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Understanding couple relationship well-being and its key determinants is paramount given the substantial costs of marital distress to individuals, families, as well as the society. However, some groups of couples have been historically underrepresented in prior marriage research (e.g., Non-Western couples). Without investigating these groups of couples systematically, the diversity inherent within marriage cannot be adequately acknowledged. Furthermore, from a cultural sensitivity perspective, empirical findings and theoretical perspectives derived from studies of one certain group of couples are likely to be poorly suited to or even irrelevant to the life experiences of another group of couples. To somewhat fill this gap, a series of empirical studies were conducted in the present body of work to particularly examine how the variation in Chinese couples' marital well-being over time could be accounted for by the complex, dynamic interplay among factors of different levels (e.g., individual characteristics, couple dyadic adaptive processes, and external contextual factors) based on the data from a recent longitudinal research project named Chinese Newlyweds Longitudinal Study (CNLS).

The first study in the present body of work focused on the associations between spouses' *personal characteristics* (i.e., neuroticism) and marital satisfaction and the mechanisms explaining why such associations might occur. Specifically, based on three annual waves of data obtained from 268 Chinese couples during their early years of marriage, this study tested an actor-partner interdependence mediation model in which

spouses' neuroticism was linked to the changes in their own and their partners' marital satisfaction through both intrapersonal (i.e., marital attribution) and interpersonal (i.e., marital aggression) processes. Considering both intra and interpersonal processes simultaneously in a single model, a series of indirect pathways were identified: Wave 1 Husbands' Neuroticism → Wave 2 Husbands' Negative Marital Attribution → Wave 1 to Wave 3 Changes in Husbands' Marital Satisfaction; and Wave 1 Wives' Neuroticism → Wave 2 Wives' Negative Marital Attribution or Aggression → Wave 1 to Wave 3 Changes in Wives' or Husbands' Marital Satisfaction. As such, this study not only adds to a limited body of research examining why neuroticism affects conjugal well-being, but also extends prior research by focusing on Chinese couples, utilizing a longitudinal, dyadic mediation model, and testing intra and interpersonal processes simultaneously. The findings also have important practical implications. That is, couples involving highly neurotic partners may benefit the most from interventions based on the cognitive-behavioral approaches. When working with couples bothered by neuroticism, practitioners need to help them address both dysfunctional interactive patterns and distorted cognitive styles.

The second study in the present body of work sought to understand the associations between *couple dyadic interactive processes* (i.e., marital hostility) and marital satisfaction and the conditions under which such associations might vary. Specifically, based on both observational and self-report survey data obtained from 106 Chinese couples during their early years of marriage, this study linked marital hostility observed from multiple couple interactions to both the concurrent levels of and the

subsequent changes in spouses' reports of relationship satisfaction, and also examined how intrapersonal traits (i.e., self-esteem), relationship features (i.e., commitment), external environment factors (i.e., life event stress), and spouses' avoidance tendency in marital problem resolutions may contextualize such associations. Results indicated that both the concurrent and the longitudinal actor and/or partner effects of marital hostility on marital satisfaction were moderated by spouses' own and/or their partner's self-esteem, commitment, life event stress, and avoidance. Furthermore, in general, whereas spouses' *own* factors as moderators explained under what circumstances hostility may be harmful for relationship satisfaction, spouses' *partner's* factors as moderators determined when hostility can be beneficial for relationship satisfaction. Such findings highlight the importance of approaching the association between marital hostility and conjugal well-being from a dyadic, multilevel, and contextual perspective.

The third study in the present body of work examined the associations between *external contextual factors* (i.e., parents' attitude and in-law relationship quality) and marital satisfaction and how different social network factors might operate in conjunction with each other to shape conjugal well-being over time in Chinese marriage. Based on three annual waves of data obtained from 265 Chinese couples during the early years of marriage and utilizing an actor-partner interdependence mediation model with latent difference scores, this study examined the associations among parental attitude toward their adult children's marriage, in-law relationship quality, and adult children's marital satisfaction. Results indicated that when both husbands' and wives' parents' attitude and relationship quality with mothers-in-law and with fathers-in-law were considered

simultaneously in a single model, only two indirect pathways were still significant: husbands' parents' satisfaction with their adult children's marriage was positively associated with the *changes* in both husbands' and wives' marital satisfaction via wives' relationship quality with their mothers-in-law. Such findings not only suggest the particularly salient roles of husbands' parents' attitude and the relationship between daughters-in-law and mothers-in-law in predicting Chinese adult children's marital well-being, but also highlight the importance of conceptualizing families as configurations of interdependent relationships across multiple households and examining marital well-being from ecological and social network perspectives.

Taken altogether, the present body of work represents one of the very first steps in systematically understanding marital well-being and its determinants among Chinese couples. Findings of the three aforementioned studies have clearly demonstrated that Chinese couples' relationship development over time is a product of the complex, dynamic intersections of individual characteristics, relational dynamics, and external contextual factors. Furthermore, findings of the present body of work may promote cultural sensitivity in marriage research by yielding important insights for developing culturally relevant frameworks for understanding marital issues in Asian countries.

CHANGE IN MARITAL SATISFACTION AMONG CHINESE COUPLES DURING
THE EARLY YEARS OF MARRIAGE: THE ROLES OF INDIVIDUAL
CHARACTERISTICS, COUPLE INTERACTIVE PROCESSES,
AND SOCIAL NETWORK FACTORS

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CHAPTER I

GENERAL INTRODUCTION

Understanding couple relationship well-being and its key determinants is paramount given the substantial costs of marital distress to individuals, families, as well as the society (Amato, 2000; Cummings & Davies, 2002; Proulx, Helms, & Buehler, 2007; Robles, Slatcher, Trombello, & McGinn, 2014; Schramm, Harris, Whiting, Hawkins, Brown, & Porter, 2013). However, it is unfortunate that some groups of couples have been historically underrepresented in prior marriage research (e.g., Non-Western couples, LGBT couples, couples living in poverty) (Ji, 2015; Karney & Bradbury, 2005; Karney, Kreitz, Sweeney, & Ganong, 2004; Umberson, Thomeer, Kroeger, Lodge, & Xu, 2015). This is a critical limitation because: (a) the considerable diversity inherent within marriages cannot be adequately acknowledged without systematically investigating the marital experiences of the underrepresented groups of couples; and (b) empirical findings and theoretical perspectives derived from studies of one certain group of couples are likely to be poorly suited to or even irrelevant to the life experiences of another group of couples (Bermúdez, Muruthi, & Jordan, 2016; Fincham & Beach, 2010; Ji, 2015; Murry, Smith, & Hill, 2001). Thus, to somewhat fill this gap I conducted a series of empirical studies particularly examining conjugal well-being and its core determinants in a historically underrepresented group of couples: Chinese couples.

Several classic, comprehensive reviews by leading marriage scholars on previous couple relationship literature (e.g., Bradbury, Fincham, & Beach, 2000; Fincham & Beach, 2010; Fincham, Stanley, & Beach, 2007; Finkel, Simpson, & Eastwick, 2016; Gottman & Notarius, 2002; Huston, 2000; Karney & Bradbury, 1995; McNulty, 2016) have consistently suggested that the considerable variations in marital well-being over time should be primarily accounted for by the complex, dynamic interplay among factors of different levels, including individual strengths and vulnerabilities (e.g., personality traits), couple dyadic adaptive processes (e.g., marital conflict resolution), and external contextual factors (e.g., social network factors). Accordingly, the three studies included in the present body of work have their respective unique emphases. Specifically, (a) the first study focused on the associations between *spouses' personal characteristics* (i.e., neuroticism) and marital satisfaction and the mechanisms explaining why such associations may occur; (b) the second study sought to understand the associations between *couple interactive processes* (i.e., marital hostility during couple interactions) and marital satisfaction and the conditions under which such associations may vary; and (c) the third study examined the associations between *external contextual factors* (i.e., parental attitude toward adult children's marriage and in-law relations) and marital satisfaction and how different social network factors may operate in conjunction with each other to shape marital well-being over time.

The aforementioned three studies are based on data from a recent project named Chinese Newlyweds Longitudinal Study (CNLS), which is a three annual wave longitudinal study focusing on the developmental trajectory of couple relationship well-

being and its key individual, relational, and contextual determinants during the early years of Chinese marriage. It is particularly noteworthy that using samples of newlywed couples in marriage research have some unique advantages (for detailed discussion, see Cohan & Bradbury, 1997; Huston, Caughlin, Houts, Smith, & George, 2001; Karney & Bradbury, 1995; Leonard & Roberts, 1998; Neff & Karney, 2005, 2007; Storaasli & Markman, 1990). First, the homogeneous nature of marital duration in such samples may help researchers detect important effects that otherwise might have been masked by differences associated with relationship length. Second, the generally higher levels of couple relationship well-being and the dramatic changes in conjugal quality and stability in this stage (e.g., the elevated risks of disruption) allow researchers to identify factors predictive of the development of marital outcomes. Lastly, newly married couples are in a period of flux and face particular transitional stress and tasks. Dynamics demonstrated in this stage may set in motion processes contributing to the establishment of interactive patterns and determine long-term marital outcomes. Thus, examining conjugal well-being and its key determinants during the first few years of marriage may serve as an important foundation for the development of early preventive and intervention programs.

Lastly, the present body of work is imperative also because it not only echoes the long-standing calls for cultural sensitivity in marriage and family research (e.g., Bermúdez et al., 2016; Murry et al., 2001; Staples & Mirandé, 1980; Triandis & Brislin, 1984), but also responds to the claim that it is important to “indigenize” the existing classic theories and develop “local” theories for understanding marriage and family issues in Asian countries (e.g., Hwang, 2005; Ji, 2015).

CHAPTER II

STUDY 1. NEUROTICISM AND CHANGE IN MARITAL SATISFACTION AMONG CHINESE COUPLES DURING THE EARLY YEARS OF MARRIAGE: THE MEDIATING ROLES OF MARITAL ATTRIBUTION AND MARITAL AGGRESSION

Introduction

Couple relationship researchers have long been interested in examinations of the associations between spouses' personal characteristics and their conjugal well-being. In line with this focus, a substantial body of research has demonstrated that individuals with problematic personality traits tend to be less satisfied in marriage, more likely to experience divorce, and more difficult as spouses. Among different personality traits, several meta-analytic reviews have consistently indicated that neuroticism is a particularly salient individual personality characteristic influencing couple relationship well-being (e.g., Heller, Watson, & Ilies, 2004; Karney & Bradbury, 1995; Malouff, Thorsteinsson, Schutte, Bhullar, & Rooke, 2010). The existing studies concerned with the relational implications of neuroticism, however, have been limited in various important ways. First, research in this field has been conducted primarily with samples of Western couples. Second, examinations of why the association between neuroticism and marital well-being may occur remain sparse. In terms of the existing slim body of research aimed at delineating the mechanisms through which neuroticism affects marital well-being, some critical theoretical and methodological gaps can be identified.

From a theoretical perspective, neuroticism represents a general inclination to experience “distress, discomfort, and dissatisfaction over time and regardless of the situation” (Watson & Clark, 1984, p. 483). Individuals scoring high in this trait not only tend to “have irrational ideas, be less able to control their impulses, and cope more poorly than others with stress” (Costa & McCrae, 1992, p. 14), but also tend to “focus on the negative side of others and the world in general” and thus often “have a less favorable view of self and other people” (Watson & Clark, 1984, p. 483). Accordingly, two core pathways via which neuroticism affects conjugal well-being can be identified: (a) individuals with higher levels of neuroticism are more likely to interpret their relationship experiences in a more pessimistic and critical light and thus appear to be particularly vulnerable to relationship distress (i.e., *a perceptual, cognitive mechanism*) (e.g., Karney, Bradbury, Fincham, & Sullivan, 1994); and (b) individuals scoring high in neuroticism are more likely to be hostile when interacting with their partners under stressful circumstances and such negativities may contribute to relationship maladjustment (i.e., *a behavioral, interactive mechanism*) (e.g., Donnellan, Conger, & Bryant, 2004).

Although both mechanisms have been somewhat corroborated in prior research, few studies have examined them *simultaneously* in a single model (Caughlin, Huston, & Houts, 2000; Kurdek, 1997; McNulty, 2008). This is a critical omission because: (a) without considering different processes at the same time, researchers cannot identify their respective, unique influences on conjugal outcomes and thus fail to obtain increased specificity in our understanding of why neurotic partners are more likely to have troubled relationships; and (b) examining different mechanisms simultaneously may yield

important insights for practice by clarifying whether practitioners need to address *both* spouses' dysfunctional interactive behaviors and maladaptive perceptual cognitions when assisting couples bothered by neuroticism.

From a methodological perspective, prior research examining the mechanisms via which neuroticism affects conjugal well-being has primarily utilized cross-sectional or very short-term longitudinal (i.e., two waves) designs. However, following the analytic recommendations for testing mediational hypotheses (e.g., Maxwell, Cole, & Mitchell, 2011), a more rigorous approach might be conducting temporally ordered prospective analyses using assessments of putative predictors, mediators, and outcomes across three annual waves of data, which could help more appropriately address the temporality of associations among variables. In addition, when detecting the significance of indirect effects, prior studies have primarily employed the more traditional Sobel test even though the prerequisite of this application (i.e., the sampling distribution of the indirect effect is normal) is rarely met (Hayes, 2009). To date, a state-of-the-art technique for detecting indirect effects is bootstrapping, a nonparametric method of estimating bias-corrected standard errors and confidence intervals that does not make assumptions about the sampling distribution of the indirect effect and provides more accurate Type I error rates and greater power for detecting indirect effects (Preacher & Hayes, 2008).

In addition, the interdependence nature of marital relationships highlights the importance of approaching the association between neuroticism and conjugal well-being from a dyadic perspective. Neuroticism as an intrapersonal problematic trait not only may spill over into their interpersonal domain and impair their own relationship well-being,

but also may cross over to hurt their partners' relationship adjustment (Schaffhuser, Wagner, Lüdtkke, & Allemand, 2014; Slatcher & Vazire, 2009). However, the actor and partner effects of neuroticism on marital well-being and their respective explanatory mechanisms remain understudied (Caughlin et al., 2000; Finn, Mitte, & Neyer, 2013).

Taken altogether, the current study sought to address the aforementioned limitations by testing an actor-partner interdependence mediation model (APIMeM; Ledermann, Macho, & Kenny, 2011) in which spouses' neuroticism was linked to changes in their own and their partners' marital satisfaction through both the perceptual, cognitive (i.e., marital attribution) and behavioral, interactive processes (i.e., marital aggression) (see Figure 1 for the conceptual model). It is noteworthy that: (a) this model was based on three annual waves of data obtained from Chinese couples so that neuroticism, mediating processes, and satisfaction can be temporally ordered; (b) the bootstrapping approach was utilized to estimate indirect effects; and (c) all couples in the present sample were in the early years of marriage. The homogeneous nature of marital duration and the higher levels of relationship well-being in this sample may help detect effects that otherwise might have been masked by differences associated with marital length and allow us to identify factors predictive of changes in marital well-being.

Theoretical Foundation

The theoretical grounding for the current study is based in the vulnerability-stress-adaptation (VSA) model of marital development proposed by Karney and Bradbury (1995). Simply put, this model provides an integrative and comprehensive framework for clarifying how enduring vulnerabilities (e.g., problematic personality traits), stressful

events and circumstances (e.g., financial hardship), and adaptive processes (e.g., behavioral exchanges between partners while solving marital problems and their appraisals of marital interactions) may combine to account for variations in marital quality and stability over time. However, limited by the scope, the present study sought to test only some of the key components and pathways in this model.

Among several central propositions of this model, the one that is particularly relevant for the current study is that “the enduring vulnerabilities spouses bring to marriage may exert their longitudinal influence on marital outcomes through their effects on spouses' ability to adapt to the challenges they encounter” (Karney & Bradbury, 1995, p. 24) (i.e., enduring vulnerabilities → adaptive processes → marital well-being). In the current study I specified this proposition with respect to the roles of neuroticism, marital attribution, and marital aggression in predicting marital satisfaction. Neuroticism, as one individual personality characteristic, represents a specific enduring vulnerability that spouses may bring to their conjugal bonds; marital attribution and aggression are among the important cognitive and behavioral components involved in couple adaptive processes; and marital satisfaction can be viewed as a key indicator of marital well-being. Informed by the aforementioned proposition, I hypothesized that spouses' neuroticism is associated with marital satisfaction (at least partly) through its effects on marital attribution and marital aggression.

Empirical Background

The role of marital attribution. As noted already, theoretically, individuals with higher levels of neuroticism often tend to dwell on their own negative qualities as well as

those of other people and the world in general, and thus they often construe their interpersonal experiences more pessimistically than do those with lower levels of neuroticism, regardless of the actual quality of such experiences (Watson & Clark, 1984). Accordingly, in marriage neurotic spouses may be more likely to filter, process, and appraise marital events in a negative manner. Indeed, in a cross-sectional survey study, Karney et al. (1994) found that spouses high in neuroticism tended to make maladaptive attributions for negative events in marriage. In an observational study, McNulty (2008) also found that more neurotic spouses reported more negative perceptions of their partners' behaviors during discussions of marital problems, controlling for the observed quality of partners' behaviors and spouses' own marital satisfaction.

Moreover, as the findings of a longitudinal study by Karney and Bradbury (2000) indicated, neuroticism could even account for individual differences in the developmental course of negative marital attributions. Specifically, their growth curve analysis indicated that neuroticism predicted the rates of change in causality attributions for both husbands and wives (i.e., spouses scoring higher in neuroticism experienced less change in their negative attributions over time), suggesting that neurotic spouses' maladaptive attributions appear to be stable and rigid over time. To my knowledge, the most recent efforts aimed at delineating the cognitive processes underlying the association between neuroticism and marital satisfaction were by Finn and colleagues (2013). They found that neurotic spouses tended to interpret ambiguous partner and relationship scenarios in a more negative way, and that the negatively biased relationship-specific interpretations served as one mechanism via which neuroticism exerted its negative effects on

relationship satisfaction. Furthermore, such findings were retained even after controlling for spouses' general interpretation bias and attachment styles.

Thus, based on prior research, the negative effects of neuroticism on marital well-being have underlying *perceptual, cognitive* bases. It seems warranted to hypothesize that the reason why neurotic spouses are more likely to have distressed relationships may be (partly) because of their maladaptive attributions for marital problems.

The role of marital aggression. According to the definition of neuroticism, neurotic individuals are often highly reactive to stress, lack abilities to effectively control impulses, and tend to engage in dysfunctional behaviors, especially aggression, when coping with interpersonal conflicts (Connor-Smith & Flachsbart, 2007; Costa & McCrae, 1992). However, conflicts are inevitable in marriage, and whether spouses can appropriately handle such conflicts plays a crucial role in shaping the course of marital well-being. Thus, neurotic spouses may be particularly vulnerable to marital distress because they tend to have more marital conflicts with partners and also often use maladaptive ways, especially harsh and hostile strategies, to resolve such conflicts.

Indeed, several studies using diverse research methods have consistently demonstrated that spouses' neuroticism was positively associated with the frequency and the intensity of aggressive behaviors they displayed when dealing with marital conflicts (e.g., Hellmuth & McNulty, 2008; Leonard & Roberts, 1998; McNulty, 2008).

Furthermore, accumulating evidence suggests that negativity spouses demonstrated during their daily marital interactions (e.g., hostility, angry coercion) and the dysfunctional resolution strategies they utilized in marital conflicts (at least partly)

explained why the negative association between neuroticism and different aspects of couple relationship well-being (e.g., marital satisfaction, commitment, and sexual quality) might occur (e.g., Caughlin et al., 2000; Donnellan et al., 2004; Hanzal & Segrin, 2009; Kurdek, 1997; Woszidlo & Segrin, 2013)

Therefore, in addition to the perceptual, cognitive bases, prior theoretical and empirical research also suggests that the negative effects of neuroticism on marital well-being also may have some *interactive, behavioral bases*. As such, it seems warranted to hypothesize that neuroticism may exert its influences on marital outcomes (partially) through its effects on some *behavioral, interactive* processes, especially negative behaviors when resolving marital problems.

Neuroticism, attribution, and aggression in Chinese marriage. The existing research particularly concerned with the association between each of the study predictors (i.e., neuroticism, marital attribution, and marital aggression) and marital satisfaction among Chinese couples remains quite limited. The available studies have generally replicated findings obtained in previous research conducted with samples of Western couples. In terms of neuroticism, three studies focusing on the associations between various personality traits and couple relationship well-being consistently found that neuroticism was negatively associated with marital quality among Chinese couples (Du, Li, & He, 2003; Li, Cheng, Wang, & Wei, 2002; Wang, Wang, Jin, Wang, & Zhao, 2005). It should be noted that, however, these studies were based on small samples and analyzed data very preliminarily (i.e., the zero-order bivariate correlation analysis). Findings of a more recent study that was based on large, nationally representative samples of Chinese

urban couples and utilized more advanced analytic strategies (i.e., structural equation modeling) suggest that that spouses' emotional stability (as an opposite indicator of neuroticism) was positively associated with their own and partners' marital satisfaction (Luo, Chen, Yue, Zhang, Zhaoyang, & Xu, 2008).

As to marital attribution, a cross-cultural study by Stander et al. (2001) found that distress-maintaining attributions were negatively associated with marital satisfaction among Chinese couples, and there were no significant differences in the strength of such associations between Chinese couples and American couples. Utilizing a dyadic approach, Hou et al. (2010) found that in Chinese marriage wives' maladaptive attributions were negatively related to their own marital quality, whereas husbands' maladaptive attributions were negatively related to both their own and wives' marital quality.

In terms of marital aggression, although a slim body of research concerned with marital aggression among Chinese couples can be obtained, almost all of them focused on the prevalence and correlates of intimate partner violence (IPV) (e.g., Hou, Yu, Ting, Sze, & Fang, 2011; Tang 1994; Tang & Lai, 2008). The consistent findings across studies are that marital distress or poor marital quality is a salient contributor to various types of IPV and that the occurrence rates of different forms of aggression in Chinese marriage are relatively comparable to those in American marriage. During the recent years, increasing efforts have been devoted to examinations of the negativity Chinese spouses engage in during their interactions (either when solving problems or providing supports) and its association with marital well-being (e.g., Cao, Fang, Fine, Ju, Lan, & Liu, 2015; Hiew, Halford, van de Vijver, & Liu, 2016; Johnson, Nguyen, Anderson, Liu, & Vennum, 2015;

Williamson, Ju, Bradbury, Karney, Fang, & Liu, 2012). According to these studies, as might be expected, negative interactive behaviors, including aggressive behaviors, are generally detrimental for marital well-being among Chinese couples.

To my knowledge, no studies to date have examined how neuroticism, marital attribution, and marital aggression may operate in conjunction with each other to shape Chinese couples' relationship well-being. However, as noted already, marital attribution and aggression may serve as critical mechanisms through which neuroticism affects conjugal bonds. This current study thus represents one of the first steps in filling this gap.

Method

Study Design and Sample Characteristics

The present study is based on data from a larger project named Chinese Newlyweds Longitudinal Study (CNLS). At Time 1, sampling was undertaken to identify couples who were within 3 years of their wedding, in their first marriage, without children, and living together in Beijing. Couples who met the above criteria were recruited by research assistants at the study's home institution. They were trained to contact acquaintances to locate eligible couples and post announcements on websites or in communities to call for couples. Ultimately, 268 couples participated in this study.

At Time 1, the 268 couples had been married for a mean of 13.59 months ($SD = 9.69$). Husbands and wives were on average 29.59 ($SD = 3.25$) and 28.08 years old ($SD = 2.51$), respectively. The modal level of education for both husbands and wives was a bachelor's degree (i.e., four years of college). The median levels of monthly income for husbands and wives were 7,000 RMB ($SD = 6,180.22$, around US \$1,049.07) and 5,000

RMB ($SD = 3,996.03$, around US \$749.336), respectively. Based on the publically available Chinese census data at the year of data collection (Beijing Municipal Bureau of Statistics, 2011; National Bureau of Statistics of the People's Republic of China, 2011), the average annual wage of the employed people living in Beijing was 65,683 RMB (around 5,473 RMB monthly) and almost 35% of the employed people in Beijing had received education of college-level or above. Thus, it seems that participants in the current study had relatively higher levels of income and education as compared to the broader population in Beijing at the year of data collection.

One year after the Time 1 assessment, 224 of the 268 couples participated in the Time 2 assessment, resulting in an 83.58% retention rate. Two years after the Time 1 assessment, 203 of the 268 couples participated in the Time 3 assessment, resulting in a 75.75% retention rate. To test attrition effects, independent samples t tests (attrited vs. retained) were conducted on all Time 1 variables of interest in the current study. Among eight pairs of comparisons, there was only one significant difference: the attrited husbands reported lower levels of satisfaction than the retained husbands ($Mean_{\text{attrited}} = 6.42$, $SD_{\text{attrited}} = 1.13$, $Mean_{\text{retained}} = 6.83$, $SD_{\text{retained}} = .88$, $t = -2.69$, $p < .01$, Cohen's $d = .40$). The magnitude of this difference was between "small" and "medium", based on Cohen's (1988) criteria with respect to Cohen's d . In addition, attrition analyses using multivariate analysis of variance were also conducted using all Time 1 variables of interest in the current study. The only significant difference between the retained and attrited partners based on the multivariate F s were consistent with that found based on the independent samples t tests.

The procedures conforming to the requirements of the Institutional Review Board at the study's home institution were implemented. Across waves, both husbands and wives were invited to the lab to participate in the study. For couples who could not come to the lab, research assistants collected the data by means of a home visit. First, the study was described in general terms by trained research assistant and signed written informed consent form was obtained from each participating couple. Then, husbands and wives separately completed self-report measures. Each couple was paid 100 RMB (approximately US \$15) and given a small gift (e.g., a photo frame) at each wave for their participation in the survey part of the study.

Measures

Measures used in the present study were originally developed for American couples. A team of graduate students majoring in family studies who are fluent in both Chinese and English first translated these materials into Mandarin, and then another team of bilingual graduate students back-translated them into English. The investigators also worked with translators to revise these materials as needed until it was evident that the Chinese items had meanings equivalent to those in the English version. Mandarin version materials were also sent to professors with expertise in Chinese marriage studies for suggestions. Such processes were repeated until no new suggestions emerged.

Cronbach's α s for measures are reported in Table 1.

Marital satisfaction. The 6-item Quality Marriage Index (QMI; Norton, 1983) was used to assess marital satisfaction. The first 5 items asked spouses to indicate their agreement with statements such as "My relationship with my partner makes me happy."

on a 7-point scale ranging from 1 (*Very strong disagreement*) to 7 (*Very strong agreement*). The last item asked spouses to indicate how happy they are in their marriage when all things were considered on a 10-point scale from 1 (*Very unhappy*) to 10 (*Perfectly happy*). The score for the last item was re-scaled to a 7-point scale. Mean scores were calculated at the first and the third wave and used in analyses. Higher scores indicated higher levels of marital satisfaction. The mean score of satisfaction at the first wave was used as the baseline control variable in the model.

Neuroticism. The Neuroticism subscale of the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992) was used. This subscale consists of 12 statements (e.g., “I often feel tense and jittery”) with which participants indicated the extent of their agreement on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Four of the 12 items were negatively worded (e.g., “I am not a worrier”). After reverse coding the scores for these items, I calculated mean scores of all items and used the mean scores in analyses. Higher scores indicate higher levels of neuroticism.

Marital attribution. I used a measure modified from the Marital Attribution Questionnaire (MAQ) by Stander, Hsiung, and MacDermid (2001) and the Relationship Attribution Measure (RAM) by Bradbury and Fincham (Bradbury & Fincham 1992; Fincham & Bradbury, 1992). Spouses were first instructed to think of one major problem they faced in marital lives and write it in the spaces provided at the very top of the questionnaire. Then, spouses were asked to make causal, responsibility, and blame attributions for the identified problem by answering the following 9 items.

To assess causal attributions, spouses were asked to rate on 7-point scales the extent to which the cause of the identified problem: (a) rests in the partner (from 1 = “*not at all*” to 7 = “*totally*”); (b) affects only the specific problem versus other areas of the marriage (from 1 = “*affects only this area*” to 7 = “*affects all areas*”); and (c) is likely to be absent versus present when the problem occurs in the future (from 1 = “*will never again be present*” to 7 = will “*always be present*”). To assess responsibility attributions, spouses were asked to rate on 7-point scales the extent to which: **(a)** the partner's contribution to the problem is intentional (from 1 = “*planned*” to 7 = “*unplanned*”); (b) the problem reflects the partner's selfish concerns (1 = “not at all”. 7 = “totally”); and **(c)** the partner’s actions could be justified (from 1 = “*not at all*” to 7 = “*totally*”). To assess blame attributions, spouses were asked to rate on 7-point scales the extent to which: (a) the partner deserves to be blamed for the problem (from 1 = “*not at all*” to 7 = “*totally*”); **(b)** the partner was at fault (from 1 = “*totally*” to 7 = “*not at all*”); and **(c)** the partner should be punished (from 1 = “*totally*” to 7 = “*not at all*”).

