>.29</b> (.10)	- <b>.27</b> (.11)	<b>-</b> .12 <sub>(.10)</sub>	<b>31</b> (.10)	- <b>.28</b> (.11)	- <b>.25</b> (.09)	<b>-</b> .19 <sub>(.10)</sub>	<b>-</b> .20 <sub>(.11)</sub>	<b>-</b> .19 <sub>(.10)</sub>	- <b>.24</b> (.09)
$W_{histrionic} \rightarrow H$	<b>-</b> .13 <sub>(.09)</sub>	<b>-</b> .09 <sub>(.09)</sub>	<b>-</b> .08 <sub>(.09)</sub>	<b>-</b> .14 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.09)</sub>	<b>-</b> .14 <sub>(.10)</sub>	<b>-</b> .11 <sub>(.10)</sub>	<b>-</b> .17 <sub>(.09)</sub>	<b>-</b> .09 <sub>(.09)</sub>	<b>-</b> .08 <sub>(.10)</sub>
$H_{histrionic} {\rightarrow} W$	- <b>.26</b> (.10)	- <b>.15</b> (.11)	<b></b> 14 <sub>(.09)</sub>	- <b>.24</b> (.10)	- <b>.32</b> (.10)	<b>-</b> .15 <sub>(.09)</sub>	<b>-</b> .13 <sub>(.09)</sub>	<b></b> 08 <sub>(.10)</sub>	<b></b> 14 <sub>(.10)</sub>	<b>-</b> .14 <sub>(.08)</sub>
$W_{narcissistic} \rightarrow H$	<b>-</b> .13 <sub>(.10)</sub>	.02(.10)	<b>-</b> .15 <sub>(.10)</sub>	- <b>.20</b> (.10)	<b>-</b> .07 <sub>(.11)</sub>	.03(.11)	.11(.10)	.00(.10)	.06(.10)	.02(.11)
$H_{narcissistic} \rightarrow W$	$.12_{(.10)}$	.02(.11)	.17(.09)	$.13_{(.10)}$	.10(.10)	<b>-</b> .11 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.09)</sub>	<b>-</b> .07 <sub>(.10)</sub>	<b>-</b> .15 <sub>(.10)</sub>	<b></b> 11 <sub>(.09)</sub>
$W_{avoidant} {\rightarrow} H$	.06(.09)	.07(.09)	.06(.09)	.01(.09)	.09(.09)	.14(.10)	.15(.10)	.08(.10)	.08(.10)	.12(.11)
$H_{avoidant} \! \rightarrow \! W$	- <b>.21</b> (.11)	- <b>.26</b> (.11)	<b>-</b> .12 <sub>(.10)</sub>	- <b>.24</b> (.10)	<b>-</b> .10 <sub>(.11)</sub>	<b>-</b> .02 <sub>(.10)</sub>	<b>-</b> .12 <sub>(.10)</sub>	<b>-</b> .09 <sub>(.10)</sub>	.08(.10)	$.05_{(.09)}$
$W_{dependent} \rightarrow H$	<b>-</b> .09 <sub>(.09)</sub>	<b></b> 07 <sub>(.08)</sub>	<b>-</b> .06 <sub>(.08)</sub>	<b>-</b> .10 <sub>(.09)</sub>	<b>-</b> .04 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.09)</sub>	<b>-</b> .11 <sub>(.09)</sub>	<b></b> 04 <sub>(.09)</sub>	<b>-</b> .06 <sub>(.09)</sub>
$H_{dependent} \rightarrow W$	<b>-</b> .18 <sub>(.11)</sub>	<b>-</b> .22 <sub>(.12)</sub>	<b>-</b> .16 <sub>(.10)</sub>	<b>-</b> .11 <sub>(.11)</sub>	<b>-</b> .14 <sub>(.12)</sub>	<b>-</b> .14 <sub>(.10)</sub>	<b>-</b> .13 <sub>(.10)</sub>	<b>-</b> .17 <sub>(.11)</sub>	<b>-</b> .08 <sub>(.11)</sub>	<b></b> 11 <sub>(.10)</sub>
$W_{obsess-comp} \! \rightarrow \! H$	.07(.09)	.06(.09)	.06(.09)	.03(.09)	.09(.10)	<b>-</b> .08 <sub>(.10)</sub>	<b>-</b> .01 <sub>(.10)</sub>	<b>-</b> .07 <sub>(.10)</sub>	<b>-</b> .13 <sub>(.10)</sub>	<b>-</b> .06 <sub>(.10)</sub>
$H_{obsess\text{-}comp} \! \rightarrow W$	- <b>.25</b> (.10)	<b>19</b> <sub>(.11)</sub>	<b>-</b> .17 <sub>(.09)</sub>	<b>29</b> (.09)	<b>-</b> .17 <sub>(.10)</sub>	<b>-</b> .17 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.09)</sub>	<b>-</b> .17 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.09)</sub>	- <b>.18</b> (.08)