After reverse coding the scores for the four bolded items, I calculated the mean scores of all 9 items and used the overall mean scores in analyses. As such, the overall mean scores represent the levels of distress-maintaining marital attributions (i.e., the extent to which the respondents locate the causes of the identified problem in the partner, perceive the causes to be stable and global, and think that the partner's contribution to the problem is motivated by selfish concerns, intentional, and worthy of blame). Higher scores indicated higher levels of distress-maintaining marital attributions.

Marital aggression. A modified version of the verbal aggression subscale and the physical aggression subscale in the Conflicts and Problem-Solving Scales (CPS; Kerig, 1996) was used to assess spouses' aggression in marital problem resolution processes. The verbal aggression subscale includes 6 items (e.g., "Name-calling, cursing, insulting"). The physical aggression subscale entails 8 items (e.g., "Push, pull, shove, grab partner"). On a 4-point scale ranging from 1 (*Never*) to 4 (*Often*), spouses were asked to report how often they employed each of the aggressive strategies when dealing with marital conflicts. Mean scores of the 14 items were calculated and used in analyses. Higher scores indicated higher levels of aggression in conflict resolution processes.

Analytic Approach and Procedures

Path analyses via Mplus Version 7.11 were used (Muthén & Muthén, 1998-2012). I tested an actor-partner interdependence mediation model (APIMeM; Ledermann et al., 2011) in which spouses' neuroticism was linked to change in their own and partners' marital satisfaction through both marital attribution and aggression. The APIMeM can account for the possible interdependence in couple dyadic data and produce the total effect, the direct effect, the overall indirect effect, and the specific indirect effect for each mediator. This allows researchers to pit various mediators against one another to examine their relative effects. The total effect is analogous to the association between predictor and outcome without controlling for mediators, the direct effect represents the association between predictor and outcome with mediators in the model, and the indirect effect represents the product of the association between independent variable and mediator and the association between mediator and outcome (Kenny, 2012).

According to recommendations by leading scholars in mediation analyses research (e.g., Hayes, 2009; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Rucker, Preacher, Tormala, & Petty, 2011), the requirement for a significant total effect prior to examining indirect effects should be abandoned and a nonsignificant direct effect should not be viewed as a stopping rule in the search for additional mediators. Rather, if there are theoretical reasons, researchers should explore indirect effects regardless of the significance of the total or direct effect. It is important to avoid using the terms “full” or “partial” when describing mediation. Instead, emphasis should be placed upon the significance and the magnitude of the indirect effect. However, reporting the significance of the total effect is still meaningful because it determines whether researchers can state that a total effect exists.

In the present study, indirect effects were assessed using bootstrapping, a state-of-the-art technique for detecting indirect effects. Bootstrapping is a nonparametric method of estimating standard errors and confidence intervals that does not make assumptions about the sampling distribution of the indirect effect and provides more accurate Type I error rates and greater power for detecting indirect effects (Preacher & Hayes, 2008). The bias-corrected bootstrapped SEs and CIs for indirect effects in the current study were based on 2,000 bootstrap resamples. Conclusions regarding mediation are based on whether or not the indirect pathways are statistically significant when examining 95% bias-corrected bootstrapped CIs around the unstandardized indirect associations.

Following the analytic recommendations for more rigorously testing mediational hypotheses (Maxwell et al., 2011), I conducted temporally ordered prospective analyses

using assessments of putative predictors, mediators, and outcomes across three annual waves of data collection. This approach more appropriately addressed the temporality of relations among variables. I evaluated the adequacy of models using the following indices (Kline, 2011): the Chi-Square statistic (χ^2), the comparative fit index (*CFI*), the root-mean-square error of approximation (*RMSEA*), and the standardized root-mean-square residual (*SRMR*). Models with nonsignificant χ^2 values, *CFI* values $> .90$, *RMSEA* values $< .08$, and *SRMR* values $< .05$ were considered to have an acceptable fit. However, when the sample size is relatively large, a significant χ^2 should be expected for most models (Byrne, 2001). Lastly, missing values in the present study were primarily due to unavailability of data from a specific wave, which were addressed by using the full information maximum likelihood estimation method (*FIML*) (Acock, 2005).

Results

Bivariate correlations and descriptive statistics for the study variables and the reliabilities for the utilized measures are shown in Table 1. All the measures had adequate reliabilities. At the bivariate level, correlations were in the expected directions.

The proposed model in which spouses' neuroticism at Time 1 was linked to change in their own and their partners' marital satisfaction from Time 1 to Time 3 via the intrapersonal processes (i.e., attribution) and interpersonal processes (i.e., aggression) at Time 2 had an adequate fit to the data as evidenced by a non-significant χ^2 (18.310, $df = 11$, $p = .075$), a *RMSEA* value of .050, a *CFI* value of .975, and a *SRMR* value of .045. Standardized parameter estimates for key pathways in the model are reported in Figure 1. For clarity, pathways with parameter estimates that were not significant at $p < .05$ (two-

tailed) are depicted in dash lines. The bolded indirect pathways were significant based on the 95% bootstrapped CIs around the unstandardized indirect associations.

In Table 2, unstandardized and standardized estimates, bootstrapped standard errors, and 95% bias-corrected bootstrapped CIs for the total, the direct, the overall indirect, and the specific indirect effects are reported. In term of the total effects, the two actor effect pathways were statistically significant: T1 Husbands' Neuroticism → T1 to T3 Changes in Husbands' Satisfaction, and T1 Wives' Neuroticism → T1 to T3 Change in Wives' Satisfaction, whereas the two partner effect pathways were non-significant: T1 Husbands' Neuroticism → T1 to T3 Change in Wives' Satisfaction, and T1 Wives' Neuroticism → T1 to T3 Change in Husbands' Satisfaction.

In terms of specific indirect effects, significant pathways include (see the bolded pathways in Table 2 and Figure 2): T1 Husbands' Neuroticism → T2 Husbands' Negative Attributions → T1-T3 Changes in Husbands' Satisfaction; T1 Wives' Neuroticism → T2 Wives' Negative Attributions → T1-T3 Changes in Wives' Satisfaction; T1 Wives' Neuroticism → T2 Wives' Aggression → T1-T3 Change in Wives' Satisfaction; T1 Wives' Neuroticism → T2 Wives' Negative Attributions → T1-T3 Changes in Husbands' Satisfaction; and T1 Wives' Neuroticism → T2 Wives' Aggression → T1-T3 Changes in Husbands' Satisfaction.

Discussion

The present study joins a limited body of research investigating why neuroticism affects conjugal well-being. In general, the findings are consistent with prior research

demonstrating that neuroticism has negative implications for conjugal well-being and that either distress-maintaining marital attributions or negativities in marital interactions can serve as explanatory mechanisms for those implications (Caughlin et al., 2000; Donnellan et al., 2004; Finn et al., 2013; Karney et al., 1994). Moreover, the present study replicates such associations in a sample of Chinese couples and suggests that marital attribution as an intrapersonal, perceptual process and marital aggression as an interpersonal, behavioral process can play respective, *unique* roles in accounting for why relationships involving neurotic partners often suffer from troubles (Caughlin et al., 2000; McNulty, 2008). Such findings also have practical implications. Couples involving highly neurotic partners may benefit the most from interventions based on cognitive-behavioral approaches. When working with couples bothered by neuroticism, practitioners need to help them address dysfunctional interactive patterns and distorted cognitive styles.

In addition, three interesting findings are particularly noteworthy. First, it appears that in the present sample spouses' neuroticism was negatively associated with the subsequent changes in marital satisfaction exclusively through their *own* rather than their *partners'* marital attribution or aggression. According to the classic definitions (Costa & McCrae, 1992; Watson & Clark, 1984), neuroticism represents individuals' predisposition to experience and dwell on unpleasant and disturbing emotions. Thus, as an intrapersonal trait, neuroticism could contribute more to individuals' *own* cognitions, emotions, and behaviors in marriage than to their partners' (as was the case in the bivariate correlation table in the present study). Indeed, using APIMeM to examine whether biased relationship-specific interpretations mediate the association between

neuroticism and relationship satisfaction, Finn et al. (2013) found that magnitudes of the indirect effects for pathways with individuals' own factors as mediators were generally much larger than those of pathways with individuals' partners' factors as mediators.

Second, husbands' marital aggression failed to mediate the association between their neuroticism and the changes in their own or partners' satisfaction whereas the corresponding effects for wives' marital aggression were significant. This was not consistent with the findings of the study by Donnellan et al. (2004) that for *both husbands and wives'* negative marital interactions (i.e., high hostility and low warmth) mediated the association between neuroticism and global evaluations of the relationship (i.e., marital quality and sexual satisfaction). This inconsistency may be because both marital attribution and aggression were *simultaneously* included in the present model as competing mediators. Whereas wives' aggression could explain the negative association between neuroticism and marital satisfaction *above and beyond* the effects of marital attribution, husbands' aggression could not play a unique role in mediating that association after marital attribution was statistically controlled. As may be noted in the correlation table, the magnitude of the correlation between husbands' attribution and aggression was larger than that for wives (i.e., $r_{\text{husbands}} = .436$ vs $r_{\text{wives}} = .197$).

From a different perspective, the finding that wives' aggression could explain the negative association between neuroticism and satisfaction *above and beyond* the effects of their attribution also may highlight the salient role of wives' negativities in shaping conjugal well-being in Chinese marriage. Indeed, prior research based on samples of Chinese couples has demonstrated that Chinese wives tend to engage in more frequent

and more intense negative behaviors in marital interactions and their negativities may have particularly crucial implications for couple relationship well-being (e.g., Schoebi, Wang, Ababkov, & Perrez, 2010; Williamson, Ju, Bradbury, Karney, Fang, & Liu, 2012). In the current study, I conducted a paired-t test to compare husbands' and wives' aggression at Wave 2 and did find that wives engaged in significantly more aggressive behaviors than did their husbands ($Mean_{wives} = 1.743$, $SD_{wives} = .561$, $Mean_{husbands} = 1.487$, $SD_{husbands} = .401$, $t = -6.667$, $p < .001$, Cohen's $d = .53$).

From a social structural perspective (e.g., Malik & Lindahl, 1998; Sagrestano, Heavey, & Christensen, 2006), this difference may reflect the gender power structure in Chinese marriage. An extensive body of research based on samples of Western couples has suggested that partners with less power in their close relationships may use aggression as a coercive tactic to exert influences, achieve desired changes, and ultimately redress the power imbalances (e.g., Babcock, Waltz, Jacobson, & Gottman, 1993; Overall, Hammond, McNulty, & Finkel, 2016; Sagrestano, Heavey, & Christensen, 1999). This may somewhat provide explanations for why I found that Chinese wives engaged in more aggressive behaviors than did their husbands in the present study. A much more detailed discussion is offered as follow with respect to the complexity of the situation that young married women may encounter in the contemporary China where values regarding gender and marriage are at the "crossroads".

Historically, Chinese culture has been long characterized by patriarchal traditions endorsing that the couple relationship is a vertical one in which wives should subordinate to their husbands (Pimentel, 2000). During the recent few decades, Chinese women's

social status has been continuously changing because of: the revision of laws promoting women's equal rights with men (e.g., Davis, 2014); the introduction of Western marital culture emphasizing gender equality (Xu, Xie, Liu, Xia, & Liu, 2007); as well as the notable rise in the proportions of women in labor market and high education (William, Xiao, Li, & Freedman, 1990). Unfortunately, the society does not evolve as a synchronized whole. The improvements of women's status at the institutional level may not be necessarily accompanied by gender equality practices in the day-to-day family lives. Indeed, in addition to the paid labor work, Chinese wives generally also undertake heavy household, childcare, and parental care responsibilities but still lack power in family decision-making processes (Lee, 2002; Pimentel, 2006; Shu, Zhu, & Zhang, 2013).

Entering marriage with the newly awakened feminist consciousness and egalitarian beliefs, contemporary Chinese women, especially those highly educated, young women living in developed urban areas (as was the case in the present sample) may have particularly strong desires to redress the gender power imbalances in their relationships but then disappointedly realize that gender inequality and patriarchal traditions are still ingrained in their "real" daily marital lives. As such, Chinese wives' low power status in relationships may involve being more dependent on their husbands and being less able to influence their husbands to achieve desired outcomes by using normal negotiation strategies. Then, they may have to resort to aggression as a means to compensate for their lack of marital power and push their husbands to make changes.

This may become ingrained and habitual over time as an interactive pattern between partners when resolving conflicts. Thus, it might be not surprising to find that Chinese wives displayed more aggressive behaviors than did their husbands in the current study.

Lastly, in the dyadic mediational model tested in the present study, wives' neuroticism was indirectly associated with the changes in *both* their own and their husbands' satisfaction, but husbands' neuroticism was *only* indirectly associated with the changes in their own satisfaction. Prior research approaching the association between neuroticism and marital well-being from a dyadic perspective has yielded quite mixed findings: whereas some studies found both actor effects and partner effects for both husbands' and wives' neuroticism (e.g., Finn et al., 2013; Fisher & McNulty, 2008), some other studies only found either actor effects or partner effects for both husbands' and wives' neuroticism (e.g., Schaffhuser et al., 2014). As the first longitudinal study investigating the association between neuroticism and marital satisfaction among Chinese couples with a dyadic approach, the current findings await replications and systematic examinations for explanations. However, some *speculations* may be helpful.

In general, extensive evidence has suggested that as compared to men, women are more relationship-oriented and have identities and moral development patterns that are more rooted in the ethics of caring for and connecting to others (Bilsker, Schiedel, & Marcia, 1988; Gilligan, 1982). In marriage, wives often tend to more closely monitor and evaluate couple relationships, be more sensitive and reactive to the negative changes in conjugal dynamics in the early years of marriage (e.g., Thompson & Walker, 1989), and be more likely to engage in demanding roles in marital interactions than do their

husbands (e.g., Christensen et al., 2006; Christensen & Heavey, 1990). Accordingly, stress emerging from wives' personal vulnerabilities (e.g., neuroticism) may be more likely to spill over into the couple relationship domain and affect husbands' perceived conjugal well-being than the vice versa. In addition, as compared to their Western counterparts, Chinese husbands are often more introverted, taciturn, and withdrawing in marital (conflictual) interactions, which may somewhat prevent their personal vulnerabilities (e.g., neuroticism) from impairing their wives' perceived conjugal well-being but result in "inner hurts" to themselves.

Limitations and Directions for Future Research

Several limitations of the present study and possible avenues for future inquiries should be noted. First, the present study was based on a sample of Chinese couples who were in their first few years of marriage and living in economically developed urban areas. Partners in these couples had relatively higher levels of socioeconomic status than did the broader population in the recruitment areas as compared to the census data from the year of data collection. Thus, the present findings should be cautiously generalized to Chinese couples who are in other marital stages, living in rural areas, and have lower levels of socioeconomic status. Research with larger and diverse samples is warranted.

Second, couples in the current study were recruited by research assistants at the study's home institution by contacting acquaintances, posting announcements on websites, and passing out leaflets in communities. In marriage and family research, the strategies researchers utilize to recruit participants play crucial roles in shaping the characteristics of the samples they can ultimately obtain, and thus also affect the

inferences and conclusions they will draw about the associations among study variables (Karney, Davila, Cohan, Sullivan, Johnson, & Bradbury, 1995; Kitson, Sussman, Williams, Zeehandelaar, Shickmanter, & Steinberger, 1982). As compared to the probability-based, random sampling techniques, the convenience sampling and snowball sampling strategies I used in the current study did not allow specification of the sampling frame (i.e., the population from which the sample is drawn) or estimation of nonresponse rates, and thus also diminished the generalizability of the present findings.

Third, as the attrition analyses indicated, the attrited husbands reported significantly lower levels of marital satisfaction than did the retained husbands. This might bring bias into the findings by limiting the variance of the changes in husbands' satisfaction across waves. As might be noted in the model results in Figure 1, the stability coefficient of husbands' satisfaction from Time 1 to Time 3 appeared to be much larger than that of wives' satisfaction (i.e., $\beta_{\text{husbands}} = .395, p < .01$ vs $\beta_{\text{wives}} = .183, p < .05$). In other words, given that couples involving husbands who were not very satisfied in their marriage had withdrawn from the later participation, couples retained at the later waves of data collection might represent a group with lower levels of marital risks.

Fourth, constructs in the current study were all assessed with self-report surveys. The associations among variables might be inflated because of the shared informant and method variance. Thus, future research should assess contiguous constructs in the model with different informants and methods to minimize the shared informant and method bias. Third, aggression as a behavioral, interpersonal process was measured with self-report surveys. In other words, aggression in the present study is spouses' perceived aggression

and thus might involve spouses' perceptual construal. A more "objective" way might be rating spouses' aggressive behaviors during interactions by observers so that the behavioral processes could be more distinct from the perceptual processes.

Lastly, the aggressive behaviors examined in the current study (i.e., aggressive behaviors when resolving conflicts) were only a subset out of numerous negative behaviors that can affect conjugal bonds. Given that dispositional negativity is associated with negativity in a wide variety of interpersonal behaviors, future research would benefit from sampling negative behaviors from more diverse interactive contexts. In addition, it also might be interesting to go beyond interpersonal negativity to examine if neuroticism could influence marital well-being via decreasing interpersonal *positivity*.

Conclusion

Utilizing a longitudinal dyadic mediation model and considering key intra and interpersonal mechanisms simultaneously, the present study provides evidence supporting that the well-established negative association between neuroticism and marital satisfaction has both cognitive, perceptual bases and behavioral, interactive bases. Specifically, distress-maintaining marital attribution style is among the cognitive factors and aggressive behaviors when resolving marital conflicts is among the behavioral factors that can explain why neuroticism often impairs conjugal well-being. Thus, couples involving highly neurotic partners may benefit the most from interventions based on cognitive-behavioral approaches. When working with couples bothered by neuroticism, practitioners need to help them address dysfunctional interactive patterns as well as distorted cognitive styles.

CHAPTER III

STUDY 2. THE ASSOCIATION BETWEEN MARITAL HOSTILITY AND MARITAL SATISFACTION AMONG CHINESE COUPLES DURING THE EARLY YEARS OF MARRIAGE: A DYADIC, MULTILEVEL, AND CONTEXTUAL PERSPECTIVE

Introduction

Decades of marital observational research has consistently demonstrated that the quality of communication between spouses can reliably distinguish between distressed and nondistressed couples (Fincham, 2004; Gottman, & Notarius, 2000). As one of the most critical indicators of marital communication quality, hostile exchanges between partners in marriage play crucial roles in determining spouses' marital well-being (e.g., satisfaction) (e.g., Cutrona, Russell, Abraham, Gardner, Melby, Bryant, & Conger, 2003; Roberts, 2000). However, there has been a long-standing debate surrounding the implications of marital hostility for spouses' marital outcomes. Whereas some studies have indicated that hostile exchanges between partners were negatively associated with marital well-being (e.g., Gottman, 1994; Lavner, & Bradbury, 2010), several other studies have suggested that partners who engaged in more hostile behaviors (e.g., anger, criticism) tended to become happier over time as compared to those who avoided such behaviors (e.g., Cohan & Bradbury, 1997; Gottman & Krokoff, 1989).

To reconcile such apparently contradictory findings, the importance of approaching the association between marital hostility and marital well-being from a contextual perspective has been highlighted (Bradbury & Fincham, 1991; McNulty

& Fincham, 2012). Accordingly, the effects of interpersonal behaviors in intimate unions on relationship outcomes may not depend on the *content* of those behaviors alone but instead determined by the interaction between the *content* of those behaviors and the *context* in which those behaviors are displayed. However, it is only in the recent years that marital communication research informed by this perspective has been emerging (McNulty & Russell, 2010; Overall, Fletcher, Simpson, & Sibley, 2009). Furthermore, as McNulty (2016) stated, the *complexity* inherent within the effects of marital negativity on relationship outcomes cannot be fully understood without considering the *contextualizing* effects of *various levels* of factors (e.g., intrapersonal traits, relationship features, and external environment factors). Few studies, however, have simultaneously examined different levels of contextualizing factors when investigating the association between marital hostility and spouses' relationship well-being.

In addition, some methodological limitations in prior research are also noteworthy. First, studies suggesting that marital hostility may have benefits for relationship well-being had used samples drawn primarily from couples in established or distressed relationships (e.g., Gottman & Krokoff, 1989; Heavey et al., 1993). A limited body of research has replicated such findings among couples in the early years of marriage (Cohan & Bradbury, 1997; McNulty & Russell, 2010). However, the homogeneous nature of marital duration and the generally high levels of conjugal well-being during the first few years of marriage may help researchers detect effects that otherwise might have been masked by differences associated with relationship length, and also allow researchers to identify factors predictive of changes in marital well-being.

Second, the existing studies on marital communication processes and their implication for marital well-being have been conducted primarily with samples of Western couples, whereas research based on couples in non-Western cultural contexts remains sparse (e.g., Williamson, Ju, Bradbury, Karney, Fang, & Liu, 2012). Lastly, the interdependent nature of couple relationships has been long emphasized, but only a handful of studies have taken dyadic approaches when examining the association between marital hostility and conjugal well-being (e.g., Overall et al., 2009). To achieve a refined understanding of the effects of spouses' hostile exchanges on relationship outcomes, efforts guided by the dyadic approaches are pressing.

The current study sought to address the aforementioned limitations by (a) linking the observed hostility in couple interactions to both the concurrent levels of and the subsequent changes in spouses' self-reports of marital satisfaction in a sample of Chinese couples who were in their early years of marriage, and (b) examining how *factors of different levels*, including intrapersonal traits (i.e., self-esteem), couple relationship characteristics (i.e., commitment), and external environment factors (i.e., stressful life events), may *contextualize* (i.e., moderate) such associations. Moreover, the present study drew on *the actor-partner interdependence moderation model* (APIMoM, Garcia, Kenny, & Ledermann, 2015) when analyzing the data to (a) account for the *actor* and the *partner* effects of marital hostility on relationship satisfaction and also (b) test both the *within-partner* contextualizing effects (i.e., the moderating effects of spouses' own factors on the association between their own marital hostility and their own or their partners' marital satisfaction) and the *crossover-partner* contextualizing effects (i.e., the moderating

effects of partner's factors on the association spouses' marital hostility and spouses' own or their partners' marital satisfaction) (see Figure 3 for the illustrative model). As such, the current study was guided by a “*dyadic, multilevel, and contextual*” perspective when approaching the association between marital hostility and marital well-being.

Theoretical Foundation

The theoretical grounding for this study was based in an integration of several prominent theoretical perspectives. The vulnerability-stress-adaptation (VSA) model of marriage proposed by Karney and Bradbury (1995) posits that the variability in marital well-being is accounted for by the interplay among spouses' enduring vulnerabilities, stressful events and circumstances, and couple adaptive processes, and that the effects of any element in this framework cannot be accurately understood without considering the effects of the others. In *general*, inspired by this proposition, I sought to investigate how individual characteristics, couple adaptive processes, relationship features, and external contextual factors may jointly affect marital satisfaction.

However, in terms of the *specific* ways in which the selected variables may operate in conjunction with each other to affect marital satisfaction, the current study was informed by several other theoretical frameworks other than the VSA model. The VSA model is essentially a process model involving a series of mediating pathways, but it has been limited by overlooking that any of the elements in this framework can condition the implications of the others for relationship outcomes. Given that a substantial body of research guided by the VSA model as a process framework has been conducted since 1995, efforts approaching the associations between various types of factors and marital

well-being from different perspectives are quite limited but imperative as they may generate unique insights for marital research.

Several theoretical models of close relationships informed by contextual or risk and resilience perspectives have been proposed, which have well complemented or extended the VSA model by highlighting the moderating mechanisms explaining variation in marital well-being (e.g., Bradbury & Fincham, 1991; McNulty, 2016; McNulty & Fincham, 2012; Patterson, 2002; Walsh, 1998; Zayas, Shoda, & Ayduk, 2002). Some central propositions of these models are particularly relevant for the present study. First, the effects of interpersonal processes in relationships on relationship outcomes may depend on the *context* in which they operate (Bradbury & Fincham, 1991; McNulty, 2016; McNulty & Fincham, 2012; Overall & McNulty, 2016).

Second, factors that may contextualize the associations between interpersonal processes and relationship well-being can derive from *different levels of influences* (e.g., intrapersonal characteristics, relationship features, and external factors) (McNulty, 2016). Lastly, dyadic, close relationship should be conceptualized as a “*interlocking*” system of both partners’ characteristics and behaviors, and one partner’s characteristics and behaviors can serve as situational contexts *not only* for his/her *own* relationship well-being, *but also* for his/her *partner’s* relationship well-being (Zayas et al., 2002).

Guided by these key propositions, the current study represented one of the *very first* steps in approaching the associations between marital hostility and marital satisfaction from a *dyadic, multilevel, and contextual* perspective. The accumulation of examinations adopting this perspective will provide a *more integrative, sophisticated and*

comprehensive portrayal of the *complexity* inherent within the developmental course of marital well-being. As such, the unique theoretical insights yielded from this line of research will serve to advance and expand the scientific knowledge base with respect to couple relationship well-being.

Empirical Background

Marital hostility and marital satisfaction: The main association. Based on several comprehensive reviews of marital communication research (e.g., Driver, Tabares, Shapiro, & Gottman, 2012; Fincham, 2004; Gottman & Notarius, 2000), a vast body of research has demonstrated that hostile exchanges between partners (e.g., criticism, contempt, anger) are negatively associated with various marital outcomes, concurrently and prospectively. There are several possible explanations for such associations. Hostile exchanges may evoke spouses' more destructive reactions, contribute to the formation of a "toxic" relationship atmosphere, dispose spouses to physiological and psychological problems, and damage spouses' self-concept (e.g., being a "bad" person and spouse). All these may deplete resources that spouses otherwise may devote to pro-relationship activities and undermine the effectiveness of problem resolution. Ultimately, relationship well-being could be eroded.

However, some longitudinal studies have provided seemingly counterintuitive results: although marital hostility is negatively associated relationship outcomes concurrently, couples may sometimes benefit from their earlier hostile exchanges (e.g., the earlier hostility can be predictive of the later increases in satisfaction) (Cohan & Bradbury, 1997; Gottman & Krokoff, 1989; Heavey et al., 1993). Such findings spark a

continuing controversy on the relational implications of marital hostility, and catalyzed an emerging body of research aimed at clarifying why such effects may occur (Baker, McNulty, & Overall, 2014; Overall & McNulty, 2016).

According to these studies, as compared to positive communication behaviors (e.g., warmth, affection, validation), hostility may be more effective in: (a) helping spouses become acutely aware of the severity of the problem (as it is causing distress); (b) stimulating spouses' motivation to resolve the problem (so as to ameliorate or remove distress); and (c) regulating spouses' behaviors to produce desired changes. In addition, hostility also may reflect spouses' active engagement in the problem solving, direct and serious confrontation of problems, commitment to the partner and the relationship, as well as important emotional self-disclosures.

To reconcile the aforementioned mixed findings, approaching the association between marital hostility and conjugal well-being from a contextual perspective seems to be imperative (Baker et al., 2014; Bradbury & Fincham, 1991; McNulty & Fincham, 2012; Overall & McNulty, 2016). Some initial efforts have already been made, but the contextualizing factors examined in these studies are primarily limited to the properties or characteristics of the hostile behaviors per se (e.g., whether the interactive behavior is explicit and overt versus passive and covert regarding the problem) or the problems per se (e.g., whether the problem is severe or minor, whether the problem is resolvable or not). Simply put, these studies (e.g., McNulty & Russell, 2010; Overall et al., 2009; Overall & McNulty, 2016) found that: (a) explicit and overt rather than indirect negative communication behaviors may benefit close relationships over time when severe

problems need to be changed and can be changed; and (b) one mechanism through which these behaviors affect relationship outcomes could be the extent to which they are successful at producing desired changes.

Based on prior research, in the current study it seems necessary to investigate both the concurrent and the longitudinal associations between marital hostility and marital satisfaction. And it also may be warranted to expect that the concurrent association between marital hostility and marital satisfaction might be different from the association between marital hostility and the subsequent changes in marital satisfaction. However, continuing to document the generic concurrent and longitudinal associations between marital hostility and marital satisfaction (i.e., the main effect models) is reaching a point of diminished returns; rather, the importance of identifying critical factors that may play crucial roles in contextualizing such associations have been increasingly highlighted.

Intrapersonal traits as contextualizing factors: Self-esteem. On average, low self-esteem is among spouses' intrapersonal traits that can contribute to less desirable relationship outcomes (Erol & Orth, 2014; Murray, Holmes, & Griffin, 2000). During marital interactions, partners with lower self-esteem engage in more relationship-defeating perceptions and behaviors, whereas partners with higher self-esteem demonstrate more relationship-promoting perceptions and behaviors (Murray et al., 2000; Murray, Rose, Bellavia, Holmes, & Kusche, 2002). The explanation for this distinction may lie in the ways that low self-esteem and high self-esteem partners respond to their experiences of dependency, closeness, and vulnerability in romantic unions (Murray, Holmes, MacDonald, & Ellsworth, 1998).

Specifically, as compared to their high self-esteem counterparts, low self-esteem spouses are more sensitive to rejection in close relationships and are more likely to underestimate how positively their partners see them, how much their partners love them, and how satisfied and committed their partners are in the relationship. Consequently, when conflicts arise, low self-esteem spouses often read too much into the problems, project their self-doubts onto their partners, and thus become anxious about their partners' rejection and the fate of the relationship. Once these processes are set into motion, low self-esteem spouses are often motivated to prioritize self-protection goals over relationship connection goals, and respond to the prospect of being rejected and abandoned by derogating their partners and/or distancing themselves from partners to reduce their dependency on and closeness with the threatened resources.

In contrast, in the face of conflicts, spouses with high self-esteem may be less sensitive to their partners' rejection and be less likely to turn occasional issues into serious doubts about their partners and relationships, as they have trust and confidence in and can more accurately perceive their partners' satisfaction and commitment in the relationship. Thus, high self-esteem spouses are less likely to deal with conflicts by distancing themselves from partners to prevent possible threats. Instead, they may affirm their partners and relationships in the face of threats and even engage in relationship-enhancing behaviors to buffer the costs of conflicts on relationship well-being.

Relationship features as contextualizing factors: Commitment. Compared to spouses with lower levels of commitment, spouses with higher levels of commitment tend to focus more on seeking couple joint-interests and long-term relationship goals than

on immediate self-interests in conflictual situations (Kelley & Thibaut, 1978). As Stanley et al. (2010) stated, “Combining the intention to be together, to have a future, and to share an identity as a couple, the state of being committed can be thought of most simply as having a sense of ‘us with a future.’” (p. 244). As such, commitment has long been proved to be a beneficial factor in relationships that can promote relationship-enhancing processes and protect relationships from various risks.

First, numerous studies have indicated that commitment is associated with spouses’ positive perceptions of their partners and relationships (e.g., perceive ones’ own relationships as superior to the others’) and positive interpretations of their own and partners’ behaviors (e.g., benign attributions) (e.g., Fincham, Bradbury, & Scott, 1990). Second, spouses with higher levels of commitment are more likely to engage in pro-relationship behaviors (e.g., forgiveness, accommodation) than are partners with lower levels of commitment (Stanley, Rhoades, & Whitton, 2010). Lastly, commitment also can play a protective role in relationships against different types of risks (e.g., betrayal) (e.g., Finkel, Rusbult, Kumashiro, & Hannon, 2002).

Consistent with the aforementioned beneficial roles of commitment in marriage, during marital interactions, as compared to their low-committed counterparts, spouses with higher levels of commitment: (a) tend to engage in more positive communication behaviors; (b) are more likely to respond to partners’ negative behaviors in constructive, accommodative ways; and (c) tend to believe that relationship problems can be solved and should be solved and also hold more optimistic attitudes about the possibility of salvaging a troubled union (Fincham, 2003).

External environment as contextualizing factors: Life event stress. No couple exists as an isolated island; rather, couples are embedded in multiple nested contexts that may constrain or facilitate relationship development. Thus, it seems impossible to fully understand marital well-being without reference to the environment outside the relationship to which couples must adapt. Among various external contextual factors, the critical roles of life event stress in shaping marital outcomes have been long emphasized in both theoretical and empirical research (Karney & Neff, 2013). Numerous studies have demonstrated that experiences of life event stress may influence marital well-being primarily by: (a) draining resources that partners may otherwise devote to relationship maintenance and enhancement; (b) rendering partners less able to interact with each other effectively; (c) eroding positive exchanges between partners; and (d) impairing spouses' psychological and physiological health. In contrast, less is known about how external stressors may interact with intradyadic dynamics or stressors to affect marital well-being (Cohan & Bradbury, 1997; Proulx, Buehler, & Helms, 2009).

As noted earlier, when suffering from a greater number of stressful life events, spouses may not only experience more intense hostility in marriage but also tend to have fewer resources available for coping with such hostile exchanges between partners; moreover, the life event stressors also may proliferate to create some secondary stressors (e.g., physiological problems), which in turn may further drain spouses' resources and exacerbate the circumstances. Thus, it is possible that spouses situated in an environment characterized by a greater number of stressful life events may be particularly vulnerable to the negative impacts of marital hostility in marriage.

Marital hostility and marital satisfaction: Avoidance. Disagreements and conflicts between partners are inevitable in everyday marital lives. Whether problems incurring conflicts can be effectively addressed often play important roles in shaping relationship outcomes. Accumulating evidence suggests that directly confronting problems and actively engaging in conflicts can be helpful in resolving problems and maintaining relationship satisfaction, even though such processes often entail anger, criticism, demand, and other types of hostile behaviors (e.g., Gottman & Krokoff, 1989; McNulty & Russell, 2010; Overall et al., 2009; Overall & McNulty, 2016). In contrast, handling marital conflicts or problems through avoidant tactics (e.g., resisting, rejecting, minimizing, sidetracking, withdrawing, stonewalling, and ignoring the issues) likely hinders successful problem resolution. On one hand, avoidance may prevent partners from becoming acutely aware of the severity of the problem and thus from regulating their behaviors to produce desired changes; on the other hand, avoidance may somewhat reflect emotional detachment and psychological abandonment, which can often greatly hurt the relationship (Eldridge & Christensen, 2002; Gottman, 1993).

What if hostility and avoidance operate in conjunction with each other in problem resolutions? Prior research has suggested that the avoidance level may condition the effects of hostility on relationship outcomes (e.g., Roberts, 2000; Schumacher, Homish, Leonard, Quigley, & Kearns-Bodkin, 2008). If hostile exchanges between partners are paired with higher levels of avoidance when dealing with marital problems, the hostility may more reflect merely a burst of inflamed negative emotions than active (yet hostile)

engagements in confronting and discussing the problems, which may be particularly ineffective for problem resolution and thus especially harmful for relationship well-being.

Method

Study Design and Sample Characteristics

The present study is based on data from a larger project named Chinese Newlyweds Longitudinal Study (CNLS). At Time 1, sampling was undertaken to identify couples who were within 3 years of their wedding, in their first marriage, without children, and living together in Beijing. Couples who met the above eligibility criteria were recruited by research assistants. They were trained to contact acquaintances to locate eligible couples and post announcements on websites or in communities to call for eligible couples. Ultimately, 268 couples participated in the study. Of these couples, 106 couples agreed to participate in both the self-report survey and the observation parts of the study, which is the sample used in the current study.

At Time 1, the 106 couples had been married for a mean of 15.11 months ($SD = 11.34$). Husbands and wives were on average 29.62 ($SD = 3.37$) and 28.00 years old ($SD = 2.26$), respectively. The modal level of education for both husbands and wives was a graduate degree. The median levels of monthly income for husbands and wives were 8,000 RMB ($SD = 10,948.65$, around US \$1,153.60) and 6,000 RMB ($SD = 4,278.71$, around US \$865.20), respectively. Based on the available census data at the year of data collection (Beijing Municipal Bureau of Statistics, 2011; National Bureau of Statistics of the People's Republic of China, 2011), the average annual wage of the employed people living in Beijing was 65,683 RMB (around 5,473 RMB or US \$789.21 monthly) and

almost 35% of the employed people in Beijing had received education of college-level or above. Thus, participants in the current study had higher levels of income and education as compared to the broader population in Beijing at the year of data collection.

To test potential selection effects, independent samples *t* tests (i.e., partners participating in both the survey and the observational parts of the study vs. partners participating in only the survey part of the study) were conducted on the Time 1 demographic variables (i.e., age, income, marital duration) and also on the Time 1 study variable of interest in the current study that were available for both groups (i.e., self-esteem, commitment, the frequency of stressful life events, and marital satisfaction). Among 13 pairs of comparisons, five significant differences emerged. Husbands participating in both the survey and the observational parts of the study had higher levels of income (*Mean* = 9907.30, *SD* = 7289.52 vs. *Mean* = 7887.32, *SD* = 5119.78; *t* = 2.64, *p* = .009, Cohen's *d* = .32), experienced more stressful life events (*Mean* = 1.47, *SD* = .24 vs. *Mean* = 1.39, *SD* = .20; *t* = 2.94, *p* = .004, Cohen's *d* = .36), but had lower levels of commitment (*Mean* = 4.11, *SD* = .42 vs. *Mean* = 4.27, *SD* = .43; *t* = -3.01, *p* = .003, Cohen's *d* = .38) than did those participating in only the survey part of the study.

Wives participating in both the survey and the observational parts of the study reported lower levels of commitment (*Mean* = 4.04, *SD* = .49 vs. *Mean* = 4.17, *SD* = .40; *t* = -2.30, *p* = .023, Cohen's *d* = .29) and satisfaction (*Mean* = 6.06, *SD* = 1.18 vs. *Mean* = 6.40, *SD* = 1.02; *t* = -2.43, *p* = .016, Cohen's *d* = .31) than did those participating in only the survey part of the study. Despite these significant differences, it should be noted that the magnitude of these differences was all between "small" and "medium" in terms of

their effect sizes, based on Cohen's (1988) criteria with respect to Cohen's *d*. In addition, the modal level of education for both husbands and wives participating in only the survey part of the study was a "bachelor's" degree, whereas as noted already, the modal level of education for both husbands and wives participating in both the survey and the observational parts of the study was a "graduate" degree.

One year after the Time 1 observation assessment, 87 of the 106 couples participated in the Time 2 self-report survey assessment, resulting in an 82.08% retention rate. Two years after the Time 1 assessment, 79 of the 106 couples participated in the Time 3 self-report survey assessment, resulting in a 74.53% retention rate. To test attrition effects, independent samples *t* tests (i.e., attrited vs. retained) were conducted on all Time 1 variables of interest in the current study (i.e., hostility, satisfaction, self-esteem, commitment, stressful life events, and avoidance). Among 18 pairs of comparisons, three significant differences emerged. Specifically, as compared to the retained husbands, the attrited husbands reported lower levels of commitment (*Mean* = 3.92, *SD* = .38 vs. *Mean* = 4.18, *SD* = .41; $t = -2.86$, $p = .005$, Cohen's $d = .66$), experienced more stressful life events (*Mean* = 1.56, *SD* = .24 vs. *Mean* = 1.44, *SD* = .23; $t = 2.35$, $p = .021$, Cohen's $d = .51$); and the attrited wives demonstrated higher levels of hostility than the retained wives when discussing the problem solving topics initiated by themselves (*Mean* = 3.37, *SD* = 2.00, *Mean* = 2.42, *SD* = 1.71, $t = 2.37$, $p = .02$, Cohen's $d = .48$). According to Cohen's (1988) criteria with respect to Cohen's *d*, the magnitude of these differences was "medium." In addition, attrition analyses using multivariate analysis of variance were also conducted using all Time 1 variables of interest in the current study. The three

significant differences between the retained and attrited partners based on the multivariate *F*s were consistent with those found based on the independent samples *t* tests.

Data Collection Procedures

Both husbands and wives were invited to the university lab to participate in this study. For couples who could not come to the lab (because of either their busy schedules or living far away from the university lab), research assistants collected the data by means of a home visit ($n = 2$). First, the study was described in general terms by research assistants and then the signed informed consent form was obtained from each participating spouse. Then, husbands and wives were asked to separately complete a series of self-report measures regarding their demographic, individual, relational, and familial characteristics. After a short break, partners who also agreed to participate in the observational study were reunited for four 10-minute videotaped discussions, including two problem solving interactions and two social support interactions.

For problem solving interactions, husbands and wives were asked to separately identify a topic of disagreement within marriage. They were asked to try to use this discussion as an opportunity to work towards a solution to the identified issues, even though they cannot solve the problem completely during this interaction. After finalizing the topics, the couple was asked to discuss one topic identified by one spouse for 10 minutes, followed by a discussion of the topic identified by the other spouse for another 10 minutes after a short break. To start the conversation, one randomly chosen spouse was asked to “briefly say what you think about the issue” and the other partner was then told to “say what you think about the issue”. Then, they could discuss the issue freely.

For social support interactions, husbands and wives were also asked to separately identify something about themselves that they want to change/improve. Spouses were instructed to avoid selecting any topic that was a source of tension or conflicts in their marriage. After finalizing the discussed topics, the couple was asked to discuss one topic identified by one spouse for 10 minutes, followed by a discussion of the topic identified by the other spouse for another 10 minutes after a short break. To start the conversation, one randomly chosen spouse was asked to “describe what it is that you would like to change about yourself and how this makes you feel” and the other partner was told to “respond however you want to so that you are involved in the discussion”. Then, they could discuss the issue freely.

Although the order of the initiator within both problem-solving and social support interactions was randomly decided by flipping a coin, all couples were asked to conduct problem-solving interactions first and then social support interactions. I employed this design for two primary reasons: (a) this procedure is consistent with previous studies examining couple interactive behaviors in both conflictual and nonconflictual contexts (e.g., Pasch & Bradbury, 1998; Sullivan, Pasch, Johnson, & Bradbury, 2010); and (b) from a research ethics perspective, ending the observation tasks with social support interactions may be more likely to make participants go back to their lives in a positive rather than a negative mood. However, I acknowledge that complications may arise from carryover effects in the current design and counterbalancing different types of interactions may be the optimal choice (Pollatsek & Well, 1995), which could be a direction for future efforts.

At the very end, couples were debriefed and paid 150 RMB (around US \$21.63) if they participated in both the questionnaire part and the observation part of the larger study, and 100 RMB (around US \$15) if they participated only in the questionnaire part of the study. In addition, for both groups of couples, partners were also given a small gift (e.g., a photo frame).

Measures

The protocols for couple interactions, the coding manuals for interactive behaviors, and the self-report measures used in the present study were all originally developed for American couples. A team of graduate students majoring in human development and family studies who are fluent in both Chinese and English first translated these materials into Mandarin, and then another team of bilingual graduate students back-translated them into English. The investigators also worked with the translators to revise these materials as needed until it was evident that the Chinese items had meanings equivalent to those in the English version. All Mandarin version materials were also sent out to professors with expertise in Chinese marriage and family studies for suggestions. Such processes were repeated until no new revision suggestions were made.

Observed marital hostility during couple interactions. Videotapes were coded by 8 coders using the Iowa Family Interaction Rating Scales (IFIRS; Melby & Conger, 2001). Coders participated in 10 hours of training per week for 3 months and were required to pass both written and coding tests with a minimum 75% accuracy before coding the formal tapes. The criterion scores used to judge coder accuracy were determined by an experienced IFIRS coder who had been systematically trained and

evaluated in the UCLA Marriage Lab led by Drs. Thomas Bradbury and Benjamin Karney. In addition to the 10 hours of training per week, coders also were required to participate in a 2-hour-long training meeting weekly in which a series of structured activities (e.g., discussing sample videos) were implemented.

When coding the videos, qualified coders were instructed to randomly select the partner to be observed first and turned to the other partner after finishing coding behaviors for the first partner. Coders were required to view each of the interaction tasks 3 or 4 times and take notes at the same time about the interactive behaviors of spouses throughout the interaction, considering the frequency, intensity, proportion of behaviors, affect, and contextual cues. Based on their notes, coders would assign a single score for each spouse for each IFIRS behavioral code. Such procedures and strategies for viewing videos were consistent to those recommended in the IFIRS manual (Melby et al., 1998).

The scores for the hostility code were used in the present study. According to the IFIRS manual (Melby et al., 1998), the hostility scale measures the degree to which the focal person displays hostile, angry, critical, disapproving and/or rejecting behaviors toward another interactor's behaviors, appearance, or state. Specifically, hostile behaviors include nonverbal communication (e.g., contemptuous facial expressions), emotional expression (e.g., irritable, sarcastic, or curt tones of voice), and the negative content of the statements themselves (e.g., denigrating remarks). In particular, to be hostile, behaviors must include some element of negative affect such as derogation, disapproval, blame, and/or ridicule. Hostility was rated on a 9-point scale ranging from 1 (*Not at all characteristic*) to 9 (*Mainly characteristic*). Spouses would be given a score of 1 if they

displayed no hostile behavior during interactions, whereas they would receive a score of 9 if they frequently displayed those behaviors.

Considering the possible cross-cultural relevance issue of the behavioral coding scales in IFIRS, a pilot study was conducted in a sample of 41 Chinese couples (for detailed demographic information of these couples, see a cross-cultural study by Williamson et al. 2012). When coding the hostile behaviors displayed by spouses in these couples, we did not find any specific hostile behaviors that were particularly unique to Chinese culture or were not covered by the original IFIRS hostility coding scale. Furthermore, the average single-item Intraclass Correlation Coefficient (*ICC*) for the hostility scale across different interactive contexts in this sample was .64, which was comparable to those in Western samples (e.g., Williamson, Bradbury, Trail, & Karney, 2011). The details about revising the IFIRS behavioral scales among Chinese couples can be found in an unpublished dissertation by Ju (2013).

Given the 2 topic natures (i.e., problem solving vs. social support providing) by 2 topic initiators (i.e., oneself vs. partner) design, each spouse would be given four hostility scores: a hostility score in the problem solving context focused on topics identified by themselves, a hostility score in the problem solving context focused on topics identified by their partners, a hostility score in the social support context focused on topics identified by themselves, and a hostility score in the social support context focused on topics identified by their partners.

To assess reliability, around 25% of the videos ($n = 24$) were randomly selected to be coded by a second coder. Discrepancies between coders were resolved by both coders

working together to finalize the scores used in analyses. Interrater reliability was assessed by calculating *ICCs*. For husbands, the *ICCs* of hostility scale across four interactive contexts were .81 in the social support context initiated by husbands (HSS), .80 in the social support context initiated by wives (WSS), .91 in the problem solving context initiated by husbands (HPS), and .84 in the problem solving context initiated by wives (WPS). For wives, the *ICCs* of hostility scale across four interactive contexts were .88 in HSS, .84 in WSS, .83 in HPS, and .88 in WPS.

It should be noted that in the current study assessing hostility with a multi-context design served *solely* as a strategy to acquire a more representative sample of hostile behaviors and thus more adequately and accurately assess the construct of marital hostility in the “real” marital lives. I acknowledged that hostility in various contexts may have different interpersonal meanings and functions (Roberts, 2000; Roberts & Greenberg, 2002), and thus may be differentially associated with marital outcomes. However, I did not examine marital hostility displayed in different contexts and their respective unique effects on marital well-being in the current study primarily because: (a) investigating this issue would obfuscate the central focus of the current study and make the current study quite unwieldy; and (b) several prior studies have already touched this issue (e.g., Cao, Fang, Fine, Ju, Lan, & Liu, 2015; Heyman, Hunt-Martorano, Malik, & Slep, 2009; Roberts, 2000; Sullivan et al., 2010).

Self-Esteem. The 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1979) was used to assess self-esteem. This measure requires spouses to report agreement with statements such as “On the whole, I am satisfied with myself.” On a 4-point Likert scale

ranging from 1 (*Strongly agree*) to 4 (*Strongly disagree*). Five items were reverse coded, and then mean scores were calculated and used in analyses. Higher scores indicated higher levels of self-esteem. The Cronbach's α s of this scale for husbands and wives were .86 and .85, respectively.

Commitment. The 15-item unidimensional Commitment to Spouse Scale, a subscale of the Dimensions of Commitment Inventory (DCI; Adams & Jones, 1997), was used. On a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), spouses were asked to indicate their agreement with a series of statements. Nine of the 15 items were positive (e.g., "I want to grow old with my spouse.") and 6 of the 15 items were negative (e.g., "My future plans do not include my spouse."). After recoding the appropriate items, mean scores were calculated and used in analyses. Higher scores indicated higher levels of commitment. The Cronbach's α s of this scale for husbands and wives were .83 and .87, respectively in the current study.

Avoidant tendency in marital problem resolutions. Four items from the Conflicts and Problem-Solving Scales (CPS; Kerig, 1996) were used to assess spouses' avoidance in marital problem resolution processes. On a 4-point Likert scale ranging from 1 (*Never*) to 4 (*Often*), spouses were asked to report how often they employed each of the four strategies when dealing with marital conflicts: "Try to ignore problem' avoid talking about it", "Sulk' refuse to talk' give the silent treatment", "Clam up' hold in feelings", and "Express thoughts and feelings openly". After reverse coding the scores on the fourth item, mean scores were calculated and used in analyses. Higher scores

indicated higher levels of avoidance in marital conflict resolution processes. The Cronbach's α s of this scale for husbands and wives were .83 and .87, respectively.

Stressful life events. A 30-item stressful life event experience scale was used to assess the presence of stressful life events. This measure was adopted from the Life Experiences Survey (LES; Sarason, Johnson, & Siegel, 1978), the Relationship Issues Survey (RIS; Epstein & Werlinich, 1999), and the Life Event Scale (LES; Yang & Zhang, 1999). Each of the first 29 items describes a specific stressful event that may happen in people's lives (e.g., death of family member, losing job, major personal illness). The last item is an open-ended question and asks partner to fill it with any stressful life event that is not mentioned in the prior items. For each event, partners were asked to indicate how often this event had occurred in the last 12 months on a 4-point Likert scale ranging from 1 (*Never*) to 4 (*Very Often*). Mean scores were calculated and used in analyses. Higher scores indicated more stressful life events. The Cronbach's α s of this scale for husbands and wives were .88 and .84, respectively in the current study.

Marital satisfaction. The 6-item unidimensional Quality Marriage Index (QMI; Norton, 1983) was used to assess marital satisfaction across the three waves of data collection. The first 5 items asked spouses to indicate their agreement with statements such as "My relationship with my partner makes me happy." on a 7-point Likert scale ranging from 1 (*Very strong disagreement*) to 7 (*Very strong agreement*). The last item asked spouses to indicate how happy they are in their marriage when all things were considered on a 10-point scale from 1 (*Very unhappy*) to 10 (*Perfectly happy*). The score for the last item was re-scaled to a 7-point scale. The mean score was calculated for

marital satisfaction at each wave. The Cronbach's α s of this scale for husbands and wives were .95 and .96 at Time 1, .96 and .97 at Time 2, and .94 and .97 at Time 3, respectively.

The mean score of marital satisfaction at the first wave was used as the outcome variable in the concurrent model and as the baseline control variable in the longitudinal model. An overall long-term marital satisfaction score was calculated by averaging the satisfaction score at the second wave and the satisfaction score at the third wave to yield a more reliable measure that reflects couple relationship satisfaction at the later time points, which was used as the outcome variable in the longitudinal model. Higher scores indicated higher levels of marital satisfaction.

Analytic Approach and Procedures

The actor-partner interdependence model (APIM; Kenny et al., 2006) was utilized to account for the possible interdependence in couple dyadic data. All hypotheses were tested using Structural Equation Modeling (SEM) via AMOS 20.0. The adequacy of models was evaluated using the Chi-Square statistic (χ^2), the comparative fit index (*CFI*), and the root-mean-square error of approximation (*RMSEA*). Models with nonsignificant χ^2 values, *CFI* values $> .90$, and *RMSEA* values $< .08$ were considered to have an acceptable fit. However, when the sample size is relatively large, a significant χ^2 should be expected for most models (Byrne, 2001). Shared informant and shared method bias are minimized, when possible, by assessing contiguous constructs with different informants or methods. Missing values in the present study were primarily due to unavailability of data from a specific wave, which were addressed by using the full information maximum likelihood estimation method (*FIML*) (Acock, 2005).

Both the concurrent and longitudinal associations between marital hostility and marital satisfaction were examined. Examinations of both the concurrent and the longitudinal associations are important when the focal effects reflect an ongoing process that may be related to both and/or have different impacts on the immediate and the long-term relational well-being. Furthermore, as noted already, there indeed has been a long-standing debate surrounding the concurrent and the longitudinal associations between negativity in marital interactions and conjugal outcomes. To examine the association between marital hostility and the changes in marital satisfaction, the baseline marital satisfaction was statistically controlled in the longitudinal model, which is a strategy widely utilized in longitudinal marital research (e.g., Proulx et al., 2009). One of the important advantages of using this design is increasing internal validity by addressing temporal precedence. In both the concurrent main effect model and the longitudinal main effect model, marital hostility is included as a latent variable with the four hostility scores in specific interactive contexts as indicators.

When testing the moderating effects of various contextualizing factors (i.e., self-esteem, commitment, avoidance, and life event stress) on the association between marital hostility and marital satisfaction, I follow the recommendations by Garcia et al., (2015) on the actor-partner interdependence moderation model (APIMoM). Considering the modest sample size in the current study and the low power issues with regard to the moderating analyses (e.g., Aguinis, 1995; Hedges & Pigott, 2004; Jaccard & Wan, 1995; Judd, McClelland, & Culhane, 1995; McClelland & Judd, 1993), different moderators will be tested separately rather than simultaneously (i.e., only one moderator at a time).

Moderating effects for a particular contextualizing factor were tested by adding product terms as predictors into the main effects model. A marital hostility summary variable was created by averaging the four hostility scores in specific interactive contexts. After centering, the hostility summary score was multiplied by the contextualizing factor score to create the product terms. Parameter estimates were examined for pathways from product terms to marital satisfaction. Significant parameter estimates for these pathways suggest moderating effects. I first tested the moderating roles of spouses' own contextualizing factor scores on the actor and the partner effects of their marital hostility on marital satisfaction, and then tested the moderating roles of spouses' partner's contextualizing factor scores on the actor and partner effects of their marital hostility on marital satisfaction.

To illustrate the significant interactive effects, follow-up analyses were conducted according to the procedures forwarded by Preacher, Curran, and Bauer (2006). The higher, average, and lower levels of contextualizing factor groups are defined as *1SD* above the mean, the mean, and *1SD* below the mean of contextualizing factor scores at wave one, respectively. The higher and lower levels of hostility groups are defined as *1SD* above the mean and *1SD* below the mean of marital hostility scores at wave one, respectively. In addition, given that concerns often have been raised in the statistical literature about the relatively low power of tests of moderator effects (e.g., Aguinis, 1995; Hedges & Pigott, 2004; Jaccard & Wan, 1995; McClelland & Judd, 1993), and one commonly used strategy to compensate for such low power is increasing the Type I error rate above conventional levels (i.e., setting $\alpha = .10$ rather than $.05$). As such, in the

current study, I used $\alpha = .10$ as a cutoff value when deciding whether or not to conduct follow-up analyses to probe the nature of a given interaction effect, but I tended to be cautious in drawing conclusions about those moderating effects with $.05 < \alpha s < .10$.

Results

Bivariate correlations and descriptive statistics for the study variables and the reliabilities (*ICCs* or Cronbach's αs) for the utilized measures are shown in Table 3. All the measures had adequate reliabilities in the present study.

Marital Hostility and Satisfaction: Concurrent and Longitudinal Main Associations

The first central focus of the present study was to examine the effects of hostility that spouses demonstrated in interactions on both the concurrent levels of and the subsequent changes in their own and partners' marital satisfaction during the first few years of marriage. As depicted in Figure 4, there was an adequate fit to the data for both the concurrent ($\chi^2 = 27.530$, $df = 27$, $p = .436$, $CFI = .998$, and $RMSEA = .014$) and the longitudinal model ($\chi^2 = 44.086$, $df = 43$, $p = .425$, $CFI = .997$, and $RMSEA = .016$).

In terms of the concurrent associations between hostility and satisfaction at Time 1, husbands' hostility was negatively related to their own and their partner's satisfaction ($b = -.467$, $SE = .171$, $\beta = -.499$, $p < .01$, and $b = -.522$, $SE = .200$, $\beta = -.483$, $p < .01$, respectively). No significant effects were found for wives' hostility. As to the associations between hostility at Time 1 and the subsequent changes in satisfaction, husbands' hostility was significantly associated with increases in their own but not significantly associated with the changes in their partner's marital satisfaction ($b = .400$, $SE = .157$, $\beta = .421$, $p < .05$), whereas wives' hostility was significantly associated with

decreases in both their own and in their partner's marital satisfaction ($b = -.304$, $SE = .122$, $\beta = -.424$, $p < .05$, and $b = -.222$, $SE = .100$, $\beta = -.335$, $p < .05$, respectively).

However, it should be noted that almost all these concurrent and longitudinal main associations were further qualified by the significant interactions between marital hostility and a wide range of contextualizing factors, including the significant association between husbands' hostility and increases in their marital satisfaction. As such, exclusively focusing on the simple main associations, either cross-sectional or longitudinal, could be misleading. Instead, a more refined and accurate understating of such associations should be obtained by looking at a series of moderation analyses as follows. In addition, as this is the first study that particularly investigated the association between observed hostility and spouses' self-reports of marital satisfaction among Chinese young couples using a dyadic approach, I acknowledge that the main effect findings obtained in the current study await future replications, and I tend to interpret such findings very cautiously, especially the significant association between husbands' hostility and increases in their marital satisfaction.

Contextualizing the Association between Marital Hostility and Marital Satisfaction

The second central focus of the present study was to examine the moderating effects of various types of factors on both the concurrent and the longitudinal associations between hostility and spouses' satisfaction. First, I tested the moderating effects of spouses' *own* factors on the associations between their hostility and the concurrent levels of (Models 1-4 in Table 4) and the subsequent changes (Models 5-8 in Table 4) in their own and their partner's satisfaction. Then, I tested the moderating effects of spouses'

partners' factors on the associations between their hostility and the concurrent levels of (Models 1-4 in Table 5) and the subsequent changes (Models 5-8 in Table 5) in their own and their partner's satisfaction. To simplify presentation, I only reported parameter estimates for the significant product terms in each model in Tables 4 and 5. The illustrations of significant interactive effects were depicted in Figures 5 (for the effects of spouses' *own* factors) and 6 (for the effects of spouses' *partners'* factors).