Table 9. APIM Associations between Husbands' and Wives' Warmth and Dominance and IPDE Personality Disorders, Partner Effects

	<u>Mean Warmth</u>					<u>Mean Dominance</u>					
		Best		Husband	Wife		Best		Husband	Wife	
	Total	Things	Vacation	Conflict	Conflict	Total	Things	Vacation	Conflict	Conflict	
Hintercept	04(.09)	09(.08)	05(.09)	.02(.09)	04(.10)	01 <sub>(.10)</sub>	<b>01</b> (.10)	.03(.09)	01 <sub>(.09)</sub>	11 <sub>(.10)</sub>	
Wintercept	$.04_{(.09)}$	<b>01</b> (.09)	$.10_{(.08)}$	$.04_{(.09)}$	$.02_{(.09)}$	$.04_{(.09)}$	.03(.09)	02(.09)	.01(.09)	<b>.16</b> (.08)	
Actor Effects											
$\mathrm{H}_{\mathrm{PEM-C}}\!\rightarrow\mathrm{H}$	.16(.09)	$.14_{(.09)}$	.16(.09)	$.11_{(.09)}$	.15(.10)	.00(.10)	<b>-</b> .02 <sub>(.10)</sub>	<b></b> 06 <sub>(.10)</sub>	.09(.10)	.01(.10)	
$W_{PEM\text{-}C} \! \rightarrow \! W$	<b>.32</b> (.09)	<b>.36</b> (.10)	<b>.23</b> (.09)	<b>.26</b> (.09)	<b>.25</b> (.10)	<b>-</b> .01 <sub>(.09)</sub>	08(.09)	.08(.10)	<b></b> 06 <sub>(.10)</sub>	.03(.09)	
$\mathrm{H}_{\mathrm{social.close}} {\rightarrow} \mathrm{H}$	<b>.19</b> (.09)	<b>.20</b> (.09)	<b>.22</b> (.09)	.08(.09)	.16(.10)	.01(.10)	.03(.10)	<b></b> 03 <sub>(.10)</sub>	.06(.09)	.00(.10)	
$W_{social.close} \! \rightarrow \! W$	<b>.29</b> (.09)	<b>.29</b> (.10)	<b>.24</b> (.08)	<b>.20</b> (.09)	<b>.26</b> (.10)	$.01_{(.09)}$	<b></b> 04 <sub>(.09)</sub>	.16(.09)	<b>-</b> .09 <sub>(.09)</sub>	$.01_{(.08)}$	
$H_{wellbeing} {\rightarrow} H$	.12(.09)	.07(.09)	.07(.09)	.14(.09)	.10(.10)	<b>-</b> .01 <sub>(.10)</sub>	<b>-</b> .07 <sub>(.10)</sub>	.09(.10)	.11(.09)	.01(.10)	
$W_{wellbeing} \! \rightarrow \! W$	<b>.23</b> (.09)	<b>.30</b> (.09)	$.15_{(.09)}$	<b>.22</b> (.09)	.16(.10)	.00(.09)	<b>-</b> .07 <sub>(.09)</sub>	.00(.10)	.00(.09)	$.07_{(.08)}$	
Partner Effects											
$W_{\text{PEM-C}} \! \rightarrow \! H$	<b>.20</b> (.09)	$.17_{(.09)}$	.13(.09)	<b>.23</b> (.09)	.10(.10)	.02(.10)	.02(.10)	.02(.10)	.05(.10)	<b>-</b> .02 <sub>(.11)</sub>	
$H_{\text{PEM-C}} \to W$	.15(.09)	.12(.10)	$.09_{(.09)}$	$.14_{(.09)}$	.13(.10)	.09(.09)	$.10_{(.09)}$	.13(.10)	<b></b> 03 <sub>(.09)</sub>	.09(.08)	
$W_{\text{social.close}} \! \rightarrow \! H$	.16(.09)	.13(.09)	.13(.09)	.17(.09)	.07(.10)	.00(.10)	<b>-</b> .06 <sub>(.10)</sub>	<b>-</b> .05 <sub>(.10)</sub>	.10(.10)	.03(.11)	
$H_{\text{social.close}} \! \rightarrow \! W$	$.15_{(.09)}$	$.14_{(.10)}$	$.13_{(.08)}$	.12(.09)	$.11_{(.09)}$	$.12_{(.09)}$	.09(.09)	$.13_{(.09)}$	.01(.09)	$.13_{(.08)}$	
$W_{wellbeing} \! \rightarrow \! H$	<b>.19</b> (.09)	<b>.18</b> (.09)	.12(.09)	<b>.20</b> (.09)	.12(.10)	.03(.10)	.09(.10)	.07(.10)	.00(.10)	<b>-</b> .05 <sub>(.10)</sub>	
$H_{wellbeing} \! \rightarrow W$	$.17_{(.09)}$	$.14_{(.10)}$	.08(.09)	$.17_{(.09)}$	$.17_{(.09)}$	.03(.09)	$.07_{(.09)}$	.12(.10)	<b>-</b> .08 <sub>(.09)</sub>	$.00_{(.08)}$	