The role of self-esteem. For the models with spouses' *own* Time 1 self-esteem as the moderator, there was an adequate fit to the data for both the concurrent model ($\chi^2 = 7.680$, $df = 6$, $p = .263$, $CFI = .985$, and $RMSEA = .052$; see Model 1 in Table 4) and the longitudinal model ($\chi^2 = 16.751$, $df = 12$, $p = .159$, $CFI = .974$, and $RMSEA = .061$; see Model 5 in Table 4). Two significant interaction pathways were found for the concurrent model: the pathways from the product term between Time 1 husbands' hostility and Time 1 husbands' self-esteem to Time 1 husbands' satisfaction (i.e., T1 H HS \times T1 H SELF \rightarrow T1 H SAT; $b = .550$, $SE = .224$, $\beta = .222$, $p < .05$) and to Time 1 wives' satisfaction (i.e., T1 H HS \times T1 H SELF \rightarrow T1 W SAT; $b = .705$, $SE = .251$, $\beta = .247$, $p < .01$). The illustration of each of the interactive effects is depicted in Panels A and B in Figure 5, respectively. For husbands with average and lower levels of self-esteem at Time 1, their Time 1 hostility was negatively associated with their own (Slope = $-.416$, $p < .01$ and Slope = $-.674$, $p < .001$, respectively) and their partner's Time 1 satisfaction (Slope = $-.414$, $p < .01$ and Slope = $-.745$, $p < .001$, respectively), whereas no significant association was found for husbands with higher levels of Time 1 self-esteem.

Only one significant interaction pathway was found for the longitudinal model: the pathway from the product term between Time 1 husbands' hostility and Time 1 husbands' self-esteem to the changes in their satisfaction (i.e., T1 H HS \times T1 H SELF \rightarrow H SAT Change; $b = .566$, $SE = .203$, $\beta = .240$, $p < .01$). The illustration of this interaction is depicted in Panel J in Figure 5. Specifically, for husbands with average and higher levels of Time 1 self-esteem, their Time 1 hostility was marginally significantly or significantly associated with increases in their own satisfaction (Slope = .204, $p < .10$ and Slope = .470, $p < .01$, respectively), but no significant association was found for husbands with lower levels of Time 1 self-esteem.

For the models with spouses' *partner's* Time 1 self-esteem as the moderator, there was an adequate fit to the data for both the concurrent model ($\chi^2 = 4.218$, $df = 6$, $p = .647$, $CFI = 1.00$, and $RMSEA = .000$; see Model 1 in Table 5) and the longitudinal model ($\chi^2 = 4.730$, $df = 8$, $p = .786$, $CFI = 1.00$, and $RMSEA = .000$; see Model 5 in Table 5). Two significant interaction pathways were found for the concurrent model: the pathways from the product term between Time 1 wives' hostility and Time 1 husbands' self-esteem to Time 1 wives' satisfaction (i.e., T1 W HS \times T1 H SELF \rightarrow T1 W SAT; $b = .539$, $SE = .180$, $\beta = .261$, $p < .01$) and to Time 1 husbands' satisfaction (i.e., T1 W HS \times T1 H SELF \rightarrow T1 H SAT; $b = .560$, $SE = .156$, $\beta = .313$, $p < .001$). The illustration of each of the interactive effects is depicted in Panels A and B in Figure 6, respectively. Specifically, for wives whose husbands were with higher levels of self-esteem at Time 1, their Time 1 hostility was positively associated with their own Time 1 satisfaction (Slope = .359, $p < .05$) and their partner's Time 1 satisfaction (Slope = .305, $p < .05$); for wives

whose husbands were with lower levels of self-esteem at Time 1, their Time 1 hostility was not related to their own Time 1 satisfaction but was negatively associated with husbands' Time 1 satisfaction (Slope = $-.221$, $p < .05$); but no significant association was found for wives whose husbands were with average levels of self-esteem at Time 1.

The role of commitment. For models with spouses' *own* Time 1 commitment as the moderator, there was an adequate fit to the data for both the concurrent model ($\chi^2 = 4.077$, $df = 3$, $p = .253$, $CFI = .995$, and $RMSEA = .058$; see Model 2 in Table 4) and the longitudinal model ($\chi^2 = 10.948$, $df = 8$, $p = .205$, $CFI = .990$, and $RMSEA = .059$; see Model 6 in Table 4). Two significant interaction pathways were found for the concurrent model: the pathways from the product term between husbands' Time 1 hostility and their Time 1 commitment to their own Time 1 satisfaction (i.e., T1 H HS \times T1H COM \rightarrow T1 H SAT; $b = .595$, $SE = .158$, $\beta = .336$, $p < .001$) and to wives' Time 1 satisfaction (i.e., T1 H HS \times T1 H COM \rightarrow T1 W SAT; $b = .546$, $SE = .171$, $\beta = .268$, $p < .01$). The illustration of each of the interactive effects is depicted in Panels C and D in Figure 5, respectively. For husbands with lower levels of commitment at Time 1, their Time 1 hostility was negatively associated with their own Time 1 satisfaction (Slope = $-.328$, $p < .01$) and wives' Time 1 satisfaction (Slope = $-.338$, $p < .05$), but no significant association was found for husbands with average and higher levels of commitment at Time 1. No significant interactive pathway was found for the longitudinal model.

For the models with spouses' *partner's* Time 1 commitment as the moderator, there was an adequate fit to the data for both the concurrent model ($\chi^2 = .992$, $df = 2$, $p = .609$, $CFI = 1.00$, and $RMSEA = .000$; see Model 2 in Table 5) and the longitudinal

model ($\chi^2 = 9.073$, $df = 7$, $p = .243$, $CFI = .993$, and $RMSEA = .053$; see Model 6 in Table 5). Two significant interaction pathways were found for the concurrent model: the pathways from the product term between Time 1 wives' hostility and Time 1 husbands' commitment to Time 1 wives' satisfaction (i.e., $T1\ W\ HS \times T1\ H\ COM \rightarrow T1\ W\ SAT$; $b = .231$, $SE = .130$, $\beta = .147$, $p < .10$) and to Time 1 husbands' satisfaction (i.e., $T1\ W\ HS \times T1\ H\ COM \rightarrow T1\ H\ SAT$; $b = .350$, $SE = .119$, $\beta = .257$, $p < .01$). The illustration of each of the interactive effects is depicted in panels C and D in Figure 6, respectively. Specifically, for wives whose husbands had higher levels of commitment at Time 1, their Time 1 hostility was positively related to their own and husbands' Time 1 satisfaction (Slope = $.236$, $p < .05$ and Slope = $.233$, $p < .05$, respectively); for wives whose husbands had average levels of commitment at Time 1, their Time 1 hostility was positively (yet marginally significantly) associated with their own Time 1 satisfaction (Slope = $.140$, $p < .10$) but not related to husbands' Time 1 satisfaction; and for wives whose husbands had lower levels of commitment at Time 1, no significant association was found.

Only one significant interactive pathway was found for the longitudinal model: the pathway from the product term between Time 1 husbands' hostility and Time 1 wives' commitment to the changes in husbands' satisfaction (i.e., $T1\ H\ HS \times T1\ W\ COM \rightarrow H\ SAT\ Change$; $b = .305$, $SE = .164$, $\beta = .174$, $p < .10$). The illustration of this interaction is depicted in Panel I in Figure 6. For husbands whose wives had average and higher levels of commitment at Time 1, their Time 1 hostility was significantly associated with increases in their satisfaction (Slope = $.329$, $p < .01$ and Slope = $.479$, $p < .01$,

respectively), but no significant association was found for husbands whose wives had lower levels of commitment at Time 1.

The role of avoidance tendency. For models with spouses' *own* Time 1 avoidance as the moderator, there was an adequate fit to the data for both the concurrent model ($\chi^2 = 2.683$, $df = 6$, $p = .847$, $CFI = 1.00$, and $RMSEA = .000$; see Model 3 in Table 4) and the longitudinal model ($\chi^2 = 4.847$, $df = 9$, $p = .847$, $CFI = 1.00$, and $RMSEA = .000$; see Model 7 in Table 4). Two significant interaction pathways were found for the concurrent model: the pathway from the product term between Time 1 husbands' hostility and Time 1 husbands' avoidance to Time 1 wives' satisfaction (i.e., T1 H HS \times T1 H AVO \rightarrow T1 W SAT; $b = -.487$, $SE = .169$, $\beta = -.263$, $p < .01$), and the pathway from the product term between Time 1 wives' hostility and Time 1 wives' avoidance to Time 1 husbands' satisfaction (i.e., T1 W HS \times T1 W AVO \rightarrow T1 H SAT; $b = -.296$, $SE = .104$, $\beta = -.235$, $p < .01$). The illustration of each of the interactive effects is depicted in Panels E and F in Figure 5, respectively. Specifically, for husbands with average and higher levels of avoidance at Time 1, their Time 1 hostility was negatively (either marginally significantly or significantly) associated with wives' Time 1 satisfaction (Slope = $-.274$, $p < .10$ and Slope = $-.597$, $p < .001$, respectively), but no significant association was found for husbands with average or lower levels of avoidance at Time 1. For wives with higher levels of avoidance at Time 1, their Time 1 hostility was negatively (yet marginally significantly) associated with husbands' Time 1 satisfaction (Slope = $-.187$, $p < .10$); for wives with lower levels of avoidance at Time 1, their Time 1 hostility was positively (yet marginally significantly) associated with husbands' Time 1 satisfaction (Slope = $.191$, p

< .10); but no significant association was found for wives with average levels of avoidance at Time 1.

One significant interaction pathway was found for the longitudinal model: the pathway from the product term between Time 1 wives' hostility and their Time 1 avoidance to the changes in their satisfaction (i.e., T1 W HS \times T1 W AVO \rightarrow W SAT Change; $b = -.250$, $SE = .127$, $\beta = -.193$, $p < .05$). The illustration of this interactive effect is depicted in Panel K in Figure 5. For wives with average and higher levels of avoidance at Time 1, their Time 1 hostility was significantly associated with decreases in their satisfaction (Slope = $-.254$, $p < .05$ and Slope = $-.414$, $p < .01$, respectively), whereas for wives with lower levels of avoidance at Time 1, no significant association was found.

For the models with spouses' *partner's* Time 1 avoidance as the moderator, there was an adequate fit to the data for both the concurrent model ($\chi^2 = 2.577$, $df = 6$, $p = .860$, $CFI = 1.00$, and $RMSEA = .000$; see Model 3 in Table 5) and the longitudinal model ($\chi^2 = 12.833$, $df = 12$, $p = .378$, $CFI = .995$, and $RMSEA = .026$; see Model 7 in Table 5). Two significant interaction pathways were found for the concurrent model: the pathway from the product term between Time 1 wives' hostility and Time 1 husbands' avoidance to Time 1 wives' satisfaction (i.e., T1 W HS \times T1 H AVO \rightarrow T1 W SAT; $b = -.228$, $SE = .123$, $\beta = -.166$, $p < .10$) and the pathway from Time 1 husbands' hostility and Time 1 wives' avoidance to Time 1 husbands' satisfaction (i.e., T1 H HS \times T1 W AVO \rightarrow T1 H SAT; $b = -.368$, $SE = .154$, $\beta = -.202$, $p < .05$). The illustration of each of the interactive effects is depicted in Panels E and F in Figure 6, respectively. For wives whose husbands had lower levels of avoidance at Time 1, their Time 1 hostility was positively (yet

marginally significantly) associated with their Time 1 satisfaction (Slope = .272, $p < .10$), whereas no significant association was found for wives whose husbands had average or higher levels of avoidance at Time 1. For husbands whose wives had average and higher levels of avoidance at Time 1, their hostility was negatively associated with their Time 1 satisfaction (Slope = -.371, $p < .01$ and Slope = -.606, $p < .001$, respectively), but no significant association was found for husbands whose wives were with lower levels of avoidance at Time 1.

Only one significant interactive pathway was found for the longitudinal model: the pathway from the product term between Time 1 wives' hostility and Time 1 husbands' avoidance to the changes in wives' satisfaction (i.e., T1 W HS \times T1 H AVO \rightarrow W SAT Change; $b = -.224$, $SE = .126$, $\beta = -.181$, $p < .10$). The illustration of this interaction is depicted in Panel J in Figure 6. For wives whose husbands had average and higher levels of avoidance at Time 1, their Time 1 hostility was marginally significantly or significantly associated with decreases in their satisfaction (slope = -.196, $p < .10$ and Slope = -.345, $p < .01$, respectively), but no significant association was found for wives who have lower-avoidant husbands at Time 1.

The role of life event stress. For models with spouses' *own* Time 1 life event stress as the moderator, there was an adequate fit to the data for both the concurrent model ($\chi^2 = 8.508$, $df = 6$, $p = .203$, $CFI = .983$, and $RMSEA = .063$; see Model 4 in Table 4) and the longitudinal model ($\chi^2 = 17.213$, $df = 13$, $p = .190$, $CFI = .981$, and $RMSEA = .056$; see Model 8 in Table 4). Three significant interaction pathways were found for the concurrent model: the pathways from the product term between Time 1 husbands'

hostility and Time 1 husbands' life event stress to their own Time 1 satisfaction (i.e., T1 H HS \times T1 H LES \rightarrow T1 H SAT; $b = -.786$, $SE = .341$, $\beta = -.214$, $p < .05$) and to wives' Time 1 satisfaction (i.e., T1 H HS \times T1 H LES \rightarrow T1 W SAT; $b = -1.149$, $SE = .387$, $\beta = -.270$, $p < .01$), and the pathway from the product term between Time 1 wives' hostility and Time 1 wives' life event stress to Time 1 husbands' satisfaction (i.e., T1 W HS \times T1 W LES \rightarrow T1 H SAT; $b = -.600$, $SE = .357$, $\beta = -.149$, $p < .10$). The illustration of each of these interactive effects is depicted in Panels G, H, and I in Figure 5, respectively. As shown in Panel G, for husbands with higher levels of life event stress at Time 1, their Time 1 hostility was negatively associated with their Time 1 satisfaction (Slope = $-.369$, $p < .01$), but no significant association was found for husbands with average or lower levels of life event stress at Time 1. As demonstrated in Panel H, for husbands with average and higher levels of life event stress at Time 1, their Time 1 hostility was negatively associated with wives' Time 1 satisfaction (Slope = $-.298$, $p < .05$ and Slope = $-.573$, $p < .001$, respectively), but no significant association was found for husbands with lower levels of life event stress at Time 1. As depicted in Panel I, for wives with higher levels of life event stress at Time 1, their Time 1 hostility was negatively (yet marginally significantly) associated with husbands' Time 1 satisfaction (Slope = $-.157$, $P < .10$), whereas there was no significant association for wives with average or lower levels of life event stress at Time 1.

Only one significant interaction pathway was found for the longitudinal model: the pathway from the product term between Time 1 wives' hostility and Time 1 wives' life event stress to the changes in their satisfaction (i.e., T1 W HS \times T1 W LES \rightarrow W

SAT Change; $b = -1.182$, $SE = .420$, $\beta = -.270$, $p < .01$). The illustration of this interactive effect is depicted in Panel L in Figure 5. For wives with average and higher levels of life event stress at Time 1, their Time 1 hostility was significantly associated with decreases in their satisfaction (Slope = $-.317$, $p < .01$ and Slope = $-.575$, $p < .001$, respectively).

For the models with spouses' *partner's* Time 1 life event stress as the moderator, there was an adequate fit to the data for both the concurrent model ($\chi^2 = 4.474$, $df = 4$, $p = .317$, $CFI = .995$, and $RMSEA = .042$; see Model 4 in Table 5) and the longitudinal model ($\chi^2 = 16.653$, $df = 10$, $p = .082$, $CFI = .968$, and $RMSEA = .080$; see Model 8 in Table 5). Two significant interaction pathways were found for the concurrent model: the pathways from the product term between Time 1 wives' hostility and Time 1 husbands' life event stress to Time 1 wives' satisfaction (i.e., T1 W HS \times T1 H LES \rightarrow T1 W SAT; $b = -1.120$, $SE = .302$, $\beta = -.313$, $p < .001$) and Time 1 husbands' satisfaction (i.e., T1 W HS \times T1 H LES \rightarrow T1 H SAT; $b = -.824$, $SE = .267$, $\beta = -.266$, $p < .01$). The illustration of each of the interactive effects is depicted in Panels G and H in Figure 6, respectively. Specifically, as shown in Panel G, for wives whose husbands had higher levels of life event stress at Time 1, their Time 1 hostility was negatively (yet marginally significantly) associated with their Time 1 satisfaction (Slope = $-.205$, $p < .10$); for wives whose husbands had lower levels of life event stress at Time 1, their Time 1 hostility was positively associated with their Time 1 satisfaction (Slope = $.331$, $p < .01$); but no significant association was found for wives whose husbands had average levels of life event stress at Time 1. As demonstrated in Panel H, for wives whose husbands had higher levels of life event stress at Time 1, their Time 1 hostility was negatively (yet marginally

significantly) associated with husbands' Time 1 satisfaction (Slope = $-.162$, $p < .10$); for wives whose husbands had lower levels of life event stress at Time 1, their Time 1 hostility was positively associated with husbands' Time 1 satisfaction (Slope = $.232$, $p < .05$); but no significant association was found for wives whose husbands had average levels of life event stress at Time 1. No significant interaction pathway was found for the longitudinal model.

Discussion

Is “negativity” in marital communication functionally negative and thus unequivocally associated with marital satisfaction? The present study adds to an emerging body of research aimed at addressing this question. Findings indicate that various types of factors could contextualize the associations between marital hostility and marital satisfaction. Furthermore, the current study was based on a sample of couples that has been historically underrepresented in previous marital research (i.e., Chinese couples) and utilized the advanced dyadic approaches when analyzing the data, which could not only contribute to the knowledge base with regard to couple relationships within diverse family systems, but also might provide more refined understanding of the relational implications of marital negativity for spouses' marital satisfaction.

The Negative Association between Observed Marital Hostility and Spouses' Self-Reports of Marital Satisfaction

In general (see Panels A-I in Figure 5), when spouses' hostility in couple interactions was paired with their own lower levels of self-esteem, lower levels of commitment, higher levels of avoidance tendency, *or* higher levels of life event stress,

such hostile behaviors were negatively associated with the concurrent levels of both their own and their partner's relationship satisfaction. In addition, for husbands who had highly avoidant wives, their hostility was negatively associated with the concurrent levels of their own satisfaction (see Panel F in Figure 6). As to the longitudinal associations, for wives who had higher levels of avoidance when solving problems, experienced higher levels of life event stress, *or* had highly avoidant husbands, their hostility in interactions was significantly associated with decreases in their own satisfaction (see Panels K and L in Figure 5 and Panel J in Figure 6).

Numerous studies have demonstrated that spouses' lower levels of self-esteem, lower levels of commitment, higher levels of avoidance tendency, and higher levels of life event stress are among the risks against couple relationship well-being (e.g., Drigotas, Rusbult, & Verette, 1999; Erol & Orth, 2014; Gottman, 1993; Karney & Neff, 2013). The findings of the current study add to this body of research and also extend prior work by suggesting that these risk factors can serve as conditions under which marital hostility impairs spouses' marital satisfaction.

Low self-esteem spouses tend to be more sensitive and insecure in relationships (e.g., Murray et al., 2002). When conflicts arise, low self-esteem spouses often over-interpret hostile behaviors as cues of major relational crises, which in turn may exacerbate their doubts about themselves and partners and incur dysfunctional self-protection behaviors. All these may explain why hostility is particularly detrimental for relationship well-being when spouses have lower levels of self-esteem. When resolving conflicts, low committed spouses often tend to: focus more on their own interests than on

their partner's needs and/or the relationship joint-goals; make more negative attributions of their own and partners' hostility; and engage in more relationship-defeating behaviors and fewer relationship-promoting behaviors (e.g., Rusbult et al., 2001; Stanley et al., 2010). Thus, hostile behaviors performed by low-committed spouses may be especially hurtful for relationship well-being.

Under the circumstances of high levels of life event stress, spouses are likely to engage in hostile behaviors more frequently and intensely and also experience various secondary stressors (e.g., health problems). All these may deplete the resources that spouses may otherwise use to cope with hostility (Karney & Neff, 2013). Thus, couple relationships suffering from a greater number of negative stressful life events may be especially susceptible to the harmful impacts of marital hostility. Higher levels of avoidance when handling conflicts often hinder problem resolution and hurt relationships by conveying messages of emotional detachment (Eldridge & Christensen, 2002; Gottman, 1993). Although spouses' hostility may represent engagement in resolving problems, this is probably not the case when that hostility is paired with high levels of avoidance. Instead, hostile-avoidant spouses are more likely to use hostility merely as a way to express negative emotions, which might be particularly unhelpful for problem resolution and thus contribute to relationship dysfunction (Overall et al., 2009).

The Positive Association between Observed Marital Hostility and Spouses' Self-Reports of Marital Satisfaction

Overall (see Panels A-E, G, and H in Figure 6), for wives whose husbands had higher levels of self-esteem, higher levels of commitment, lower levels of avoidance

tendency, *or* experienced lower levels of life event stress, their hostility in couple interaction was positively associated with the concurrent levels of both their own and their husband's satisfaction. Longitudinally, for husbands who had higher levels of self-esteem or had highly committed wives, their hostility was significantly associated with increases in their own marital satisfaction (see Panel J in Figure 5 and Panel I in Figure 6). According to prior research (e.g., McNulty & Russell, 2010; Overall et al., 2009), whether couples can benefit from hostile exchanges between partners depends on the extent to which the hostility is helpful for resolving problems and producing desired changes. Thus, to understand why the aforementioned factors can serve as conditions under which marital hostility promotes conjugal well-being, it is critical to figure out how they may contribute to successful marital problem resolution.

In the face of marital conflicts, spouses' with higher levels of self-esteem are less likely to read too much into their partners' hostile behaviors; rather, they tend to validate their partners' needs and emotions, and respond to the hostility with more supportive and accommodative behaviors (e.g., Murray et al., 2002). Similarly, spouses with higher levels of commitment are less calculative in marriage, and are more willing to prioritize their partner's needs and relationship joint-goals over their personal interests when encountering conflicts (Rusbult et al., 2001; Stanley et al., 2010). Spouses situated in a context characterized by lower levels of life event stress are more likely to have more resources that they can use to cope with their partner's hostility, reflect on what is wrong, and then fix it when possible (Karney & Neff, 2013). When conflicts arise, coping strategies utilized by low-avoidant spouses are more likely to be directly confronting the

problems and actively engaging in resolving the problems. Although such processes often involve various types of hostile behaviors such as anger, criticism, and interrogation, they can help couples effectively address the problems incurring conflicts and thus ultimately benefit their relationship (Overall & McNulty, 2016).

Spouses' Own Factors or Their Partner's Factors: Does this Matter?

Clearly, the current findings indicate that marital hostility is not inherently harmful or beneficial for conjugal well-being, concurrently or prospectively; rather, its effects are conditioned by the contexts in which the relationship is situated, and such contexts can be defined by intrapersonal traits, relationship characteristics, external environment factors, and other marital interactive behaviors. Moreover, taking all aforementioned moderating effects into consideration, some subtle patterns of findings emerged. Simply put, it seems that generally spouses' *own* factors as moderators explained when there might be a negative association between marital hostility and spouses' marital satisfaction (i.e., 11 out of 12 moderating effects depicted in Figure 5: Panels A-I, K, and L), but spouses' *partner's* factors as moderators determined when there might be a positive association between marital hostility and spouses' marital satisfaction (i.e., 8 out of 10 moderating effects depicted in Figure 6: Panels A-E, G-I).

From the communication process perspective (e.g., Stamp & Knapp, 1990), getting from one person's communicative intentions to the impacts of that person's messages on a listener involves several steps. Specifically, interpersonal communication begins with the sender's intentions. Then, the sender needs to *encode* the messages he/she wishes to convey into observable verbal and nonverbal behaviors. The receiver must

decode the sender's actions via meaning-making processes (e.g., attribution). Moreover, both the encoding and decoding processes may be interfered with by a series of factors (e.g., the sender's mood or skills, the characteristics of the relationship).

Accordingly, for any particular hostile behavior in couple interactions, spouses themselves act as the "senders" and "encoders", whereas their partners as the "receivers" and "decoders." Thus, I speculate that the explanations for the differential effects of spouses' *own* and their *partner's* factors in determining the association between marital hostility and marital satisfaction may lie in that spouses' *own* factors are more likely to shape their intentions underlying hostile behaviors and the ways they demonstrate hostile behaviors (i.e., the encoding processes), whereas their *partner's* factors are more likely to affect how partners interpret and respond to hostile behaviors (i.e., the decoding processes). However, I am not quite clear about this but believe that the present findings await replications, and future research will benefit from further examining whether the secrets of the different effects of marital hostility may be rooted in the encoding processes and the decoding processes, respectively.

In addition, informed by the classification by Cowan et al. (1996) regarding the risk and resilience in families, it appears that the roles of contextualizing factors in the associations between interpersonal processes and relationship well-being also can be classified as follow: amplifiers (i.e., factors increasing the probability of a specific negative or undesirable outcome in the presence of a risk); buffers (i.e., factors decreasing the probability of negative or undesirable outcomes in presence of a risk); or resilient factors (i.e., factors operating in the presence of a risk to produce outcomes as

good or better than those obtained in the absence of a risk). Accordingly, the finding that spouses' partners' factors as moderators determined when hostility can be beneficial for relationships may suggest that partner's factors (e.g., spouses' partners' high self-esteem) are more likely to be resilient factors in the presence of marital hostility; and the finding that spouses' own factors as moderators explained when hostility may be harmful for relationships may suggest spouses' own factors are more likely to be amplifier or buffer factors (e.g., spouses' own low commitment) in the presence of marital hostility

However, I acknowledged that all the aforementioned thoughts are highly speculative and might not be as accurate or specific as they should be. I pointed these out simply to encourage future research to systematically investigate such possibilities. It is clear that this interesting pattern found in the current study awaits replications.

Additional Thoughts on the Different Effects of Hostility in the Present Study

As noted already, both negative and positive associations between marital hostility and spouses' marital satisfaction were found in the current study. It might be necessary to read these findings from a more "*dialectic*" perspective. The negative associations do not mean no potential benefits involved, and the positive associations do not mean no possible costs involved; instead, both potential benefits and costs are inherent within marital hostility. However, under some specific circumstances (e.g., when hostility is paired with *lower* levels of avoidance), the potential beneficial functions of hostility for relationship well-being are more likely to be *realized and maximized* (e.g., helping spouses become acutely aware of the severity of the problem; stimulating spouses' motivation to confront and engage in resolving the problems; and regulating spouses'

behaviors to produce desired changes), whereas the possible harmful consequences of hostility are more likely to be *minimized* (e.g., incurring conflicts escalation; contributing to a “toxic” relationship atmosphere, and disposing spouses to physiological and psychological costs). In contrast, under some other specific circumstances (e.g., when hostility is paired with *higher* levels of avoidance), the potential harmful consequences of hostility are more likely to be *maximized*, and the possible beneficial functions of hostility for relationship well-being are more likely to be *minimized*.

In the main effect longitudinal model of the present study, husbands’ hostility was significantly associated with increases in their own marital satisfaction. However, this association was further qualified by two significant interactive effects suggesting that husbands’ hostility was significantly associated with the increases in their own perceived marital satisfaction *only* when husbands had higher levels of self-esteem or their wives had higher levels of commitment. It is clear that such findings await replications and systematic examinations for explanations and should be cautiously interpreted. However, some speculations may be helpful. First of all, it should be acknowledged that costs for relationship well-being are inherent within husbands’ hostility under whatever circumstances. However, as stated above, such costs might be minimized and the potential positive functions of hostility might be realized and maximized when husbands have higher levels of self-esteem or their wives have higher levels of commitment. Again, such findings *only* reflect the *complexity* inherent within the implications that couple interactive processes may have for marital outcomes but do *not* suggest that spouses should engage in more hostile exchanges in their marital interactions.

Limitations and Directions for Future Research

Several additional limitations of this study and possible avenues for future inquiries should be noted. First, the present study was based on a relatively small sample of Chinese couples who were in their early years of marriage and living in economically developed urban areas. Partners in these couples had higher levels of SES than did the broader population in the recruitment areas as compared to census data from the year of data collection (Beijing Municipal Bureau of Statistics, 2011). Thus, the present findings should be cautiously generalized to Chinese couples in other marital stages, living in rural areas, and having lower SES. Research with larger and diverse samples is warranted.

Second, couples in the current study were recruited by research assistants at the study's home institution via various ways such as contacting acquaintances, posting announcements on websites, and passing out leaflets in communities. Unfortunately, I could not statistically test the effects of the recruitment method on the findings as this variable was not available in the dataset. However, it is important to acknowledge that in marriage research, the strategies researchers utilize to recruit participants play crucial roles in shaping the characteristics of the samples they can ultimately obtain, and thus also affect the inferences and conclusions they will draw about the associations among study variables (Karney, Davila, Cohan, Sullivan, Johnson, & Bradbury, 1995; Kitson, Sussman, Williams, Zeehandelaar, Shickmanter, & Steinberger, 1982). As compared to the probability-based, random sampling techniques, the convenience sampling and snowball sampling strategies I used in the current study did not allow specification of the

sampling frame (i.e., the population from which the sample is drawn) or estimation of nonresponse rates, and thus diminished the generalizability of the findings.

Third, marital hostility was observed only at the first wave of data collection in the current study. This prevents us from examining how the changes in marital hostility influence the later changes in marital satisfaction (Markman, Rhoades, Stanley, Ragan, & Whitton, 2010) and from examining the direction of such associations. Fourth, the data with respect to several important factors that also may shape the association between hostility and satisfaction were unfortunately unavailable in the study but should be considered (either controlled or examined as key moderators) in future research, including the severity of problems (e.g., minor *vs.* severe) and the properties of hostile behaviors (e.g., behavior-focused *vs.* character-focused) (Overall & McNulty, 2016).

Lastly, spouses engage in numerous communication behaviors when interacting with each other, and these behaviors interact with each other to exert their influences on marital functioning (e.g., negative behaviors may have stronger detrimental effects when few positive behaviors are exchanged between partners) (e.g., Bradbury & Karney, 2004). Thus, it is pressing to investigate the unique contributions of hostility to relationship well-being above and beyond the other interactive behaviors, and how marital hostility may operate in conjunction with the other communication behaviors, especially the validating ones (e.g., warmth), to shape relationship well-being.

Conclusion

The current study is among the very first steps in understanding the association between marital hostility and marital satisfaction as well as the factors that may moderate

this association during the first few years of marriage in a historically underrepresented population (i.e., Chinese couples) from a “dyadic, multilevel, and contextual” perspective. The results clearly suggest that various factors deriving from different levels of influences can contextualize the implications of marital negativity, which has long been viewed as a “negative” interpersonal process in marital lives, for spouses’ marital satisfaction. Moreover, findings of the present study also indicate that such contextualizing effects can occur both within partner and crossover partner on both the actor effects and the partner effects of marital hostility on marital satisfaction. Taken altogether, the current study adds to an emerging body of research aiming at clarifying the mixed findings with respect to the association between marital hostility and marital satisfaction, and also contributes to revealing the complexity inherent within the implications that couple interactive processes may have for marital outcomes.

CHAPTER IV

STUDY 3. THE ASSOCIATION BETWEEN PARENTS' ATTITUDE TOWARD THEIR ADULT CHILDREN'S MARRIAGE AND CHANGE IN ADULT CHILDREN'S MARITAL SATISFACTION DURING THE EARLY YEARS OF CHINESE MARRIAGE: THE MEDIATING ROLE OF IN-LAW RELATIONSHIP QUALITY

Introduction

According to the ecological model of marriage in general (e.g., Huston, 2000) and the social network perspective in particular (e.g., Milardo & Helms-Erikson, 2000), no couple exists as an isolated island; rather, marital relationships are embedded in an intricate web of interdependent social ties in which various people's interests and preferences must be considered and negotiated. Although an expanding body of research has demonstrated that social network factors generally can affect conjugal bonds (Parks, 2007; Sprecher, Felmlee, Orbuch, & Willetts, 2002; Sprecher, Felmlee, Schmeckle, & Shu, 2006), it seems that parental attitude toward adult children's marriage or spouses and in-law relationship quality have been identified as particularly salient network determinants of adult children's marital outcomes (e.g., Bryant & Conger, 1999; Bryant, Conger, & Meehan, 2001; Felmlee, 2001; Morr Serewicz, 2006; Sprecher & Felmlee, 1992). Notwithstanding these advancements, the existing studies concerned with the implications of parental attitude and in-law relationship for adult children's conjugal well-being have been limited in several important ways.

First, research in this domain has been conducted primarily with Western couples, despite the fact that parental attitude and in-law relationship may hold particularly crucial implications for adult children's marital outcomes in non-Western cultural contexts that have been historically characterized by endorsements of intergenerational hierarchy and filial piety (Whyte, 2004), extended family coresidence (Logan & Bian, 2005; Zhang, 2004), and a parental arranged mate selection and marriage system for adult children (Riley, 1994; Zhang & Kline, 2009). Second, in terms of the existing slim body of research in this field based on samples of non-Western couples (e.g., Pimentel, 2000; Song & Zhang, 2012; Wu, Yeh, Cross, Larson, Wang, & Tsai, 2010), there is little research that has examined whether parental attitude and in-law relations can impact the changes in adult children's marital outcomes over time, which precludes researchers from addressing the temporality of such associations.

Third, there is still a critical lack of analyses utilizing dyadic approaches (for an exception, see Morr Serewicz, Hosmer, Ballard, & Griffin, 2008) when examining these topics, even though the interdependent nature of couple relationships has long been emphasized in marital research. Fourth, few studies have investigated how parental attitude and in-law relationship operate in conjunction to affect adult children's marital well-being. However, an emerging body of research has suggested that the seeds of in-law relationship quality and their impacts on the long-term fate of adult children's conjugal ties might be sown by parental attitude toward their adult children's marriage or spouses during the early stages of (or even before) marriage (e.g., Fingerman, Gilligan, VanderDrift, & Pitzer, 2012; Mikucki-Enyart, Caughlin, & Rittenour, 2015; Morr

Serewicz et al., 2008; Prentice, 2008). In other words, it is likely that in-law relationship quality could be one understudied important mechanism through which parental attitude affects adult children's marital well-being.

Fifth, research on in-law relationship quality and its association with adult children's marital well-being has long focused (almost exclusively) on the relationship between mothers-in-law and daughters-in-law (e.g., Fischer, 1983; Rittenour & Kellas, 2015; Wu et al., 2010) or the global in-law relationship without specifying the particular parent-in-law (e.g., Morr Serewicz et al., 2008; Timmer & Veroff, 2000). However, the importance of the relationship between mothers-in-law and daughters-in-law for adult's children's marital well-being does not necessarily indicate that in-law relationships involving males are inconsequential (Bryant et al., 2001; Willson, Shuey, & Elder, 2003). As Morr Serewicz and colleagues (2006; 2011) suggested, research on the relationship between mothers-in-law and daughters-in-law should be matched by research including fathers-in-law and sons-in-law, which may provide increased specificity in our understanding of the relative implications that different in-law dyads may have for adult children's marital outcomes.

Lastly, research examining the associations among parental attitudes, in-law ties, and adult children's conjugal bonds has been primarily based on samples of couples with heterogeneous marital lengths (for two exceptions, see Timmer & Veroff, 2000; Timmer, Veroff, & Hatchett, 1996), which raises the concern that some important effects might have been masked by differences associated with relationship duration. Although the influences of social network factors on couple relationships likely continue throughout

marriage (e.g., Bryant et al., 2001), couples in the early years of marriage may be more susceptible to the influences from parents and parents-in-law than those in more established relationships, given that they face the developmental task of forming a separate and autonomous family while also maintaining connections to families-of-origin (Kearns & Leonard, 2004; Schramm, Marshall, Harris, & Lee, 2005). In addition, the importance of examining such associations during the first few years of marriage also is bolstered by the steeper decline of marital satisfaction and the higher rate of relationship dissolution in this stage (e.g., VanLaningham, Johnson, & Amato, 2001).

The present study therefore sought to address all the aforementioned limitations by using three annual waves of data obtained from 265 Chinese couples during the very early years of marriage to test an actor-partner interdependence mediation model (APIMeM; Ledermann, Macho, & Kenny, 2011) with latent difference scores (LDS; McArdle, 2009). Specifically, this study examined the extent to which adult married children's perceptions of their parents' attitude toward their (i.e., adult married children's) current marriage were linked to the changes in both their (i.e., adult married children's) own and their partners' reports of relationship satisfaction during the first few years of marriage through adult married children's perceived relationship quality with their parents-in-law (see Figure 7 for the conceptual model).

It is particularly noteworthy that both husbands' and wives' relationship quality with their respective fathers-in-law and mothers-in-law were considered in the current analyses (i.e., the relationships between daughters-in-law and mothers-in-law, between daughters-in-law and fathers-in-law, between sons-in-law and mothers-in-law, and

between sons-in-law and fathers-in-law), which may help clarify potential gender differences in the relative implications of various in-law relations for adult children's conjugal well-being. In addition, as compared to prior research, the nature of the data and the analytic techniques I utilized in the present study are more appropriate and more rigorous for addressing the temporal ordering of the study variables and have higher power for detecting indirect effects: the longitudinal mediation models to examine hypotheses across three waves of data (Maxwell, Cole, & Mitchell, 2011), the bootstrapping approach estimating bias-corrected standard errors and confidence intervals for the indirect effects (Preacher & Hayes, 2008), and the latent difference score indices of prospective changes in outcome variables (McArdle, 2009).

Theoretical Foundation

The theoretical grounding for the current model is based on an integration of several theoretical perspectives: the social ecology model of marriage (Huston, 2000); the triangular theories of interpersonal relationships, including the "three corners" model of marriage (Marks, 1986) and the triangular theory of communication and relationships of in-laws (Morr Serewicz, 2008); the family development and life course perspectives (Bengtson & Allen, 1993; Rodgers & White, 1993); and the broader theories regarding social network influences on dyadic relationships (e.g., Felmlee & Faris, 2013; Milardo & Lewis, 1985; Sprecher, Felmlee, Orbuch, & Willetts, 2002; Surra & Milardo, 1991).

The social ecology model of marriage. One of the key propositions in the social ecology model of marriage is that conjugal unions as behavioral systems are embedded in various contexts, including both the macrosocietal contexts and the ecological niches

within which spouses function on a daily basis (Helms, 2013; Helms, Supple, & Proulx, 2011; Huston, 2000). Specifically, the macrosocietal contexts include “sociohistorical location, dynamic dimensions of culture such as norms and values endorsed by members of a cultural or subcultural group, and overarching socioeconomic conditions” (p. 245, Helms, 2013), whereas the ecological niches represent a constellation of proximal settings including both the social environment (e.g., extended kinship network) and the physical environment (e.g., neighborhood). Furthermore, the macrosocietal contexts can affect marital dynamics by altering spouses’ ecological niches and spouses’ ecological niches also provide the medium through which macrosocietal values are articulated, reinforced, or undermined (Huston, 2000). Thus, to get a complete understanding of marital relationships, it is critical to examine how the macrosocietal forces and the ecological niches impinge on partners and their marital ties.

According to Huston’s three-level, ecological model of marriage, constructs examined in the present study lie in different levels. “Adult children’s marital satisfaction” is at the “individual” level (i.e., the subcomponent labeled “more general evaluations of the marriage” in the broader component labeled “spouses’ beliefs and feelings about the marriage”). “Parents’ attitude toward their adult married children’s marriage” is at the “contextual” level (i.e. the subcomponent labeled “spouses’ ecological niches” in the broader component labeled “macroenvironment”). “Children’s relationship quality with their parents-in-law” seems to be a “cross-level” construct because it represents the connections between spouses with the important others in their proximal social networks; however, technically, it is more at the “contextual” level as it represents the

subcomponent labeled “relationships with extended kin” in the broader component labeled “spouses’ ecological niches.”

The three corners model of marriage and the triangular theory of in-law relations. Scholars have long been calling for research that goes beyond consideration of dyads to address triads when examining familial relationships (e.g., Duck, Foley, & Kirkpatrick, 2006). Two of the triangular theories of interpersonal relationships that are particularly relevant for the proposed model are the “three corners” model of marriage by Marks (1986) and the triangular theory of communication and relationships of in-laws by Morr Serewicz (2008). Marks’ model provides a useful theoretical lens for contemplating the third-party effects on marital relationships. Of central importance to this model are propositions that: (a) married individuals are often in a constant process of balancing demands from three corners of a triangle that consists of the inner self, the marriage, and the interests outside of marriage; (b) spouses’ involvements within their third corners (e.g., relationships with extended family members) hold critical implications for their marital dynamics; and (c) spouses, primary partnerships, and relationships with third parties change over time, and a change in one corner is likely to elicit change in other corners (Milardo & Helms-Erikson, 2000).

Morr Serewicz’s (2008) theory is specific to the communication and relationships of in-laws. As she proposed, a spouse often automatically gains in-laws upon marriage, suggesting that an involuntary relationship between in-laws is formed with one partner in the new couple as a “linchpin”. Thus, one of the defining characteristics of in-law relations is the triadic, involuntary nature (i.e., a triangle of familial relationships, marital

relationship, and in-law relationships). Because of the ambiguity inherent within in-law relationships (i.e., unclear role expectations); the involuntary, triadic characteristics of in-law relationships (i.e., forming via a third party); and the dilemma of in-law relationships (i.e., strangers and kin), it is usually difficult for in-laws to get along with each other, which may generate stress for marital relationships. Additional propositions that are particularly related to the present study include: (a) in-law relationships are continually changing, with major transitions as well as short-term fluctuations in interactions; (b) communication among the members of the triangle has important implications for the triangle as a whole; and (c) disclosure from the linchpin partner's family members would be associated with relational quality for all dyads in the triangle.

The family development and life course perspectives. The family development and life course perspectives (Bengtson & Allen, 1993; Rodgers & White, 1993) focus on the systematic and patterned changes experienced by family members as they move through stages of the family life course that is embedded in the broader social context with certain structures, expectations, and constraints at a particular historical location. The most focal point of this framework is the timing and the sequence norms of the family development that are precipitated internally by demands of the family members and externally by expectations and constraints of the larger society. This perspective thus involves a contextual, processual, and dynamic approach to examine changes in the lives of individual family members over time and of families as social units as they change over historical periods.

Accordingly, a family stage is a period in the lifetime of a family with its own structure and interactions of role relationships that are distinct from the periods that precede and follow it. The stage is usually inferred from events that indicate changes in the family membership or the way in which members are spatially and interactionally organized. A transition occurs when a family moves from one stage to another. During transitions, family members would face developmental tasks defined as a set of norms or role expectations arising at a certain family stage. Successful achievement of these tasks likely leads to success with later tasks.

Marriage is not only the jointing of two individuals, but also is the jointing of two families. Thus, the transition to marriage is often accompanied by the transition to the extended family. One of the major developmental tasks faced by newlyweds during the early years of marriage is forming a separate and autonomous family while maintaining connections to families-of-origin, especially managing relationships with in-laws.

The broader theories regarding social network influences on close relationships. According to Milardo (1988), a network of close associates is defined as a specific subtype of social network that is composed of a set of people who are “important” to a focal individual or couple, typically including parents, in-laws, other kin, and friends. Despite the importance of close friendships in individuals’ life, kinship relations have long been viewed as primary agents of exchanges in personal networks, whose thoughts and behaviors usually have significant influences on the target individuals’ actions and ideas and their social relationships, especially the initiation, maintenance, deterioration, and termination of romantic relationships.

Several theoretical statements have been proposed to account for the influences that social networks might exert on romantic relationship development (e.g., Felmlee & Faris, 2013; Milardo & Lewis, 1985; Parks, 2007; Sprecher et al., 2002). I herein highlight those processes that may be the most relevant to understanding the effects of social networks on romantic relationships. It should be noted that these mechanisms are not tested in the present study but only help to explain the proposed associations between network factors and couple relationships.

The major factors through which social networks influence romantic relationships involve opportunity, information, and support. Furthermore, these factors are hypothesized to function through the mechanisms of uncertainty reduction, social comparison, social sanctions, resocialization, and self-regulation. First, social networks can provide (or block) opportunities to individuals for alternative partners. Second, social networks can provide various types of information to couples such as giving advice regarding conflict resolutions and sharing information disclosed by one partner to the other. Thus, partners can acquire knowledge about one another and their relationship from social network members, which may reduce or increase uncertainty about a partner. In addition, social network members may provide opinions about social comparison standards about couple relationships, which may be used by individuals as a yardstick against which to evaluate their own spouses and marriages.

Third, social networks often are a major source of support for couples. Social networks may send messages to partners to express (dis)approval for the romantic relationship. For example, when trying to be supportive, relatives may invite the two as a

pair to social events. As such, social sanctions will promote partners' perceived relationship satisfaction and enhance partners' identity as a couple. Social networks also can provide couples with practical, emotional, and financial assistances. Related to the emotional support processes, social networks can impact couple relationships by severing as substitute sources of companionship and intimate exchange. Lastly, partners may internalize the norms of their social networks regarding couple relations. Thus, partners could expect rewards and penalties related to adhering and violating the norms. As a result, partners would likely regulate their thoughts and behaviors in couple relationships according to these norms.

Summary and integration of different theoretical perspectives. The social ecology model of marriage highlights the importance of considering the role of ecological niches when examining marital relationships. Among various ecological niches, the three corners model of marriage particularly emphasizes the critical implications that spouses' relationships with the third parties such as extended family members and close friends may have for conjugal bonds. Moreover, among different extended family members, the triangular theory of in-law relationships particularly specifies challenges that spouses often face when dealing with the triadic, involuntary in-law relations and their influences on marital well-being, whereas the broader theories regarding the social network impacts on dyadic close relationships clearly delineate why individuals' important others' attitudes and behaviors may influence their marital relationships. Despite the fact that social network factors such as in-law relationship and significant others' attitude likely continue throughout marriage, the family development perspectives suggest that couples

in the first few years of marriage may be more susceptible to the influences from parents and parents-in-law than those in more established relationships, given that they face the transitional task of forming a separate and autonomous family while also maintaining connections to families-of-origin.

Taken all aforementioned frameworks into account, the proposed model integrates the theories regarding in-law relationships and their influence on marital relationships with the theories concerned with parental attitude and its impacts on adult children's marriage by examining how the two critical social network factors operate in conjunction with each other to influence adult children's conjugal bonds. This effort is important because "families are far from isolated nuclear units living in discrete households but are best represented as configurations of interdependent relationships organized across multiple households" (Milardo, 2010) and "marriage is not a duet, but rather a complex orchestral arrangement, one in which many different people's needs and preferences must be considered and negotiated" (p.154, Holmberg, Orbuch, & Veroff, 2004).

Empirical Background

Parental attitude and adult children's marital satisfaction. Entering marriage with or without parents' support may have crucial implications for adult children's concurrent and long-term conjugal well-being. With very few exceptions (e.g., the "Romeo and Juliet" effect; Driscoll, Davis, & Lipetz, 1972), previous research conducted with samples of Western couples has consistently demonstrated that parental favorable attitude toward adult children's marriage or spouses (e.g., approval and acceptance) is positively associated with adult children's marital satisfaction, stability, and commitment,

whereas parental unsupportive attitude (e.g., disapproval and rejection) is generally negatively associated with adult children's various marital outcomes (Bryant & Conger, 1999; Bryan, Fitzpatrick, Crawford, & Fischer, 2001; Felmlee, 2001; Sprecher & Felmlee, 1992). Several explanatory mechanisms have been proposed for making sense of such associations (Parks, 2007; Sprecher et al., 2002).

For examples, when parents hold favorable attitude toward their adult children's spouses or marriages, they might be more likely to provide couples with: (a) practical, emotional, and financial assistance (e.g., taking care of young grandchildren) and thus ameliorate potential intradyadic stress; (b) social acknowledgement or acceptance (e.g., inviting the two partners as a pair to family events) and thus enhance partners' identity as a couple; and (c) validating comments (e.g., telling the two partners that they are a perfect match) and thus promote their feelings of contentment with the partner and satisfaction with the relationship by reducing possible doubts and uncertainties. However, when parents have unsupportive attitude toward their adult children's spouses or marriages, these processes are likely to unfold in a very opposite direction and thus impair adult children's marital bonds.

Although mechanisms derived based on Western samples also might apply to the association between parental attitude and adult children's marital well-being during the first few years of Chinese marriage, some factors that may be unique to Chinese marriages and families also should be noted. Historically rooted in the Confucian values and beliefs (e.g., filial piety), traditional Chinese families had been long organized based on a rigid hierarchy of age, generation, and gender in which elder parents often had

supreme power in family issues and children were socialized to unconditionally respect parents' decisions, absolutely obey parents' commands, and sensitively tend to parents' needs and preferences (Shek, 2006; Whyte, 2004). Thus, it is not surprising that Chinese adult children's mate selection, marital decision, and marital lives have been long under their parents' control, and parental attitudes have played critical roles in determining Chinese adult children's marital relationship development (Hong, 2006; Pimentel, 2000; Riley, 1994; Xu & Whyte, 1990).

Despite the dramatic shift from an arranged marriage system impregnably dominated by parents to a more personal choice based marriage system in China during the past several decades (Pimentel, 2000), Chinese parents remain actively involved in their adult children's mate selection processes and marital lives by means of introducing potential partners to adult children, giving advice about marital decisions, setting barriers when disliking adult children's partners, providing supports to married children's nuclear families when necessary, and intervening in adult children's marital conflicts. On one hand, filial piety traditions are still highly valued in contemporary Chinese families and greatly emphasized in Chinese children's socialization and upbringing processes. Therefore, although Chinese married youths may be less likely to blindly surrender to their parents' preferences and commands nowadays as compared to the prior generations, they may still view the ways they treat their parents' opinions and behaviors as essential measures of their personal moral worth as well as central criteria to evaluate the family solidarity (Shek, 2006; Whyte, 2004; Zhang & Kline, 2009).

On the other hand, Chinese married youths may expect and need parents' active involvements in their marital lives due to some economic and practical considerations: the extremely high prices of houses and the tight housing conditions in China (especially in urban areas), the need for childcare assistance in dual-career couple headed families, and the need for family to serve as a major elder care institution because of the underdeveloped social security system (Chen, 2005; Logan & Bian, 1999; Logan, Bian, & Bian, 1998; Pimentel, 2000; Riley, 1994; Zhang, 2004). When Chinese parents hold favorable attitudes toward their adult children's spouses or marriages, they are more likely to provide supports to adult children and children-in-law by sharing houses, lending money, taking care of young grandchildren, and reducing elder care burdens. Thus, in the modern China, a mix of the traditional cultural norms emphasizing filial piety and the strategic responses to socioeconomic circumstances may have jointly contributed to the continuing high parental involvement in adult children's marital lives and the critical implications of their attitudes for adult children's conjugal well-being.

In-law relationship quality and adult children's marital satisfaction.

Typically, a spouse automatically gains in-laws upon marriage, suggesting that an involuntary relationship is formed between the spouse and his/her in-laws with the other partner in the newlywed couple serving as a "linchpin" (Morr Serewicz, 2008). Thus, one of the most defining characteristics of in-law relations is their triadic, involuntary nature. Also because of the ambiguity inherent within in-law relations (i.e., unclear role expectations) and the dilemma of in-law relations (i.e., simultaneously being strangers and kin), it is usually difficult for in-laws to get along with each other (Morr Serewicz,

2006; Morr Serewicz & Hosmer, 2011). In addition, prevailing negative cultural stereotypes and pejorative media portrayals of in-law relationships, especially the relationship between mothers-in-law and daughters-in-law, might be internalized by children-in-law and parents-in-law, which also may contribute to their fears and worries about in-law relations. These expectations may, consciously or unconsciously, shape subsequent in-law relations (i.e., self-fulfilling prophecies) (Fingerman et al., 2012).

Precipitated by internal difficulties and external contexts, the tension between parents-in-law and children-in-law may generate considerable stress for adult children's marital relationships and ultimately impair their conjugal well-being. Indeed, a growing body of research based on samples of Western couples has demonstrated that a considerable number of spouses attribute some critical problems in their marriages to the difficulties with their parents-in-law (e.g., Cotterill, 1994; Duvall, 1954; Fischer, 1983; Merrill, 2007), and that there indeed exists a positive association between spouses' relationship quality with their parents-in-law and their marital well-being in both the early and the later stages of marriages (Bryant et al., 2001; Mikucki-Enyart et al., 2015; Timmer & Veroff, 2000).

When relations between children-in-law and parents-in-law are unhappy, parents-in-law might be: (a) less likely to provide support to their adult children and children-in-law; (b) more likely to have conflicts with adult children and children-in-law; (c) more likely to set barriers to prevent children-in-law from successfully assimilating into the extended families; and (d) more likely to interfere in adult children's family issues (e.g., marital conflicts and childrearing). These processes may harm adult children's marital

well-being through: (a) draining time, energy, and resources that they may otherwise devote to relationship maintenance; (b) inducing conflicts and eroding positive exchanges between partners; and (c) impairing their psychological and physiological health.

Furthermore, effectively dealing with the difficulties inherent within in-law relations may be particularly important during the very early years of marriage (Kearns & Leonard, 2004). Marriage is not only the jointing of two individuals, but also is the jointing of two families. Transition to marriage is often accompanied by transition to the extended family (Mikucki-Enyart et al., 2015). According to family development theories, one of the most prominent developmental tasks faced by newlyweds is forming a separate and autonomous family while also maintaining connections to their respective natal families (e.g., dealing with the psychological loyalties to families of origin). Successful achievement of this task is likely to lead to success with the developmental tasks in the subsequent family life stages.

Although in-law relationships universally hold critical implications for the quality of adult children's marital ties across different cultures, there are good reasons to believe that Chinese couples' conjugal well-being may be particularly susceptible to the influences of in-law relations. As noted already, given the historical traditions of extended family coresidence (Zhang, 2004), filial piety (Liu et al., 2010; Whyte, 2004), and parental control (yet not as powerful as before) over adult children's mate selection and marriage (Pimentel, 2000; Riley, 1994), Chinese adult children's marital lives and their parents' (primarily husbands' parents') lives, as compared to their Western counterparts, are more likely to be highly intertwined with each other. This may greatly

increase the likelihood of in-law relationship problems, which in turn may influence adult children's marital well-being. Based on some survey studies, in-law relationship issues have been consistently rated by Chinese spouses as major problems that hold critical implications for their personal and conjugal well-being (e.g., Pfeifer, Miller, Li, & Hsiao, 2013; Zheng & Lin, 1994). Experiencing conflicts with parents-in-law (primarily mothers-in-law) is a major trigger event for or contributor to Chinese married adult children's (primarily wives) suicide attempts (Pearson, Phillips, He, & Ji, 2002), depression (Gao, Chan, You, & Li, 2010; Lau, Yin, & Wang, 2011), intimate partner violence (Chan, Brownridge, Tiwari, Fong, & Leung, 2008), and marital conflicts and distress (Song & Zhang, 2012; Wu et al., 2010).

Parental attitude, in-law relationship, and adult children's marital

satisfaction. As noted already, the associations between either parental attitude or in-law relationship quality and adult children's various marital outcomes have been somewhat well established (at least among Western couples). Few studies have examined how parental attitude and in-law relationship quality operate in conjunction to affect adult children's conjugal well-being, as if the two social network factors were independent of each other. However, an emerging body of research has suggested that parental attitudes toward their adult children's marriage or spouse (e.g., satisfaction, approval, rejection) may affect children-in-law's assimilation into extended families by influencing the establishment of their in-group status (i.e., the identity as "genuine" family members) and by impacting their perceived relational uncertainty in in-law dyads (e.g., doubts regarding the nature or the future of the relationship) (Mikucki-Enyart, 2011; Mikucki-Enyart &

Caughlin, 2015; Mikucki-Enyart et al., 2015; Morr Serewicz & Canary, 2008; Morr Serewicz et al., 2008; Prentice, 2008).

Thus, it seems possible that entering marriage with or without parental favorable attitudes could *foreshadow* whether or not the future in-law relationships would be harmonious. Moreover, when parents hold negative attitude toward their adult children's marriage or spouse, all the aforementioned difficulties inherent within in-law relations might be amplified (e.g., more frequent and intense in-law conflicts, increased likelihood of treating each other as rivals and outsiders rather than kin), which may, in turn, set in motion a series of processes that can *sow the seeds* of the long-term fate of adult children's conjugal ties (e.g., draining time, energy, and resources that couples may otherwise devote to their relationship maintenance). Simply put, *in-law relationship quality could be one key pathway by which the effects of parental attitude on their adult children's marital well-being occur, or parental attitude might be one critical antecedent of adult children's future in-law relationship quality*. This might be particularly the case in Chinese marriages and families, given the historical traditions of extended family coresidence, filial piety, and parental power in adult children's marriages in China.

Method

Study Design and Sample Characteristics

The present study is based on data from a larger project named Chinese Newlyweds Longitudinal Study (CNLS). At Time 1, sampling was undertaken to identify couples who were within 3 years of their wedding, in their first marriage, without children, and living together in Beijing. Couples who met the above eligibility criteria

were recruited by research assistants at the study's home institution. They were trained to contact acquaintances to locate eligible couples and post announcements on websites or in communities to call for couples. Ultimately, 268 couples participated in this study.

Of the 268 couples, data from 3 couples were deleted because one or both spouses' parents died before their marriages. Thus, the final sample at Time 1 for the current study was comprised of 530 partners in 265 couples. These couples had been married a mean of 13.66 months ($SD = 9.73$). Husbands and wives were on average 29.60 ($SD = 3.26$) and 28.09 years old ($SD = 2.51$), respectively. The modal level of education for both husbands and wives was a bachelor's degree (4 years of college). The median levels of monthly income for husbands and wives were 7,000 RMB ($SD = 6211.94$, approximately US \$1,071.37) and 5,000 RMB ($SD = 3985.61$, approximately US \$765.27), respectively. Based on the publically available Chinese census data at the year of data collection (Beijing Municipal Bureau of Statistics, 2011; National Bureau of Statistics of the People's Republic of China, 2011), the average annual wage of the employed people living in Beijing was 65,683 RMB (around 5,473 RMB monthly) and almost 35% of the employed people in Beijing had received education of college-level or above. Thus, it seems that participants in the current study had relatively higher levels of income and education as compared to the broader population in Beijing at the year of data collection.