Table 10. APIM Associations between Husbands' and Wives' Warmth and Dominance and MPQ Positive Emotionality – Communion

	<u>Mean Warmth</u>				Mean Dominance					
		Best		Husband	Wife		Best		Husband	Wife
	Total	Things	Vacation	Conflict	Conflict	Total	Things	Vacation	Conflict	Conflict
H <sub>intercept</sub>	<b></b> 04 <sub>(.09)</sub>	<b>-</b> .09 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.09)</sub>	.03(.09)	<b>-</b> .04 <sub>(.10)</sub>	<b>-</b> .01 <sub>(.10)</sub>	<b>-</b> .01 <sub>(.09)</sub>	.03(.09)	<b></b> 01 <sub>(.09)</sub>	<b>-</b> .11 <sub>(.10)</sub>
Wintercept	$.05_{(.09)}$	.01(.10)	$.10_{(.08)}$	.05.09)	.03(.10)	$.04_{(.08)}$	$.02_{(.09)}$	<b>-</b> .02 <sub>(.09)</sub>	.01(.09)	<b>.16</b> (.08)
<u>Actor Effects</u>										
$\mathrm{H}_{\mathrm{PEM-A}}\!\rightarrow\mathrm{H}$	<b>-</b> .13 <sub>(.09)</sub>	<b></b> 06 <sub>(.09)</sub>	<b>-</b> .02 <sub>(.09)</sub>	<b>-</b> .13 <sub>(.09)</sub>	- <b>.20</b> (.10)	.13(.10)	.09(.10)	$.05_{(.09)}$	.12(.09)	<b>.21</b> (.10)
$W_{PEM\text{-}A} \! \rightarrow \! W$	<b>-</b> .06 <sub>(.09)</sub>	.04(.10)	<b></b> 06 <sub>(.08)</sub>	<b>-</b> .06 <sub>(.09)</sub>	<b>-</b> .08 <sub>(.10)</sub>	<b>.18</b> (.08)	<b>.22</b> (.08)	.16(.09)	.09(.09)	$.15_{(.08)}$
$H_{achieve} \rightarrow H$	<b>-</b> .03 <sub>(.09)</sub>	<b>-</b> .06 <sub>(.09)</sub>	<b>-</b> .01 <sub>(.09)</sub>	.01(.09)	<b>-</b> .06 <sub>(.10)</sub>	.03(.10)	.01(.10)	.01(.09)	.05(.09)	.05(.10)
$W_{achieve} \! \rightarrow W$	<b>-</b> .05 <sub>(.09)</sub>	.03(.10)	<b>-</b> .14 <sub>(.08)</sub>	<b></b> 04 <sub>(.09)</sub>	<b>-</b> .04 <sub>(.10)</sub>	<b>-</b> .02 <sub>(.08)</sub>	$.09_{(.09)}$	<b></b> 07 <sub>(.09)</sub>	<b></b> 05 <sub>(.09)</sub>	.00(.08)
$H_{\text{social.potent}} \rightarrow H$	<b>-</b> .17 <sub>(.09)</sub>	<b>-</b> .06 <sub>(.09)</sub>	<b>-</b> .03 <sub>(.09)</sub>	- <b>.21</b> (.09)	- <b>.25</b> (.09)	.17(.09)	.11(.09)	.08(.09)	.13(.09)	<b>.26</b> (.09)