One year after the Time 1 assessment, 223 of the 265 couples participated in the Time 2 assessment, resulting in an 84.15% retention rate. Two years after the Time 1 assessment, 200 of the 265 couples participated in the Time 3 assessment, resulting in a 75.47% retention rate. Independent samples (attrited vs. retained) t tests were conducted

on the variables of central interest that were available at Time 1. Among 8 pairs of comparisons, There were two significant differences between attrited husbands and retained husbands: $Mean_{\text{attrited}} = 3.73$, $SD_{\text{attrited}} = .91$, $Mean_{\text{retained}} = 4.09$, $SD_{\text{retained}} = .72$, $t = 2.85$, $p < .01$, Cohen's $d = .44$ for the relationship with fathers-in-law; and $Mean_{\text{attrited}} = 6.03$, $SD_{\text{attrited}} = 1.21$, $Mean_{\text{retained}} = 6.47$, $SD_{\text{retained}} = .92$, $t = 2.71$, $p < .01$, Cohen's $d = .41$ for marital satisfaction. The magnitude of this difference was between “small” and “medium”, based on Cohen's (1988) criteria. In addition, attrition analyses using multivariate analysis of variance were also conducted using all Time 1 variables of interest in the current study. The two significant differences between the retained and attrited partners based on the multivariate F s were consistent with the two found based on the independent samples t tests.

At Time 1, Time 2, and Time 3, data were collected using a series of self-report surveys. Both husbands and wives were invited to the lab at the study's home institution to participate in the study. For couples who could not come to the lab, research assistants collected the data by means of a home visit. First, the study was described in general terms by research assistants and the signed written informed consent form was obtained from each participating couple. Then, husbands and wives separately completed several measures. Each couple was paid 100 RMB (approximately US \$15) for their participation in the survey part of the study and received a small gift at each wave.

Measures

Measures used in the current study, except for the one assessing parental attitude and those measuring covariates, were originally developed for American couples. A team

of graduate students majoring in human development and family studies who are fluent in both Chinese and English first translated these measures into Mandarin, and then another team of bilingual graduate students back-translated them into English. Researchers worked with translators to revise items as needed until it was evident that the Chinese items had meanings equivalent to the English items. All Mandarin version measures were also sent out to professors with expertise in Chinese marriage studies for suggestions. I repeated this process until no new suggestions were made. Cronbach's α s for measures are reported in Table 6.

Parental attitude toward their adult children's marriage. At the first wave, parents' attitude toward their adult children's current marriage was assessed by two items asking adult married children "How do you think of your parents' attitude towards your current marriage?" and "How do you think of your parents-in-law's attitude towards your current marriage?" Response options for the two items ranged from 1 (*very satisfied*) to 5 (*very dissatisfied*). As such, parental attitude toward their adult children's marriage have two informants: spouses themselves and their partners. After reverse coding item values, the scores of spouses' reports of their own parents' attitude and the scores of their partners' reports of parents-in-law's attitude were averaged to index husbands' or wives' parental attitude (e.g., husbands' parents' attitude = [husbands' reported their parents' attitude + wives' reported their parents-in-law's attitude]/2) . Higher scores indicated higher levels of parental satisfaction with their adult children's current marriage.

In-law relationship quality. At the second wave of data collection, a 20-item measure modified from the "intimacy and tension" subscale in the Stryker Adjustment

Checklist (SAC; Stryker, 1955) was used to assess spouses' perceived in-law relationship quality. The items of the modified measure asked spouses to indicate the degree to which statements may apply to their relationship status with their parents-in-law on a 4-point scale ranging from 1 (*not at all*) to 4 (*very much*) (e.g., "We rarely argue or fight." "I cannot always tell him/her what I think." "I rarely call on him/her for help."). For each item, spouses were asked to rate their relationship status with mothers-in-law and fathers-in-law *separately*. Ten of the 20 items were negatively worded. After reverse coding the scores for these items, I calculated the mean scores of the 20 items and used the mean scores in analyses. Thus, higher scores indicated higher levels of relationship quality with mothers-in-law or fathers-in-law.

Marital satisfaction. The 6-item unidimensional Quality Marriage Index (QMI; Norton, 1983) was used to assess marital satisfaction across different waves of data collection. The first 5 items asked spouses to indicate their agreement with statements such as "My relationship with my partner makes me happy." on a 7-point scale ranging from 1 (*very strong disagreement*) to 7 (*very strong agreement*). The last item asked spouses to indicate how happy they are in their marriage when all things were considered on a 10-point scale from 1 (*very unhappy*) to 10 (*perfectly happy*). The score for the last item was re-scaled to a 7-point scale. Mean scores were calculated and used in analyses. Higher scores indicated higher levels of relationship satisfaction.

Critical covariates. Informed by prior studies (e.g., Bian et al., 1998; Golish, 2000; Logan & Bian, 2005; Norwood & Webb, 2006; Song & Zhang, 2012), a series of potential confounding variables were controlled as covariates in the current study,

including parents and adult children coresidence status, relationship quality between adult children and their own parents, adult children's personal beliefs/values regarding parents' power/roles in adult children's marriage, adult children's personal beliefs/values regarding the importance of parents as compared to spouses, and parents' and parents-in-law's interferences and involvements in their adult children's marital life.

Analytic Approach and Procedures

Structural equation modeling (SEM) via Mplus Version 7.11 (Muthén & Muthén, 1998-2012) was utilized to test the primary hypotheses in present study. Specifically, I tested several actor-partner interdependence mediation models (APIMeM; Ledermann et al., 2011) with latent difference scores (LDS; McArdle, 2009) across three annual waves of data (Maxwell et al., 2011), in which spouses' perceived parental attitude toward their adult children's marriage was linked to the *changes* in their own and their partners' relationship satisfaction during the early years of marriage through spouses' perceived relationship quality with their parents-in-law.

Although the ultimate goal of the present analyses was to estimate a model in which all four types of in-law relationships are simultaneously included, to more clearly demonstrate the importance of considering all four types of in-law relationships, I conducted the analyses following a three-step procedure: (a) a model with only relationship quality with mothers-in-law as mediators; (b) a model with only relationship quality with fathers-in-law as mediators; and (c) a model with both relationship quality with mothers-in-law and relationship quality with fathers-in-law as mediators.

The APIMeM not only can account for the possible interdependence in couple dyadic data, but also can produce the total effect, the direct effect, the overall indirect effect, and the specific indirect effect for each mediator when there are multiple ones in a single model, allowing researchers to pit various mediators against one another to examine their relative/unique influences on the outcomes. In this analytic framework, the total effect is analogous to the association between predictor and outcome without controlling for mediator, the direct effect represents the association between predictor and outcome with mediators in the model, and the indirect effect represents the product of the association between putative independent variable and mediator and the association between mediator and outcome (Kenny, 2012).

In terms of the traditional means of testing mediation, two separate models are analyzed: the first one considers a main effect from the predictor to the outcome, whereas the second one includes the mediator. However, this approach is not recommended when using SEM with latent variables (e.g., Iacobucci, Saldanha, & Deng, 2007). Furthermore, according to recommendations by leading scholars in mediation analyses research (Hayes, 2009; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Rucker, Preacher, Tormala, & Petty, 2011), the requirement for a significant total effect prior to examining indirect effects should be abandoned and a nonsignificant direct effect should not be viewed as a stopping rule in the search for additional mediators. Rather, if there are theoretical reasons, researchers should explore indirect effects regardless of the significance of the total or direct effect. It is important to avoid using the terms “full” or “partial” when describing mediation. Instead, emphasis should be placed upon the

significance and the magnitude of the indirect effects. However, reporting the significance of the total effect is still meaningful because it determines whether researchers can state that a total effect exists.

In the APIMeM, full mediation is inferred when the direct association between predictor and outcome is nonsignificant and accompanied by a significant indirect association between predictor and outcome via the mediator (Ledermann et al., 2011). Across all models in the present study, indirect effects were assessed using bootstrapping, a state-of-the-art technique for detecting indirect effects. Bootstrapping is a nonparametric method of estimating standard errors (*SEs*) and confidence intervals (*CI*s) that does not make assumptions about the sampling distribution of the indirect effect and provides more accurate Type I error rates and greater power for detecting indirect effects (Preacher & Hayes, 2008). In the current study, the bias-corrected bootstrapped *SEs* and *CI*s for indirect effects were based on 5,000 bootstrap resamples. Conclusions regarding mediation are based on whether or not the indirect pathways are statistically significant when examining 95% bias-corrected bootstrapped *CI*s around all the unstandardized indirect associations. In terms of the effect sizes, standardized indirect effects around .01 were interpreted as “small”, effects around .09 as “medium”, and effect around .25 as “large” (Kenny, 2012).

I examined the changes in spouses' reported marital satisfaction across measurement occasions via the second-order LDS models (McArdle, 2009). By integrating the advantages of the latent growth curve and the autoregressive analyses, the dual-change LDS model offers a rigorous and powerful way of capturing change in levels

of a variable while controlling for the effects of initial status of the variable on change over time. According to the standard LDS model application procedures, the two components of the dual-change model consist of: (a) a growth parameter reflecting the change in level of the variable across two measurement occasions and (b) an autoregressive component that estimates the effect of the initial status of the variable on itself at the subsequent measurement occasion.

Following the analytic recommendations for more rigorously testing mediational hypotheses (Maxwell et al., 2011), I conducted temporally ordered prospective analyses using assessments of putative predictors, mediators, and outcomes across three annual waves of data collection. This approach more appropriately addressed the temporality of relations among variables. However, it is important to note that although establishing significant associations among variables with such an approach does imply the temporal order, a demonstration of the temporal order between variables does not constitute evidence that one variable was caused by the other.

I evaluated the adequacy of models using the following indices (Kline, 2011): the Chi-Square statistic (χ^2), the comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR). Models with nonsignificant χ^2 values, CFI values $> .90$, RMSEA values $< .05$, and SRMR values $< .05$ were considered to have an acceptable fit. However, when the sample size is relatively large, a significant χ^2 should be expected for most models (Byrne, 2001). Lastly, missing values in the present study were primarily due to unavailability of

data from a specific wave, which were addressed by using the full information maximum likelihood estimation method (FIML) (Acock, 2005; Schafer & Graham, 2002).

Results

Bivariate correlations and descriptive statistics for study variables are shown in Table 6. At the bivariate level, spouses' perceived parental attitude toward their adult children's marriage, relationship quality with parents-in-law, and reports of marital satisfaction were positively interrelated. All use measures had adequate reliabilities.

Test of the Model with Relationship Quality with Mothers-in-law as Mediators

Parameter estimates, bootstrapped standard errors, and 95% confidence intervals for the total effects, the direct effects, the overall indirect effects, and the specific indirect effects in the model with the relationship quality with mother-in-law as mediators (see Figure 8) are reported in Table 7. This model had an adequate fit: $\chi^2 = 44.110$, $df = 31$, $p = .060$, CFI = .947, RMSEA = .040 with 90% CI [.000, .065], and SRMR = .031.

The significant indirect associations linking spouses' perceived parental attitude toward their adult children's current marriage (i.e., HPA and WPA) and the *changes* in spouses' reports of marital satisfaction (i.e., T₁-T₃ HMS changes and T₁-T₃ WMS changes) through spouses' perceived relationship quality with their mothers-in-law (i.e., T₂ HRML and T₂ WRML) included the following four pathways (see Table 7 and Figure 8): T₁ HPA → T₂ WRML → T₁-T₃ HMS changes ($B = .173$, $S.E. = .077$, 95% CI [.048 .358], $\beta = .087$); T₁ HPA → T₁-T₂ WRML → T₁-T₃ WMS changes ($B = .353$, $S.E. = .111$, 95% CI [.173, .623], $\beta = .151$); T₁ WPA → T₂ HRML → T₁-T₃ WMS changes (B

= .113, *S.E.* = .058, 95% *CI* [.028, .271], $\beta = .046$); and T_1 WPA $\rightarrow T_2$ HRML $\rightarrow T_1$ - T_3 HMS changes ($B = .117$, *S.E.* = .053, 95% *CI* [.032, .244], $\beta = .056$).

Test of the Model with Relationship Quality with Fathers-in-law as Mediators

Parameter estimates, bootstrapped standard errors, and 95% confidence intervals for the total effects, the direct effects, the overall indirect effects, and the specific indirect effects in the model with the relationship quality with father-in-law as mediators (see Figure 9) are presented in Table 8. This model had an adequate: $\chi^2 = 44.147$, $df = 29$, $p = .035$, CFI = .934, RMSEA = .044 with 90% CI [.012, .070], and SRMR = .031.

The significant indirect associations linking spouses' perceived parental attitude toward adult children's marriage (i.e., HPA and WPA) and the *changes* in spouses' reports of marital satisfaction (i.e., T_1 - T_3 HMS changes and T_1 - T_3 WMS changes) through spouses' perceived relationship quality with their fathers-in-law (i.e., T_2 HRFL and T_2 WRFL) included the following three pathways (see in Table 8 and Figure 9): T_1 HPA $\rightarrow T_2$ HRFL $\rightarrow T_1$ - T_3 HMS changes ($B = .095$, *S.E.* = .069, 95% *CI* [.002, .276], $\beta = .049$); T_1 HPA $\rightarrow T_2$ WRFL $\rightarrow T_1$ - T_3 HMS changes ($B = .107$, *S.E.* = .061, 95% *CI* [.017, .267], $\beta = .056$); and T_1 HPA $\rightarrow T_2$ WRFL $\rightarrow T_1$ - T_3 WMS changes ($B = .152$, *S.E.* = .080, 95% *CI* [.036, .364], $\beta = .064$).

Test of the Model with Relations with Fathers- and Mothers-in-law as Mediators

Parameter estimates, bootstrapped standard errors, and 95% confidence intervals for the total effects, direct effects, overall indirect effects, and specific indirect effects in the model with relationship quality with both mothers- and fathers-in-law as mediators

(see Figure 10) are reported in Table 9. This model had an adequate fit: $\chi^2 = 96.463$, $df = 64$, $p = .005$, CFI = .947, RMSEA = .044 with 90% CI [.024, .061], and SRMR = .044.

The significant indirect associations linking spouses' perceived parental attitudes toward their adult children's marriage and the *changes* in spouses' reports of marital satisfaction through spouses' perceived relationship quality with their parents-in-law include two pathways (see Table 9 and Figure 10): T₁ HPA → T₂ WRML → T₁-T₃ HMS changes ($B = .200$, $S.E. = .111$, 95% CI [.023, .476], $\beta = .100$), and T₁ HPA → T₂ WRML → T₁-T₃ WMS changes ($B = .464$, $S.E. = .159$, 95% CI [.210, .859], $\beta = .196$).

Discussion

Informed by the ecological model of marriage and a social network perspective, adopting a dyadic approach, and utilizing a three annual wave longitudinal design, the current study represents one of the first steps in examining how parental attitude toward their adult children's marriage and in-law relationship quality operate in conjunction to predict changes in adult children's marital satisfaction during the early years of Chinese marriage. In particular, this investigation goes beyond the (almost exclusive) emphasis on the relationship between daughters-in-law and mothers-in-law in prior literature by including both fathers-in-law and sons-in-law in analyses, which facilitates a greater specificity in our understanding of the association between in-law relationship quality and adult children's conjugal well-being.

The Particularly Salient Role of Husbands' Parents' Attitude

Based on findings of the present study, it seems that husbands' (as compared to wives') parents' attitude toward adult children's marriage play a more salient role in

predicting Chinese adult children's marital relationship development over time. This finding may reflect the very *patriarchal, patrilineal, and patrilocal norms* within Chinese marriages and families (Chen, 2005; Logan & Bian, 2005; Pimentel, 2000; Shek, 2006; Zhang, 2004). Historically, the ideal Chinese family structure has been "an extended joint household, in which all married sons, their wives, and their progeny lived with the unmarried siblings under the guidance of a patriarch" (Stacey, 1983, p. 31). Accordingly, there has been a strong preference for patrilocal coresidence after adult children's marriages in China (Lavelly & Ren, 1992; Watson, 1991; Zhang, 2004). Although there has been an increase in the number of couples coresiding with parents "nonnormatively" (e.g., living with wives' parents) and couples who are not coresident with parents (Chu et al., 2011; Pimentel & Liu, 2004), coresidence with husbands' parents has remained both numerically and symbolically significant in contemporary Chinese society (Zhang, 2004). For Chinese couples that do not live with husbands' parents within the same household, most of them still often remain closely tied to husbands' parents through frequent visits and mutual aid (Logan & Bian, 2005).

Moreover, adult married sons are culturally expected to provide primary support to their elder parents (but often via their wives). Indeed, after marrying into husbands' families, Chinese women often become more responsible for and engaged in taking care of their husbands, children, and elder parents-in-law on a routine basis (Cong & Silverstein, 2008; Liu, Dong, & Zheng, 2010). In contrast, married daughters' contacts with their natal families often become much less frequent, and they tend to provide supplementary support to their own parents primarily through emotional connections

(Kim, Cheng, Zarit, & Fingerman, 2015; Lin et al., 2003), although it has become more socially acceptable for (married) adult daughters to take care of their own parents in China during recent years (Shi, 2009; Xie & Zhu, 2009; Zhang, 2009).

In addition, it also is often husbands' rather than wives' parents who: (a) undertake almost all the financial cost of the marriage (e.g., buying the bridal chamber, preparing the betrothal gifts, and the wedding ceremony); (b) take care of the young grandchildren when both partners are busy; and (c) intervene in adult children's marital lives when conflicts arise (e.g., Chu, 2001; Wei & Zhang, 2011). Also considering that sons are generally viewed as the culturally legitimate figures who are responsible for continuing the family line in Chinese society, their parents, as compared to wives' parents, may feel more obligated to help children build families and also get involved in their children's marital lives (Das Gupta et al., 2003; Murphy, Tao, & Lu, 2011).

Taken all the aforementioned factors into consideration, it seems obvious that the patriarchal, patrilineal, and patrilocal traditions within Chinese families may imply that stronger connections and more intertwined lives are more likely to exist between parents and their married sons and daughters-in-law rather than between parents and their married daughters and sons-in-law. Thus, husbands' parental attitudes toward their sons' marriage therefore may hold more salient implications for the marital well-being of their sons and daughters-in-law by influencing all the processes noted above.

The Salient Role of the Relationship between Daughters- and Mothers-in-law

Furthermore, when spouses' relationship quality with mothers-in-law and fathers-in-law were considered simultaneously in a single model, husbands' parents' satisfaction

with their adult children's marriage was positively associated the *changes* in both husbands' and wives' marital satisfaction *only* via wives' perceived relationship quality with their mothers-in-law. Such findings provide evidence supporting (a) that different social network factors might be interdependent rather than independent with each other when exerting their influences on adult children's marital well-being, and (b) that in-law relationship quality could be one understudied critical pathway through which parents' attitude affects adult children's marital well-being. Furthermore, it is quite fascinating to find that the quality of the relationship between daughters-in-law and mothers-in-law could play a *unique* role in mediating the associations between husbands' parents' satisfaction with adult children's marriage and the changes in husbands' and wives' marital satisfaction *above and beyond* the other considered in-law relationships.

In general, the importance of the relationship between mothers-in-law and daughters-in-law may be partly due to the facts that as compared to men, women: (a) are generally more relationship-oriented (Gilligan, 1982); (b) have identities and moral development patterns that are more rooted in the ethics of caring for and connecting to others (Bilsker, Schiedel, & Marcia, 1988); and (c) are often the primary linkage in kinship structures (i.e., the kinkeepers) (McCann, 2012; Rosenthal, 1985). Thus, it may not be surprising that research based on Western samples has long considered the relationship between mothers-in-law and daughters-in-law as the most likely problematic tie among various in-law bonds that may hold implications for adult children's conjugal well-being (Cotterill, 1994; Fischer, 1983; Merrill, 2007; Rittenour & Kellas, 2015).

In particular, Chinese women often marry into the husbands' families as both a wife and a primary daily caregiver for their husbands, children, and parents-in-law (Liu et al., 2010; Pimentel, 2000; Whyte, 2004; Zhang, 2004). Furthermore, husbands' mothers often play a supervisor or monitor role in their adult children's marital lives. As an experienced hand and with the power granted by the Chinese traditional culture (e.g., filial piety), husbands' mothers may hold the beliefs that they are responsible for training their daughters-in-law to become "good" wives, mothers, and daughters-in-law (Gallin, 1986, 1994; Shih & Pyke, 2010; Stacey, 1983). Thus, they often tend to keep highly involved in married adult children's marital problems, housekeeping work, and childrearing labor via various pathways (e.g., providing childcare assistance, intervening in marital conflicts, and instructing and commenting on daughters-in-law' housework and parenting practices). As such, there seems to be a higher likelihood for stress, tension, and irritation between daughters-in-law and their mothers-in-law than between other in-law parties in Chinese families. The relationship between mothers-in-law and daughters-in-law in Chinese families thus may constitute a greater hazard to adult children's marital well-being than the other in-law relations (Song & Zhang, 2012; Wu et al., 2010).

Limitations and Directions for Future Research

Several limitations of the present study and possible avenues for future inquiries should be noted. First, the present study was based on a relatively small sample of Chinese couples who were in the early years of marriage and living in economically developed urban areas. Furthermore, partners in these couples had relatively higher levels of SES than did the broader population in the recruitment areas as compared to the census

data from the year of data collection, and the sampling process was not probability based. Thus, the present findings should be cautiously generalized to Chinese couples who are in other marital stages, living in rural areas, and have lower levels of SES. Research with larger and more diverse samples is thus warranted.

Second, although China is well on the collectivist side of the individualism-collectivism continuum, there may be considerable within-culture variation in spouses' orientations toward the collectivistic cultural traditions (Green, Deschamps, & Paez, 2005), which may play crucial roles in determining how they assign meanings to familial and marital relations. I did not assess these variables, but future research would benefit from exploring if the associations examined in the present study vary as functions of these variables. For example, the effects of parental attitude and in-law relations on adult children's marital well-being may be more salient for adult children with higher levels of endorsement of collectivistic traditions than for those with lower levels of endorsement of collectivistic traditions. In addition, several structural factors that may contextualize the associations among parental attitude, in-law relations, and adult children's marital well-being should be considered in future research, including coresidence status, living proximity, frequency of contact, and exchange of support (Logan & Bian, 2005).

Third, parental attitude toward their adult children's marriage and in-law relationship quality in the current study were reported only by adult children. Although prior research suggests that spouses' own perceptions of support or interference from network members may be better at predicting relationship outcomes than network members' reports (Felmlee, 2001; Sprecher, 2011), I recommend that future research

assess these constructs from both adult children and their parents or parents-in-law. This not only allows researchers to more adequately measure constructs, but also makes it possible to examine how the discrepancy/consistency or interactions between attitudes of different network members may influence adult children's marital well-being. For example, the negative effects of some network members' disapproval might be buffered by the positive effects of some other network members' approval, and the worst situation for couples might be entering marriage without anyone's blessing (Sinclair & Ellithorpe, 2014). In addition, the shared informant variance bias should be reduced by utilizing multiple informant designs.

Fourth, although the present study went beyond the almost exclusive emphasis on the relationship between daughters-in-law and mothers-in-law in prior literature by including both fathers-in-law and sons-in-law in analyses, parental attitude was assessed only in a global way without specifying the particular parent, which precludes getting increased specificity in the associations among variables. However, considering the power asymmetry and the highly unbalanced engagement in childcare work between fathers and mothers within Chinese families, the influences of paternal attitudes and maternal attitudes on their adult children's marital well-being may be different (e.g., Shu, Zhu, & Zhang, 2013). Moreover, it also might be interesting to explore if there is an interaction between paternal attitude and maternal attitudes when they are inconsistent with each other. In addition, the traditional paternal figure in Chinese families is often stern, reserved, and taciturn, whereas the maternal figure is often characterized as affectionate, loving, and highly engaged in children's daily lives (Ho, 1989). Also

considering that Chinese culture has long-standing patriarchal traditions emphasizing that women should subordinate to men in marriages and families (Pimentel, 2000), Chinese fathers may exert influences on adult children's marriages through Chinese mothers.

Fifth, there have been a variety of ways to date that researchers approach conceptualizing and measuring parents' attitude toward their adult children's marriage or spouse (e.g., approval or disapproval, rejection or acceptance, and satisfaction or dissatisfaction) (Felmlee, 2001; Mikucki-Enyart & Caughlin, 2015; Morr Serewicz & Canary, 2008). In the present study, I assessed parents' satisfaction with their adult children's current marriage, as it may represent *the overall sentiments* that parents have for their adult children's current marriage. Although different indicators of parents' attitudes toward their adult children's marriage or spouse are likely to be highly interrelated, future research may benefit from assessing multiple indicators of this construct simultaneously and examining their relative and unique roles in predicting adult children's conjugal outcomes.

Sixth, I acknowledge that using the single-item measure when assessing parental attitudes may diminish the credibility of the present findings. However, prior research has suggested that single-item measures are effective and more favorable in some respects than multiple-item measures (e.g., greater face validity, being understood more easily and conducted more efficiently, and more interpretable scores) and often have comparable reliability and validity with multiple-item measures (Robins, Hendin, & Trzesniewski, 2001; Wanous, Reichers, & Hudy, 1997). In particular, single-item measures have been

widely used in prior research to assess parents' attitude toward adult children's marriage or close relationships and yielded meaningful findings (e.g., Felmlee, 2001).

Lastly, parental rejection or acceptance of adult children's spouses may be a turning point for the relationships between parents and adult children (Golish, 2000), and the relationships between parents and adult children also may influence the in-law relationships and determine the extent to which parental attitudes may affect their adult children's marital relationships. For example, Chinese husbands often encounter dilemmas in which they have to be mediators or conciliators when conflicts arise between their mothers-in-law and wives (Song & Zhang, 2012). When relationships between sons and mothers are highly valued and bonded, husbands may be likely to take sides with their mothers rather than wives, which may be quite harmful for their marital ties.

Conclusion

Based on three annual waves of data obtained from Chinese couples during the very early years of marriage and utilizing the rigorous approach to test dyadic mediating pathways (i.e., the APIMeM with LDS and the bootstrapping technique for detecting indirect effects), findings of the present study indicate that in-law relationship quality can be one important mechanism through which parental attitude affect their adult children's marital well-being, and that husbands' parental attitude and the relationship between daughter-in-law and mother-in-law may play particularly crucial roles in determining the development of Chinese couples' marital well-being in the first few years of marriage. Findings of the present study also highlight the importance of: (a) representing families as configurations of interdependent relationships organized across multiple households

(Milardo, 2010; Widmer, 2010); (b) going beyond consideration of dyads to address triads when examining marital relationships (Duck, Foley, & Kirkpatrick, 2006); and (c) examining couple relationships from an ecological, social network perspective (Huston, 2000; Sprecher, 2011). In addition, from a practical perspective, considering the steep decline of marital satisfaction and the high divorce rate during the early transitional years of marriage and the task of forming a separate and autonomous family while also maintaining connections to families-of-origin in this stage, the current findings may hold critical implications for the development of effective marital intervention programs.

CHAPTER V

GENERAL DISCUSSION AND CONCLUSION

The present body of work is among the very first steps in understanding marital relationship well-being and its determinants among Chinese couples. Findings of the three studies included the present body of work have clearly demonstrated how factors deriving from various levels of influences may interact with each other to account for the considerable variation in marital well-being among Chinese young couples. In particular, by investigating the conjugal relationship experiences in a group of couples that has been historically underrepresented in prior marriage research, the present studies may contribute to promoting cultural sensitivity in marriage and family research, and to developing the “local” theories for understanding marriage issues in Asian countries.

The importance of the present body of work also is particularly highlighted by the *unprecedented social, legal, and economic changes that Chinese society has been experiencing during the past few decades* (e.g., Davis, 2014; Ji, 2015; Raymo et al., 2015; Shek, 2006; Wang & Fong, 2009; Xu & Xia, 2014). The passing of *new marriage laws* acknowledged individuals’ freedom and interests in marriages, especially for women (Davis, 2014). The “*Reform and Opening-Up Policy*” has considerably increased exchanges between China and Western countries. The Western marital culture characterized by emphases on intimacy, happiness, freedom, personal fulfillment, and gender equality has been introduced into China (Xu et al., 2007). The “*One-Child Policy*”

has changed the structure of Chinese families. The vast majority of Chinese married youth were born after the introduction of this policy. Their upbringing experiences are often characterized by indulgence, which may contribute to their emphases on self-interests in interpersonal relations (Wang & Fong, 2009).

It seems warranted to speculate that the tenor of close relationships in contemporary Chinese society is becoming increasingly individualistic in which each partner in a relationship tend to maximize self-interests and enhance personal happiness (Amato, 2009). By making Chinese people's marriage and family related values and beliefs more Westernized, the reforms that China has experienced are probably changing the micro-level dynamics within Chinese marriages and families. This may be especially true for Chinese urban young couples (as was the case for the sample used in the present studies) because they are considered to be a generation confronted with social changes that generate novel values and behaviors. As such, the present body of work may contribute to *the drawing of the picture of Chinese couple relationships during a particular historical time when China is just at the "crossroads."* Furthermore, the modernization and globalization processes ongoing in China also provide opportunities with researchers to examine cultural change issues regarding marriage and family. It may be promising to conduct studies employing *multiple-cohort, longitudinal designs* to directly examine *how the micro-level factors within marriages interact with the macro-level factors outside of marriages to shape couple relationship development trajectories.*

Although several micro-level and macro-level explanatory mechanisms (e.g., Chinese traditional cultural values regarding marriage and family and the social changes

China had experienced during the past few decades) were proposed for making sense of the associations among the studied variables in the present body of work, direct data on cultural trends in China are not available in the utilized dataset and it is not clear whether the constructs assessed in the current studies are truly “unique” to Chinese culture or not. In other words, although Chinese cultural traditions and social changes were discussed in the current studies, they were *simply used as lenses or perspectives to frame the present studies, contextualize the present hypotheses, and/or interpret the present findings*. As such, theoretical development in this field, especially developing the “local” or “indigenous” theories for understanding marriage issues in China, requires Chinese marriage researchers to *deduce, explicate, assess, and test constructs and/or hypotheses from Chinese culture more deliberately, explicitly and systematically* (Bermúdez et al., 2016; Demo & Buehler, 2013; Hwang, 2005; Ji, 2015). Moreover, matching Chinese sample with a group of Western couples (i.e., a “real” cross-cultural comparison design) also may be helpful for identifying marital factors that are particularly susceptible to cultural influences, factors that are most likely to vary across cultures, and factors that are truly *unique* to couples from a specific cultural context (e.g., Williamson, et al., 2012).

Lastly, future research also may benefit from *going beyond the “average” Chinese marital relationships and exploring the understudied heterogeneity inherent within Chinese marital relationships* (e.g., Cao et al., 2015; Ji & Yeung, 2014). Although China is well on the collectivist side of the individualism–collectivism scale, there could be considerable within-culture variation in spouses’ orientations toward Chinese traditions. Such variability may play crucial roles in shaping how spouses assign

meanings to their own and partners' behaviors and regulate their interactions in marriage. In addition, *some minority or marginalized groups of couples within the Chinese society* merit much more attention in future research, including couples living in the underdeveloped rural areas (e.g., Lau, Wang, Cheng, Kim, Yang, & Tsui, 2008), the rural-urban inter-marriage (e.g., Lui, 2016), couples living with wives' parents (i.e., nonnormative coresidence) (e.g., Pimentel & Liu, 2004), couples who lost their single child (e.g., Zhang & Liu, 2014), and long-distance couples, especially those in which wives are left-behind in rural areas by their husbands immigrating into the urban areas for better jobs and salaries (e.g., Wu & Ye, 2016).

It also is fascinating to *systematically compare the marital relationship experiences of couples living in the Chinese mainland with those of couples living in some special Chinese regions (i.e., Hong Kong, Taiwan, and Macau)*. Despite their shared roots in Chinese culture, due to some historical issues, a series of critical differences exist between these areas and the Chinese mainland, including political institutions, economic development level, Chinese traditional culture preservation status, and so on. Such differences likely influence the macro-level beliefs and values regarding marriage and family and also the micro-level dynamics within marriage and family. Thus, future studies will benefit from recruiting couples from Chinese mainland, from special Chinese regions (i.e., Hong Kong, Taiwan, and Macau), and also from Western countries, and conducting meaningful comparisons between these groups of couples to address important research questions (e.g., Davis & Friedman, 2014; Xie & Zhu, 2009).

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APPENDIX A
TABLES AND FIGURES

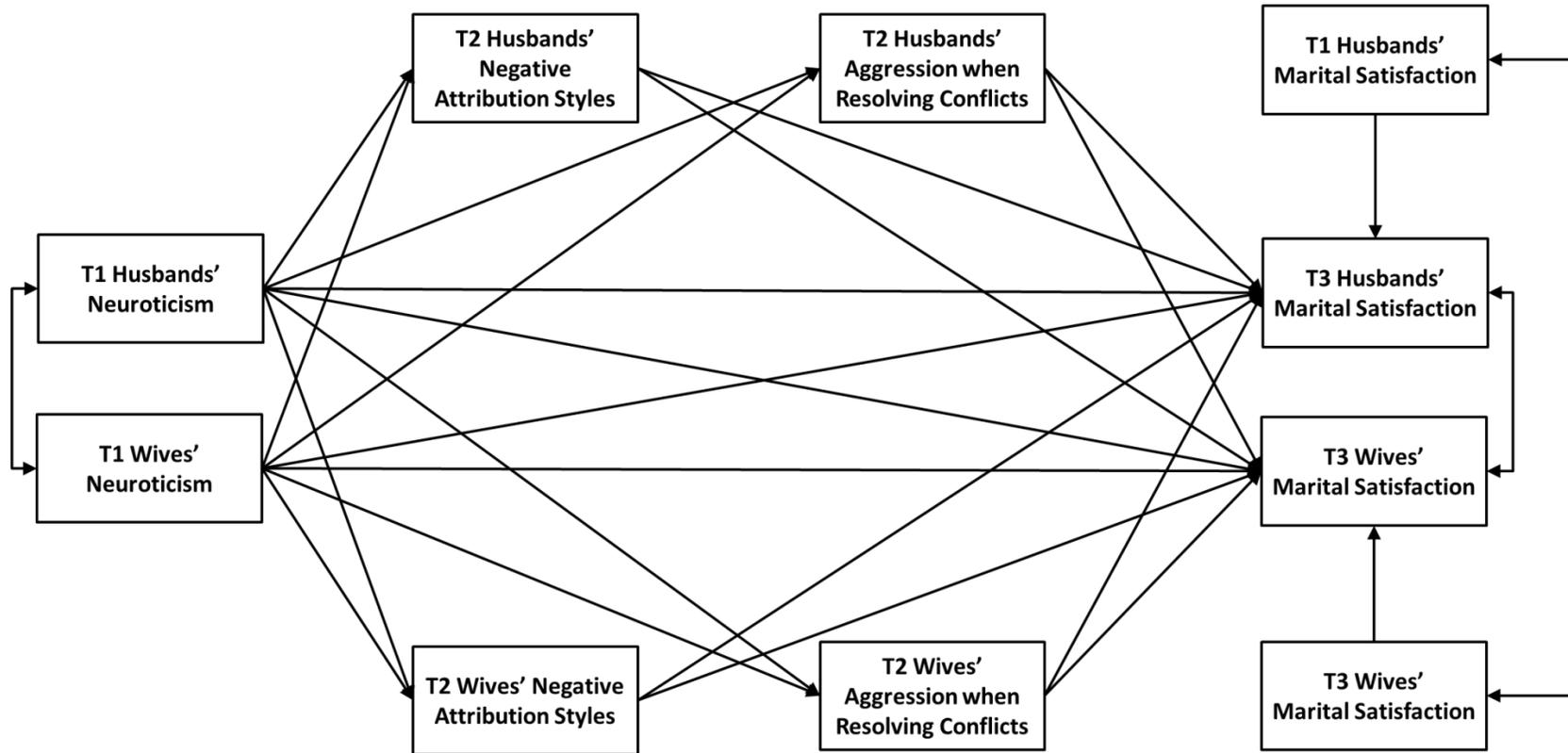


Figure 1. The Conceptual Model for Study 1: The Association between Neuroticism and Change in Marital Satisfaction among Chinese Couples during the Early Years of Marriage: The Mediating Roles of Marital Attribution and Marital Aggression.

Note. T₁ = Time point 1, T₂ = Time point 2, T₃ = Time point 3

Table 1. Descriptive Statistics, Correlations, and Reliabilities for the Study Variables in Study 1.

Variables	1	2	3	4	5	6	7	8	9	10
1. T₁ HNEO	-									
2. T₁ WNEO	-.001	-								
3. T₂ HATT	.127†	.079	-							
4. T₂ WATT	.018	.247***	.134†	-						
5. T₂ HAGG	.312***	.120†	.436***	.160*	-					
6. T₂ WAGG	.051	.286***	.210**	.197**	.327***	-				
7. T₁ HMS	-.209**	-.101	-.146*	-.018	-.111	-.022	-			
8. T₁ WMS	-.140*	-.349***	-.106	-.234***	-.116†	-.171*	.505***	-		
9. T₃ HMS	-.208**	-.154*	-.364***	-.235**	-.289***	-.245***	.415***	.376***	-	
10. T₃ WMS	-.107	-.274***	-.243**	-.288***	-.143*	-.277***	.270***	.328***	.566***	-
<i>M</i>	2.471	2.702	3.198	3.566	1.487	1.734	6.733	6.657	6.445	6.315
<i>SD</i>	.620	.710	1.145	.999	.401	.559	.961	1.023	1.112	1.293
<i>Cronbach's α</i>	.833	.873	.831	.787	.883	.911	.926	.949	.957	.972

Note. T₁ = Time point 1, T₂ = Time point 2, T₃ = Time point 3, H = Husbands, W = Wives, NEO = Neuroticism, ATT = Attribution, AGG = Aggression, MS = Marital Satisfaction. † $p < .10$, * $p < .05$, ** $p < .01$, and *** $p < .001$ (2-tailed).

Table 2. Total, Direct, Overall Indirect, and Specific Indirect Effects for Different Mediators in Study 1.

Effects	Bias-Corrected Bootstrapped Estimates		
	Unstandardized	95% CI	Standardized
<i>T₁ H Neuroticism → T₁ to T₃ Chang in H Marital Satisfaction</i>			
Total Effect	-0.235	[-.474, -.039]	-0.132
Direct Effect	-0.139	[-.359, .070]	-0.078
Overall Indirect Effect	-0.097	[-.220, -.001]	-0.054
Specific Indirect Effects	<i>T₁ HNEO → T₂ HATT → T₁-T₃ Change in HMS</i>	[-.139, -.003]	-0.028
	<i>T₁ HNEO → T₂ HAGG → T₁-T₃ Change in HMS</i>	[-.120, .038]	-0.018
	<i>T₁ HNEO → T₂ WATT → T₁-T₃ Change in HMS</i>	[-.046, .036]	-0.002
	<i>T₁ HNEO → T₂ WAGG → T₁-T₃ Change in HMS</i>	[-.073, .012]	-0.006
<i>T₁ H Neuroticism → T₁ to T₃ Chang in W Marital Satisfaction</i>			
Total Effect	-0.181	[-.439, .040]	-0.087
Direct Effect	-0.170	[-.430, .050]	-0.082
Overall Indirect Effect	-0.011	[-.136, .108]	-0.005
Specific Indirect Effects	<i>T₁ HNEO → T₂ HATT → T₁-T₃ Change in WMS</i>	[-.128, .000]	-0.018
	<i>T₁ HNEO → T₂ HAGG → T₁-T₃ Change in WMS</i>	[-.048, .150]	.024
	<i>T₁ HNEO → T₂ WATT → T₁-T₃ Change in WMS</i>	[-.058, .039]	-0.002
	<i>T₁ HNEO → T₂ WAGG → T₁-T₃ Change in WMS</i>	[-.103, .024]	-0.009
<i>T₁ W Neuroticism → T₁ to T₃ Chang in W Marital Satisfaction</i>			
Total Effect	-0.357	[-.609, -.126]	-0.197
Direct Effect	-0.178	[-.430, .074]	-0.099
Overall Indirect Effect	-0.178	[-.320, -.079]	-0.098
Specific Indirect Effects	<i>T₁ WNEO → T₂ WATT → T₁-T₃ Change in WMS</i>	[-.188, -.015]	-0.043
	<i>T₁ WNEO → T₂ WAGG → T₁-T₃ Change in WMS</i>	[-.203, -.022]	-0.052
	<i>T₁ WNEO → T₂ HATT → T₁-T₃ Change in WMS</i>	[-.100, .008]	-0.012
	<i>T₁ WNEO → T₂ HAGG → T₁-T₃ Change in WMS</i>	[-.012, .088]	.009
<i>T₁ W Neuroticism → T₁ to T₃ Chang in H Marital Satisfaction</i>			
Total Effect	-0.171	[-.368, .020]	-0.110
Direct Effect	-0.004	[-.195, .180]	-0.002
Overall Indirect Effect	-0.167	[-.291, -.077]	-0.107
Specific Indirect Effects	<i>T₁ WNEO → T₂ WATT → T₁-T₃ Change in HMS</i>	[-.167, -.021]	-0.046
	<i>T₁ WNEO → T₂ WAGG → T₁-T₃ Change in HMS</i>	[-.138, -.002]	-0.035
	<i>T₁ WNEO → T₂ HATT → T₁-T₃ Change in HMS</i>	[-.102, .014]	-0.019
	<i>T₁ WNEO → T₂ HAGG → T₁-T₃ Change in HMS</i>	[-.057, .009]	-0.007

Note. Indirect pathways reported in bold were statistically significant based on the 95% bias-corrected bootstrapped CIs. T₁ = Time point 1, T₂ = Time point 2, T₃ = Time point 3, H = Husbands, W = Wives, NEO = Neuroticism, ATT = Attribution, AGG = Aggression, MS = Marital Satisfaction.

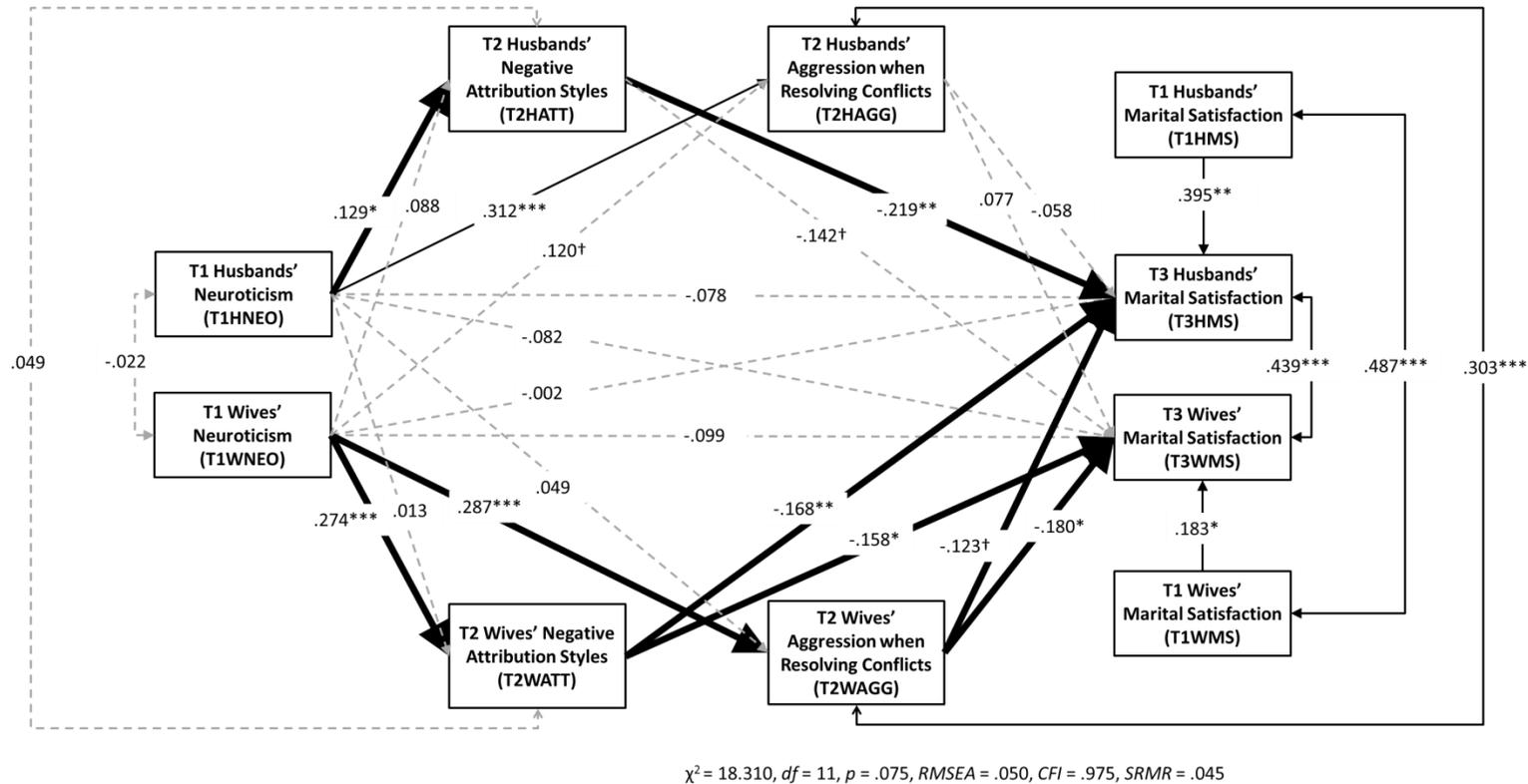


Figure 2. The Model Results for Study 1: The Association between Neuroticism and Change in Marital Satisfaction among Chinese Couples during the Early Years of Marriage: The Mediating Roles of Marital Attribution and Marital Aggression.

Note. All estimated parameters are standardized. Measurement errors and residuals are not shown to simplify presentation. Also for clarity, pathways with parameter estimates that were not statistically significant at $p < .05$ (2-tailed) are depicted in gray, dash lines. The bolded indirect pathways were statistically significant based on the 95% bias-corrected bootstrapped CIs around the unstandardized indirect associations. T₁ = Time point 1, T₂ = Time point 2, T₃ = Time point 3, H = Husbands, W = Wives, NEO = Neuroticism, ATT = Attribution, AGG = Aggression, MS = Marital Satisfaction. † $p < .10$, * $p < .05$, and ** $p < .01$ (2-tailed).

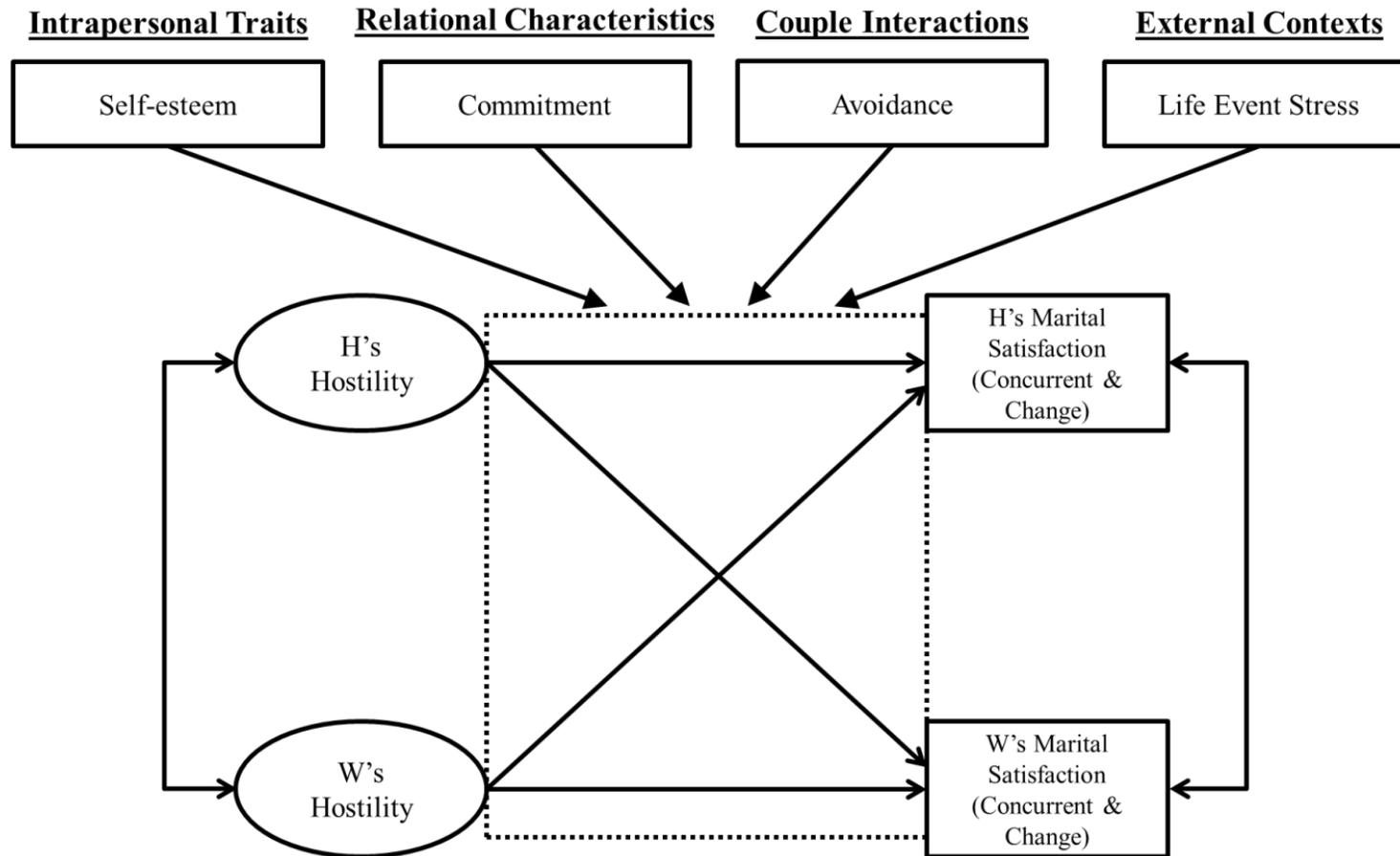


Figure 3. The Conceptual Model for Study 2: The Association between Marital Hostility and Marital Satisfaction among Chinese Couples during the Early Years of Marriage: A Dyadic, Multilevel, and Contextual Perspective.

Note. H = Husbands, W = Wives.

Table 3. Descriptive Statistics, Correlations, and Reliabilities for the Study Variables in Study 2.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	M (W)	SD (W)	ICCs or α s (W)
1. HS_HSS T1	.469***	.417***	.502***	.390***	-.062	-.098	-.018	-.203*	-.040	-.132	-.033	-.142	1.92	1.53	.88
2. HS_WSS T1	.273**	.642***	.417***	.363***	.070	-.099	.093	-.123	-.182†	-.020	-.192†	-.128	2.02	1.66	.84
3. HS_HPS T1	.266**	.461***	.496***	.716***	-.029	-.139	.022	.008	-.141	-.074	-.335**	-.247*	2.77	2.01	.83
4. HS_WPS T1	.183†	.349***	.578***	.380***	-.007	-.138	-.082	.000	-.112	-.179	-.375**	-.327**	2.67	1.83	.88
5. SELF T1	.143	-.121	-.004	-.024	.141	.350***	-.142	-.402***	.257**	.293**	.237*	.350**	3.43	.45	.85
6. COM T1	.016	-.241*	-.326**	-.354***	.213*	.396***	-.135	-.467***	.528***	.392***	.394***	.454***	4.04	.49	.87
7. AVO T1	.062	.045	.061	.030	-.187†	-.315**	.079	.389***	-.236*	-.086	-.183	-.111	2.26	.64	.74
8. LES T1	.030	.149	.261**	.300**	-.148	-.398***	.251**	.095	-.346***	-.248*	-.272*	-.285**	1.47	.22	.84
9. SAT T1	.018	-.224*	-.325**	-.366***	.161†	.520***	-.331**	-.390***	.410***	.395***	.225*	.329**	6.06	1.18	.96
10. SAT T2	.090	.076	.012	-.069	.047	.132	-.180†	-.245*	.533***	.187†	.289*	.836***	5.99	1.27	.97
11. SAT T3	-.114	-.091	-.132	-.363***	.239*	.594***	-.352**	-.461***	.431***	.298**	.456***	.813***	6.07	1.26	.97
12. SAT T2 & 3	.007	-.005	-.038	-.205†	.136	.373***	-.284***	-.405***	.562***	.868***	.778***	.479***	6.01	1.08	.92
M (H)	1.43	1.46	1.99	1.89	3.44	4.11	2.42	1.47	6.23	5.93	6.17	6.01			
SD (H)	1.06	.98	1.64	1.59	.47	.42	.66	.24	1.02	1.22	1.00	.99			
ICCs or α s (H)	.81	.80	.91	.84	.86	.83	.77	.88	.95	.96	.94	.91			

Note. Correlations among variables for husbands and for wives are presented below the diagonal and above the diagonal, respectively. The correlations between husbands and wives are presented on the diagonal in bold. Descriptive statistics of each variable and reliabilities of each measure are reported in the last three rows for husbands and in the last three columns for wives. The interrater reliabilities for the observed variables (i.e., HS_HSS T1, HS_HSS T1, HS_HPS T, and HS_WPS T1) are assessed by calculating single-item intraclass correlation coefficients (ICCs), and the scale reliabilities for the self-report questionnaire variables are assessed by calculating Cronbach's α s. HS_HSS = hostility in the social support contexts focused on problems initiated by husbands; HS_WSS = hostility in the social support contexts focused on problems initiated by wives; HS_HPS = hostility in the problem solving contexts focused on problems initiated by husbands; and HS_WPS = hostility in the problem solving contexts focused on problems initiated by wives. SAT = marital satisfaction, SELF = self-esteem, COM = commitment, AVO = avoidance, LES = life event stress, H = husbands, W = wives, T1 = time point 1, T2 = time point 2, and T3 = time point 3. † $p < .10$, * $p < .05$, ** $p < .01$, and *** $p < .001$ (2-tailed).

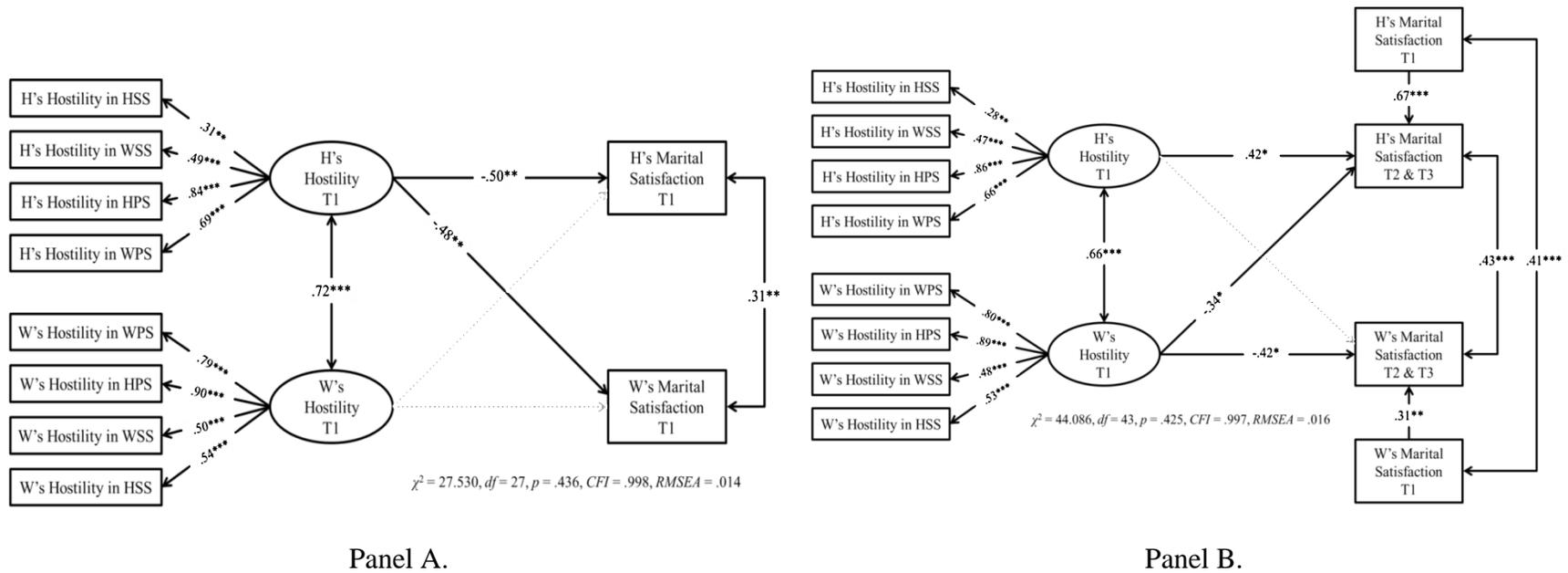


Figure 4. The Concurrent (Panel A) and Longitudinal (Panel B) Associations between Marital Hostility and Marital Satisfaction.

Note. All estimated parameters are standardized. Measurement errors and residuals are not shown to simplify presentation. Also for clarity, parameter estimates for pathways that were not statistically significant at $p < .05$ (two-tailed) are not shown in the figure and such pathways are depicted in gray, dash lines. HSS = the social support contexts focused on problems initiated by husbands; WSS = the social support contexts focused on problems initiated by wives; HPS = the problem solving contexts focused on problems initiated by husbands; and WPS = the problem solving contexts focused on problems initiated by wives. H = husbands, W = wives, T1 = time point 1, T2 = time point 2, and T3 = time point 3. * $p < .05$, ** $p < .01$, and *** $p < .001$ (2-tailed).

Table 4. Moderating Effects of T1 Spouses' OWN Factors on the Associations between Marital Hostility and Satisfaction.