$W_{\text{social.potent}} {\rightarrow} W$	<b>-</b> .05 <sub>(.09)</sub>	.03(.10)	$.01_{(.08)}$	<b>-</b> .07 <sub>(.09)</sub>	<b>-</b> .09 <sub>(.09)</sub>	<b>.30</b> (.08)	<b>.27</b> (.08)	<b>.30</b> (.09)	<b>.17</b> (.09)	<b>.24</b> (.08)
Partner Effects										
$W_{PEM\text{-}A} \! \rightarrow \! H$	<b>-</b> .04 <sub>(.09)</sub>	<b></b> 08 <sub>(.09)</sub>	<b></b> 04 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.09)</sub>	<b>-</b> .04 <sub>(.10)</sub>	<b>-</b> .15 <sub>(.10)</sub>	<b>-</b> .16 <sub>(.09)</sub>	<b></b> 03 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.09)</sub>	<b>-</b> .15 <sub>(.10)</sub>
$H_{PEM\text{-}A} \to W$	<b>-</b> .12 <sub>(.09)</sub>	<b>-</b> .04 <sub>(.10)</sub>	<b></b> 07 <sub>(.08)</sub>	<b>-</b> .13 <sub>(.09)</sub>	<b>-</b> .13 <sub>(.10)</sub>	$.02_{(.08)}$	$.04_{(.09)}$	<b>-</b> .02 <sub>(.09)</sub>	<b></b> 14 <sub>(.09)</sub>	$.08_{(.08)}$
$W_{achieve} \rightarrow H$	.00(.09)	<b>-</b> .05 <sub>(.09)</sub>	<b>-</b> .04 <sub>(.09)</sub>	<b>-</b> .02 <sub>(.09)</sub>	.09(.10)	.08(.10)	.00(.10)	<b>.21</b> (.09)	.01(.09)	.03(.09)
$H_{achieve} \! \rightarrow \! W$	<b></b> 05 <sub>(.10)</sub>	<b>-</b> .02 <sub>(.10)</sub>	<b></b> 07 <sub>(.08)</sub>	<b>-</b> .07 <sub>(.09)</sub>	<b>-</b> .03 <sub>(.10)</sub>	$.10_{(.09)}$	.08(.09)	$.05_{(.09)}$	.03(.09)	$.15_{(.08)}$
$W_{\text{social.potent}} \rightarrow H$	<b>-</b> .07 <sub>(.09)</sub>	<b>-</b> .08 <sub>(.09)</sub>	<b>-</b> .03 <sub>(.09)</sub>	<b>-</b> .06 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.09)</sub>	- <b>.28</b> (.09)	- <b>.23</b> (.09)	- <b>.22</b> (.09)	- <b>.21</b> (.09)	- <b>.24</b> (.09)
$H_{\text{social.potent}} \! \rightarrow \! W$	<b>-</b> .15 <sub>(.09)</sub>	<b></b> 06 <sub>(.10)</sub>	<b></b> 06 <sub>(.08)</sub>	<b>-</b> .14 <sub>(.09)</sub>	<b>-</b> .18 <sub>(.10)</sub>	<b>-</b> .05 <sub>(.08)</sub>	$.01_{(.08)}$	<b></b> 06 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.09)</sub>	01(.08)

Table 11. APIM Associations between Husbands' and Wives' Warmth and Dominance and MPQ Positive Emotionality – Agency

	<u>Mean Warmth</u>				Mean Dominance					
		Best		Husband	Wife		Best		Husband	Wife
	Total	Things	Vacation	Conflict	Conflict	Total	Things	Vacation	Conflict	Conflict
Hintercept	<b>-</b> .04 <sub>(.09)</sub>	<b></b> 08 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.09)</sub>	$.02_{(.09)}$	<b>-</b> .04 <sub>(.10)</sub>	<b></b> 01 <sub>(.10)</sub>	<b>-</b> .01 <sub>(.09)</sub>	$.04_{(.09)}$	$.00_{(.09)}$	<b>-</b> .11 <sub>(.10)</sub>
Wintercept	$.05_{(.09)}$	.01(.10)	$.10_{(.08)}$	$.04_{(.09)}$	.02(.10)	$.04_{(.08)}$	.03(.09)	<b></b> 02 <sub>(.09)</sub>	$.02_{(.09)}$	<b>.16</b> (.08)
<u>Actor Effects</u>										
$\mathrm{H}_{\mathrm{CON}}\!\rightarrow\mathrm{H}$	<b>-</b> .01 <sub>(.09)</sub>	<b>-</b> .02 <sub>(.09)</sub>	.07(.09)	<b>-</b> .02 <sub>(.09)</sub>	<b>-</b> .05 <sub>(.10)</sub>	$.12_{(.10)}$	.05(.10)	.13(.09)	$.14_{(.09)}$	.09(.10)
$W_{CON}\!\rightarrow W$	<b>-</b> .10 <sub>(.10)</sub>	<b>-</b> .16 <sub>(.10)</sub>	<b>-</b> .12 <sub>(.09)</sub>	<b>-</b> .01 <sub>(.09)</sub>	<b>-</b> .13 <sub>(.10)</sub>	<b>31</b> (.08)	- <b>.21</b> (.09)	- <b>.34</b> (.09)	<b>23</b> (.09)	- <b>.24</b> (.08)
$\mathrm{H}_{\mathrm{control}} \mathop{\rightarrow} \mathrm{H}$	.15(.09)	.11(.09)	.15(.09)	.15(.09)	.08(.10)	.16(.10)	.10(.10)	.17(.10)	.17(.10)	.10(.10)
$W_{control} \! \rightarrow W$	$.05_{(.10)}$	<b>-</b> .07 <sub>(.11)</sub>	<b></b> 03 <sub>(.09)</sub>	.18(.10)	.00(.10)	- <b>.27</b> (.09)	<b>-</b> .15 <sub>(.09)</sub>	- <b>.26</b> (.09)	<b>21</b> (.09)	- <b>.25</b> (.08)
$H_{harm.avoid} \rightarrow H$	.15(.09)	.10(.09)	<b>.20</b> (.09)	.11(.09)	.07(.10)	.10(.10)	.08(.10)	.06(.10)	.15(.10)	.09(.10)
$W_{harm.avoid} \! \rightarrow W$	- <b>.22</b> (.10)	- <b>.28</b> (.10)	<b></b> 07 <sub>(.09)</sub>	<b>-</b> .10 <sub>(.10)</sub>	- <b>.25</b> (.10)	<b>-</b> .09 <sub>(.09)</sub>	<b>-</b> .13 <sub>(.09)</sub>	<b></b> 03 <sub>(.10)</sub>	<b></b> 03 <sub>(.10)</sub>	<b>-</b> .08 <sub>(.09)</sub>
$H_{traditional} \rightarrow H$	.02(.10)	<b>-</b> .03 <sub>(.10)</sub>	.09(.10)	<b>-</b> .01 <sub>(.10)</sub>	.00(.11)	.11 <sub>(.11)</sub>	<b>-</b> .01 <sub>(.11)</sub>	.14(.11)	.08(.10)	.12(.11)
$W_{traditional} \! \rightarrow W$	<b>-</b> .03 <sub>(.10)</sub>	.02(.11)	$.04_{(.09)}$	<b>-</b> .05 <sub>(.10)</sub>	<b>-</b> .11 <sub>(.10)</sub>	- <b>.22</b> (.09)	- <b>.19</b> <sub>(.10)</sub>	- <b>.23</b> (.10)	- <b>.20</b> (.10)	<b>-</b> .09 <sub>(.09)</sub>
<u>Partner Effects</u>										
$W_{CON} \! \rightarrow \! H$	<b>-</b> .09 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.09)</sub>	<b></b> 08 <sub>(.09)</sub>	<b>-</b> .06 <sub>(.09)</sub>	<b>-</b> .06 <sub>(.10)</sub>	<b>.19</b> (.10)	$.12_{(.10)}$	<b>.21</b> (.09)	.11(.09)	.17(.10)
$\mathrm{H}_{\mathrm{CON}}\!\rightarrow\mathrm{W}$	<b>-</b> .13 <sub>(.09)</sub>	<b></b> 11 <sub>(.10)</sub>	<b></b> 09 <sub>(.08)</sub>	<b>-</b> .15 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.10)</sub>	$.03_{(.08)}$	$.06_{(.09)}$	<b></b> 11 <sub>(.09)</sub>	$.07_{(.09)}$	$.07_{(.08)}$
$W_{control} {\rightarrow} H$	.10(.09)	.02(.09)	.09(.09)	.12(.09)	.09(.10)	.12(.10)	.05(.10)	.17(.09)	.10(.10)	.04(.10)
$H_{control} \rightarrow W$	.08(.10)	.08(.10)	.07(.09)	.06(.10)	.04(.10)	<b>-</b> .02 <sub>(.08)</sub>	$.06_{(.09)}$	<b></b> 10 <sub>(.09)</sub>	<b></b> 03 <sub>(.09)</sub>	$.02_{(.08)}$
$W_{harm.avoid} {\rightarrow} H$	<b>-</b> .12 <sub>(.10)</sub>	<b>-</b> .13 <sub>(.09)</sub>	<b>-</b> .13 <sub>(.09)</sub>	<b>-</b> .01 <sub>(.10)</sub>	<b>-</b> .15 <sub>(.10)</sub>	.03(.10)	.07(.10)	.02(.10)	.00(.10)	<b>-</b> .04 <sub>(.11)</sub>
$\mathrm{H}_{\mathrm{harm.avoid}} \! \rightarrow \mathrm{W}$	.06(.10)	<b>-</b> .04 <sub>(.10)</sub>	<b>-</b> .04 <sub>(.09)</sub>	<b>-</b> .12 <sub>(.10)</sub>	<b>-</b> .04 <sub>(.10)</sub>	<b>-</b> .03 <sub>(.09)</sub>	<b>-</b> .03 <sub>(.09)</sub>	<b></b> 11 <sub>(.09)</sub>	.03(.09)	<b>-</b> .03 <sub>(.08)</sub>
$W \rightarrow H_{traditional}$	<b>-</b> .15 <sub>(.10)</sub>	<b>-</b> .09 <sub>(.10)</sub>	<b>-</b> .11 <sub>(.10)</sub>	<b>-</b> .12 <sub>(.10)</sub>	<b>-</b> .15 <sub>(.10)</sub>	.10(.11)	.12(.10)	.04(.10)	.03(.10)	.14(.11)
$H {\rightarrow} W_{traditional}$	<b>-</b> .05 <sub>(.11)</sub>	<b>-</b> .13 <sub>(.11)</sub>	<b>-</b> .10 <sub>(.10)</sub>	.02(.11)	.02(.11)	$.04_{(.09)}$	.03(.10)	<b></b> 05 <sub>(.10)</sub>	.10(.10)	$.04_{(.09)}$

Table 12. APIM Associations between Husbands' and Wives' Warmth and Dominance and MPQ Constraint

#### **APPENDIX B: FIGURES**



Figure 1. The Vulnerability Stress Adaptation (VSA) Model of Marriage

*Note:* This model was initially proposed by Karney and Bradbury (1995, p. 23). They hypothesized that all paths shown in this model relate as predicted. In my study, I will be examining the paths represented by the bold (non-dashed) lines. These include the associations between adaptive processes and 1) marital quality, and 2) enduring vulnerabilities.

Figure 2. The Interpersonal Circumplex (IPC)





Figure 3. Negative Reciprocity and Demand-Withdraw Patterns Depicted on the IPC







Figure 5. Hypothesis 1.1: APIM Relating Husbands and Wives Warmth and Marital Satisfaction

Note: Paths represent standardized effects from multi-level regression models. Analyses testing Hypothesis 2.1 and 2.2 were also tested using this model, excepting that the dependent variables were husband and wife mean warmth, and the independent variables were husband and wife individual difference characteristics (i.e., personality traits, problems, and disorders).



Figure 6. Hypothesis 1.2: APIM Relating Dyadic Correspondence and Marital Satisfaction

Figure 7. Hypothesis 1.3: APIM Relating Marital Satisfaction with Dyadic Correspondence, Individual Warmth, and their Interaction



Note: Paths represent standardized effects from multi-level regression models.



Figure 8. Total Score Simple Slope Interactions between Marital Satisfaction, Mean Warmth, and Momentary Dominance Complementarity

*Note:* Dom Comp indicates momentary dominance complementarity. High and low values were defined as plus and minus SD from the sample mean. Thus, the line for "Hi Wife, Hi Hus" represents predicted satisfaction across levels of complementarity when both partners are relatively high in warmth, whereas "Hi Wife, Lo Hus" represents predicted satisfaction scores across levels of complementarity when wives' warmth is relatively high, but husbands' warmth is relatively low. This format also applies to Figures 8-12.

Figure 9. Husband Conflict Simple Slope Interactions between Marital Satisfaction, Mean Warmth, and Momentary Dominance Complementarity

### **Husband Conflict**



Figure 10. Wife Conflict Simple Slope Interactions between Marital Satisfaction, Mean Warmth, and Momentary Dominance Complementarity



#### **Wife Conflict**

Figure 11. Best Things Simple Slope Interactions between Marital Satisfaction, Mean Warmth, and Momentary Dominance Complementarity

# Panel A 1.000 Husbands' Marital Satisfaction Mean Warmth 0.500 Hi Hus, Hi Wife 0.000 • Hi Hus, Lo Wife - Lo Hus, Hi Wife - Lo Hus, Lo Wife -0.500 -1.000 Lo Dom Comp Hi Dom Comp Panel B 1.000 Wives' Marital Satisfaction 0.500 Mean Warmth Hi Wife, Hi Hus 0.000 - Hi Wife, Lo Hus • Lo Wife, Hi Hus Lo Wife, Lo Hus -0.500 -1.000 Lo Dom Comp Hi Dom Comp

### **Best Things**

Figure 12. Vacation Simple Slope Interactions between Marital Satisfaction, Mean Warmth, and Momentary Dominance Complementarity

# **Vacation**





## Figure 13. Case Example of Negative Reciprocity: Dyad 111, Best Things.



Figure 14. Case Example of Demand-Withdraw: Dyad 099, Husband Conflict.

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