#	Models			Model Adequacy					Significant Product Pathway	<i>b</i>	<i>S.E.</i>	β	Simple Slope (Figure 5)
	Predictor	Outcome	Moderator	χ^2	<i>df</i>	<i>p</i>	<i>CFI</i>	<i>RMSEA</i>					
1	T1 HS	T1 SAT	T1 SELF (OWN)	7.680	6	.263	.985	.052	T1 H HS × T1H SELF → T1 H SAT	.550*	.224	.222	Panel A
									T1 H HS × T1 H SELF → T1 W SAT	.705**	.251	.247	Panel B
2	T1 HS	T1 SAT	T1 COM (OWN)	4.077	3	.253	.995	.058	T1 H HS × T1H COM → T1 H SAT	.595***	.158	.336	Panel C
									T1 H HS × T1 H COM → T1 W SAT	.546**	.171	.268	Panel D
3	T1 HS	T1 SAT	T1 AVO (WON)	2.683	6	.847	1.00	.000	T1 H HS × T1 H AVO → T1 W SAT	-.487**	.169	-.263	Panel E
									T1 W HS × T1 W AVO → T1 H SAT	-.296**	.104	-.235	Panel F
4	T1 HS	T1 SAT	T1 LES (OWN)	8.508	6	.203	.983	.063	T1 H HS × T1 H LES → T1 H SAT	-.786*	.341	-.214	Panel G
									T1 H HS × T1 H LES → T1 W SAT	-1.149**	.387	-.270	Panel H
									T1 W HS × T1 W LES → T1 H SAT	-.600†	.357	-.149	Panel I
5	T1 HS	T1 → T2 & T3 SAT Change	T1 SELF (OWN)	16.751	12	.159	.974	.061	T1 H HS × T1 H SELF → H SAT Change	.566**	.203	.240	Panel J
6	T1 HS	T1 → T2 & T3 SAT Change	T1 COM (OWN)	10.948	8	.205	.990	.059	—	—	—	—	—
7	T1 HS	T1 → T2 & T3 SAT Change	T1 AVO (OWN)	4.847	9	.847	1.00	.000	T1 W HS × T1 W AVO → W SAT Change	-.250*	.127	-.193	Panel K
8	T1 HS	T1 → T2 & T3 SAT Change	T1 LES (OWN)	17.213	13	.190	.981	.056	T1 W HS × T1 W LES → W SAT Change	-1.1.82**	.420	-.270	Panel L

Note. To simplify presentation, only the estimated parameters for significant product pathways are reported. HS = hostility, SAT = marital satisfaction, SELF = self-esteem, COM = commitment, AVO = avoidance, LES = life event stress, H = husbands, W = wives, T1 = time point 1, T2 = time point 2, T3 = time point 3. † $p < .10$, * $p < .05$, ** $p < .01$, and *** $p < .001$ (2-tailed).

Table 5. Moderating Effects of T1 Spouses' PARTNERS' Factors on the Associations between Marital Hostility and Satisfaction.

#	Predictor	Models		Model Adequacy					Significant Product Pathway	<i>b</i>	<i>S.E.</i>	β	Simple Slope (Figure 6)
		Outcome	Moderator	χ^2	<i>df</i>	<i>p</i>	<i>CFI</i>	<i>RMSEA</i>					
1	T1 HS	T1 SAT	T1 SELF (PARTNER)	4.218	6	.647	1.00	.000	T1 W HS × T1 H SELF → T1 W SAT	.539**	.180	.261	Panel A
									T1 W HS × T1 H SELF → T1 H SAT	.560***	.156	.313	Panel B
2	T1 HS	T1 SAT	T1 COM (PARTNER)	.992	2	.609	1.00	.000	T1 W HS × T1 H COM → T1 W SAT	.231†	.130	.147	Panel C
									T1 W HS × T1 H COM → T1 H SAT	.350**	.119	.257	Panel D
3	T1 HS	T1 SAT	T1 AVO (PARTNER)	2.577	6	.860	1.00	.000	T1 W HS × T1 H AVO → T1 W SAT	-.228†	.123	-.166	Panel E
									T1 H HS × T1 W AVO → T1 H SAT	-.368*	.154	-.202	Panel F
4	T1 HS	T1 SAT	T1 LES (PARTNER)	4.474	4	.317	.995	.042	T1 W HS × T1 H LES → T1 W SAT	-1.120***	.302	-.313	Panel G
									T1 W HS × T1 H LES → T1 H SAT	-.824**	.267	-.266	Panel H
5	T1 HS	T1 → T2 & T3 SAT Change	T1 SELF (PARTNER)	4.730	8	.786	1.00	.000	—	—	—	—	
6	T1 HS	T1 → T2 & T3 SAT Change	T1 COM (PARTNER)	9.073	7	.247	.993	.053	T1 H HS × T1 W COM → H SAT Change	.305†	.164	.174	Panel I
7	T1 HS	T1 → T2 & T3 SAT Change	T1 AVO (PARTNER)	12.833	12	.378	.995	.026	T1 W HS × T1 H AVO → W SAT Change	-.224†	.126	-.181	Panel J
8	T1 HS	T1 → T2 & T3 SAT Change	T1 LES (PARTNER)	16.653	10	.082	.968	.080	—	—	—	—	

Note. To simplify presentation, only the estimated parameters for significant product pathways are reported. HS = hostility, SAT = marital satisfaction, SELF = self-esteem, COM = commitment, AVO = avoidance, LES = life event stress, H = husbands, W = wives, T1 = time point 1, T2 = time point 2, T3 = time point 3. † $p < .10$, * $p < .05$, ** $p < .01$, and *** $p < .001$ (2-tailed).

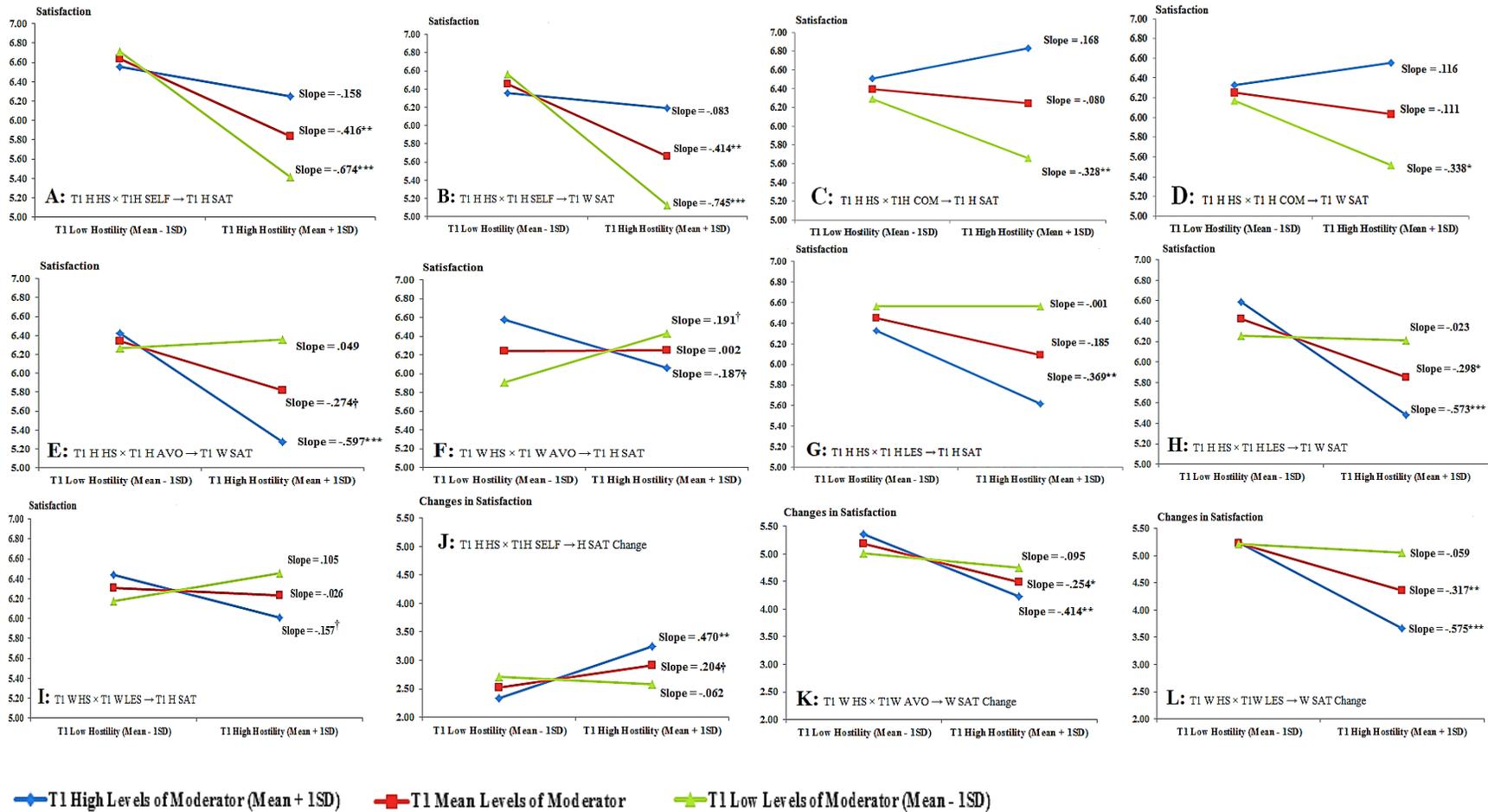


Figure 5. Illustrations of the Moderating Effects of the T1 OWN Factors on the Concurrent (Panel A-I) and the Longitudinal (Panel J-L) Associations between Marital Hostility and Marital Satisfaction.

Note. HS = hostility, SAT = marital satisfaction, SELF = self-esteem, COM = commitment, AVO = avoidance, LES = life event stress, H = husbands, W = wives, T1 = time point 1. † $p < .10$, * $p < .05$, ** $p < .01$, and *** $p < .001$ (2-tailed).

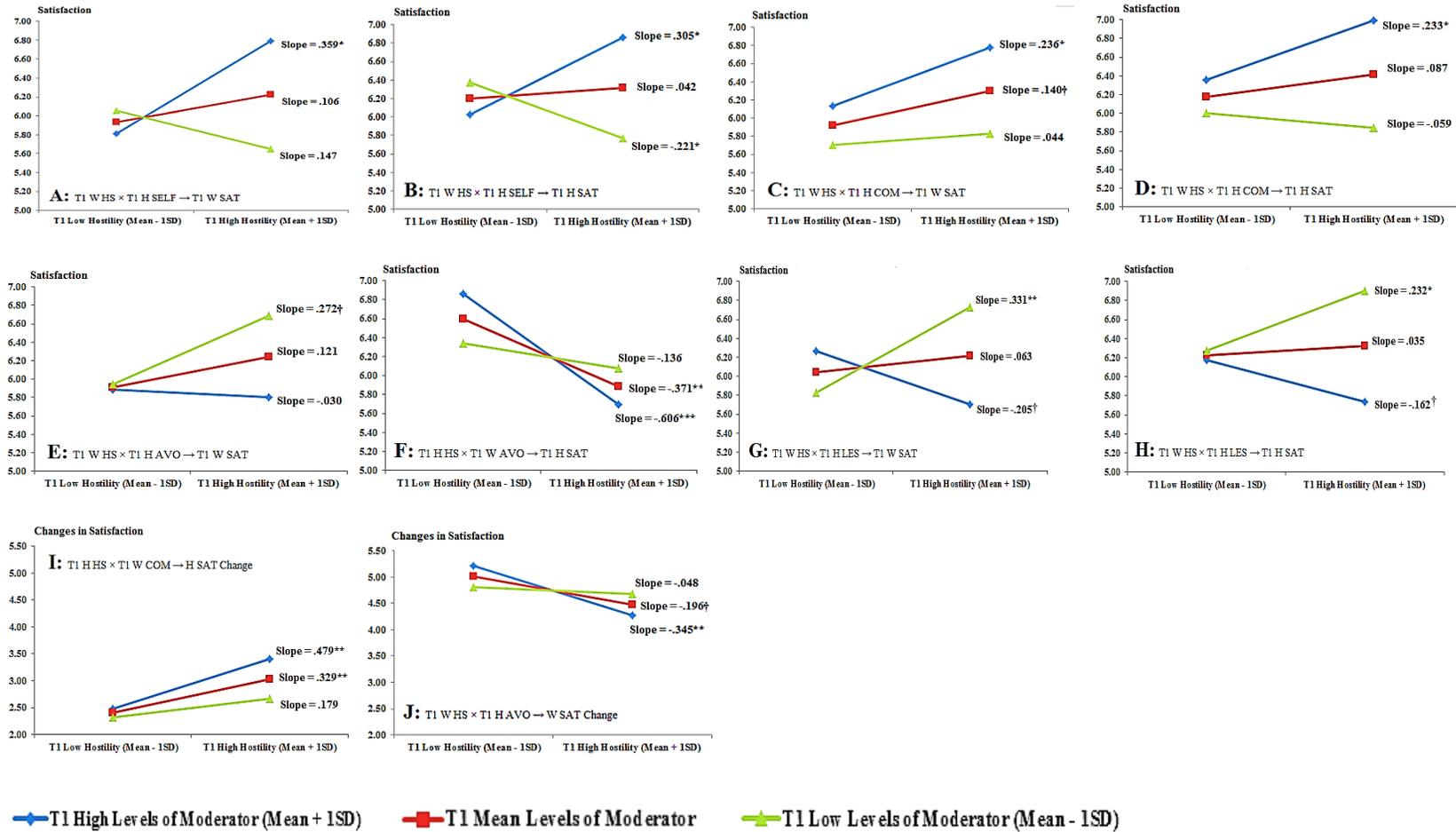


Figure 6. Illustrations of the Moderating Effects of the T1 PARTNER Factors on the Concurrent (Panel A-H) and the Longitudinal (Panel I-J) Associations between Marital Hostility and Marital Satisfaction.

Note. HS = hostility, SAT = marital satisfaction, SELF = self-esteem, COM = commitment, AVO = avoidance, LES = life event stress, H = husbands, W = wives, T1 = time point 1. † $p < .10$, * $p < .05$, ** $p < .01$, and *** $p < .001$ (2-tailed).

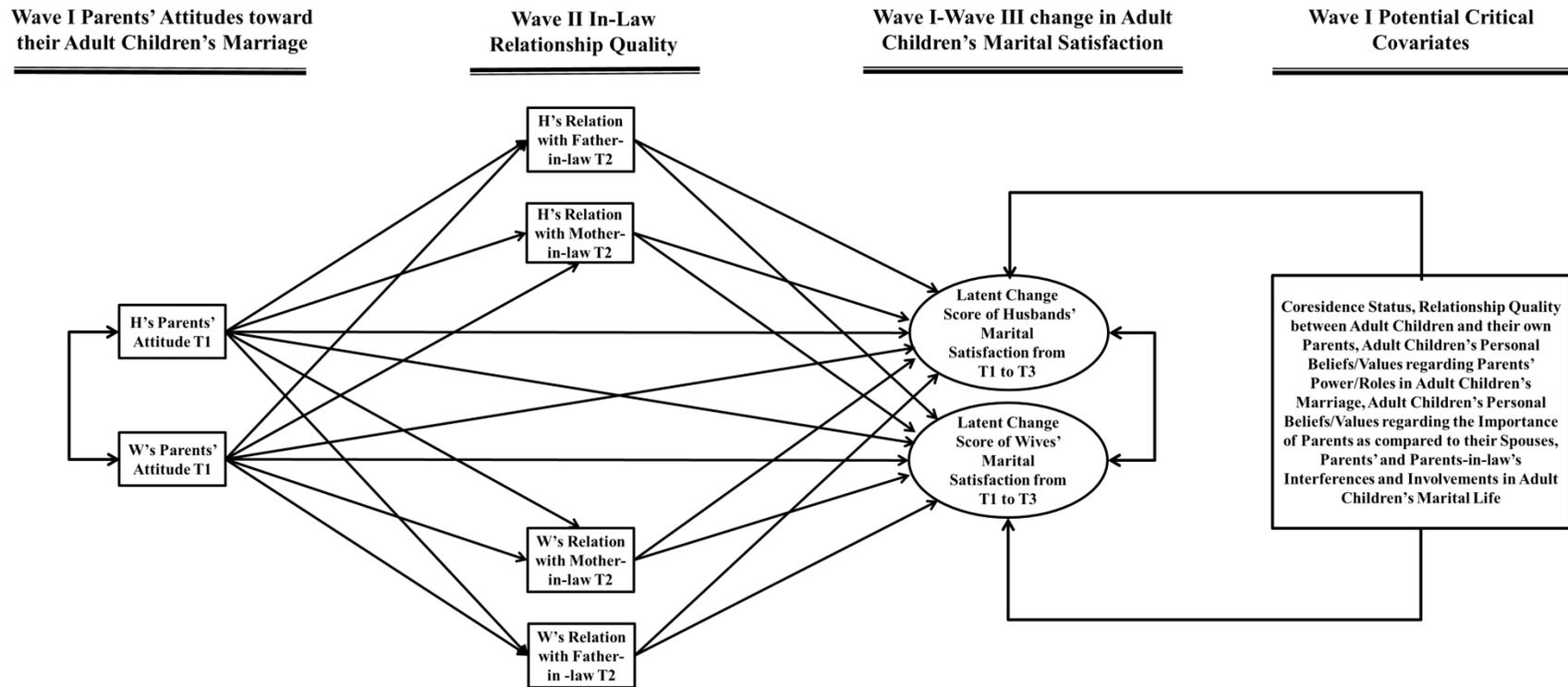


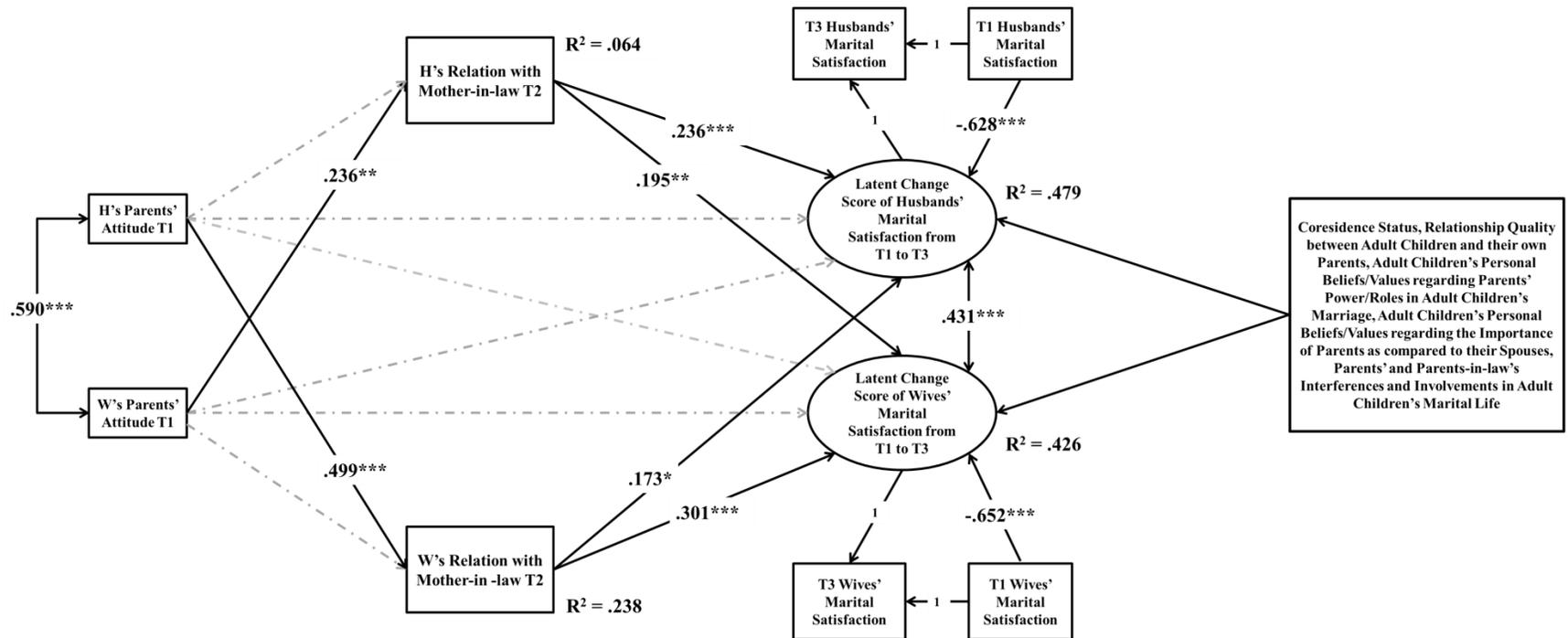
Figure 7. The Conceptual Model for Study 3: The Association between Parents' Attitude toward their Adult Children's Marriage and Change in Adult Children's Marital Satisfaction during the Early Years of Chinese Marriage: The Mediating Role of In-Law Relationship Quality.

Note. T₁ = Time point 1, T₂ = Time point 2, T₃ = Time point 3.

Table 6. Descriptive Statistics, Correlations, and Cronbach's Alphas for the Study Variables in Study 3.

Variables	1	2	3	4	5	6	7	8	9	10
1. T ₁ HPA	—									
2. T ₁ WPA	.591***	—								
3. T ₂ HRML	.186**	.267***	—							
4. T ₂ WRML	.489***	.276***	.088	—						
5. T ₂ HRFL	.266***	.264***	.623***	.087	—					
6. T ₂ WRFL	.412***	.266***	.094	.802***	.187*	—				
7. T ₁ HMS	.348***	.333***	.152*	.246***	.127†	.148*	—			
8. T ₁ WMS	.423***	.388***	.047	.385***	.075	.229**	.373***	—		
9. T ₃ HMS	.352***	.289***	.321***	.295***	.291***	.245**	.358***	.319***	—	
10. T ₃ WMS	.296***	.147*	.244**	.384***	.192*	.278***	.215**	.301***	.543***	—
<i>M</i>	4.359	4.226	2.908	2.709	2.968	2.757	6.365	6.279	6.100	5.995
<i>SD</i>	.611	.581	.485	.514	.466	.466	1.013	1.100	1.078	1.269
Cronbach's α	—	—	.895	.912	.868	.888	.926	.950	.956	.972

Note. HPA = husbands' parents' attitudes toward their adult children's current marriage, WPA = wives' parents' attitudes toward their adult children's current marriage, HMS = husbands' reported marital satisfaction, WMS = wives' reported marital satisfaction, HRML = husbands' perceived relationship quality with their mothers-in-law, HRFL = husbands' perceived relationship quality with their fathers-in-law, WRML = wives' perceived relationship quality with their mothers-in-law, WRFL = wives' perceived relationship quality with their fathers-in-law. T₁ = the first time point, T₂ = the second time point, and T₃ = the third time point. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed).



$\chi^2 = 44.110$, $df = 31$, $p = .060$, CFI = .947, RMSEA = .040 with 90% CI [.000, .065], and SRMR = .031

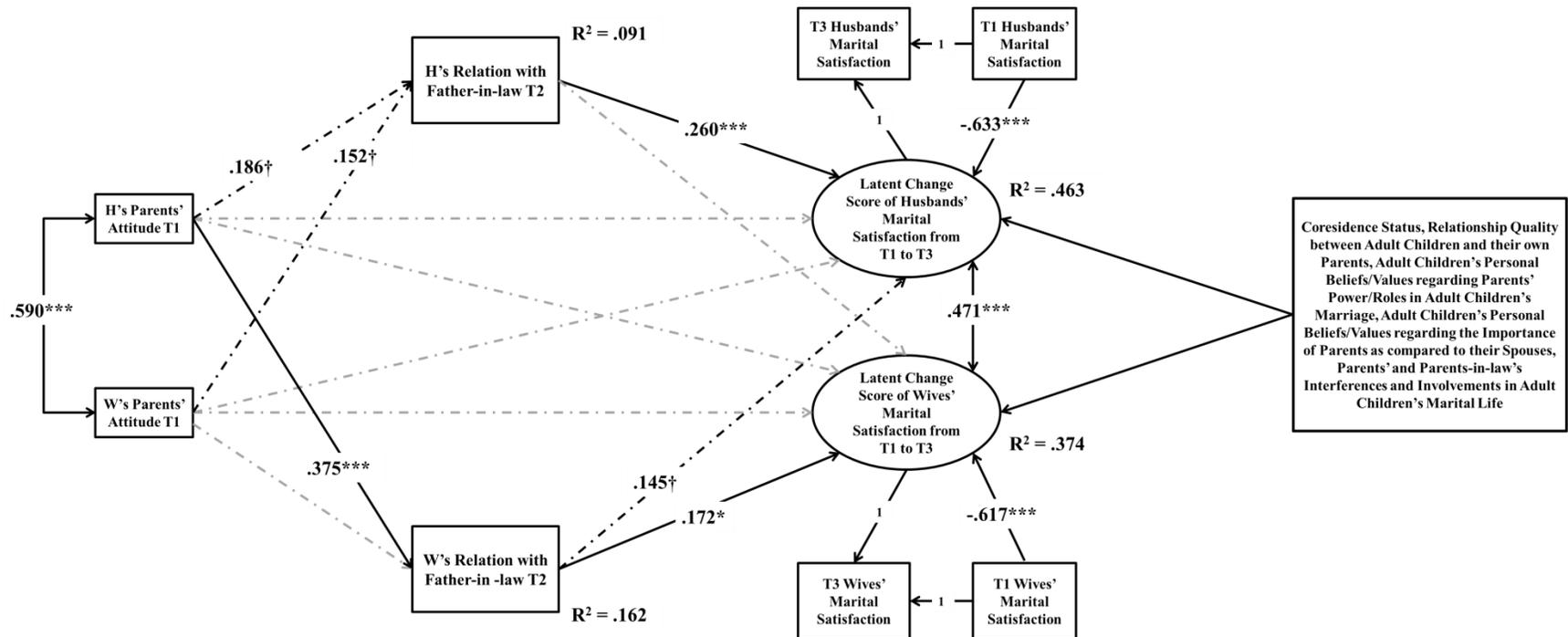
Figure 8. The Model with Spouses' Relationship Quality with only Mothers-in-law as Mediators.

Note. All estimated parameters are standardized. To simply presentation, measurement errors and residuals are not shown to simplify presentation. Also for clarity, (a) pathways with $p > .10$ are depicted in grey dash lines and parameter estimates for these pathways are not reported in this figure; pathways with $.05 < p < .10$ are depicted in black dash lines; and (c) parameter estimates for the pathways from the covariates to the outcome variables are not reported in this figure. T₁ = the first time point 1, T₂ = the second time point, and T₃ = the third time point. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed).

Table 7. Total, Direct, Overall Indirect, and Specific Indirect Effects for the Model with only Spouses' Relations with Mothers-in-law.

Effects	Bias-Corrected Bootstrapped Estimates					
	Unstandardized	S.E.	95% CI	99% CI	Standardized	
<i>T₁ H Parental Attitude → T₁ to T₃ H Marital Satisfaction</i>						
Total Effect	.342	.220	[-.032, .827]	[-.137, .950]	.171	
Direct Effect	.157	.227	[-.241, .651]	[-.383, .778]	.079	
Overall Indirect Effect	.185	.083	[.050, .380]	[.005, .449]	.093	
Specific Indirect Effects	T ₁ HPA → T ₂ HRML → T ₁ -T ₃ HMS	.012	.040	[-.049, .115]	[-.073, .115]	.006
	T₁ HPA → T₂ WRML → T₁-T₃ HMS	.173	.077	[.048, .358]	[.005, .411]	.087
<i>T₁ H Parental Attitude → T₁ to T₃ W Marital Satisfaction</i>						
Total Effect	.614	.239	[.176, 1.113]	[.061, 1.264]	.262	
Direct Effect	.249	.223	[-.175, .691]	[-.320, .844]	.106	
Overall Indirect Effect	.365	.115	[.178, .632]	[.123, .742]	.156	
Specific Indirect Effects	T ₁ HPA → T ₂ HRML → T ₁ -T ₃ WMS	.012	.039	[-.041, .125]	[-.064, .173]	.005
	T₁ HPA → T₂ WRML → T₁-T₃ WMS	.353	.111	[.173, .623]	[.128, .725]	.151
<i>T₁ W Parental Attitude → T₁ to T₃ W Marital Satisfaction</i>						
Total Effect	-.226	.221	[-.630, .238]	[-.769, .418]	-.092	
Direct Effect	-.325	.221	[-.714, .162]	[-.849, .327]	-.132	
Overall Indirect Effect	.099	.087	[-.051, .302]	[-.108, .351]	.040	
Specific Indirect Effects	T ₁ WPA → T ₂ WRML → T ₁ -T ₃ WMS	-.015	.064	[-.145, .113]	[-.196, .176]	-.006
	T₁ WPA → T₂ HRML → T₁-T₃ WMS	.113	.058	[.028, .271]	[.007, .324]	.046
<i>T₁ W Parental Attitude → T₁ to T₃ H Marital Satisfaction</i>						
Total Effect	.148	.229	[-.293, .606]	[-.429, .769]	.071	
Direct Effect	.038	.232	[-.396, .518]	[-.506, .651]	.018	
Overall Indirect Effect	.110	.064	[.007, .261]	[-.027, .320]	.052	
Specific Indirect Effects	T ₁ WPA → T ₂ WRML → T ₁ -T ₃ HMS	-.007	.033	[-.077, .057]	[-.112, .086]	-.003
	T₁ WPA → T₂ HRML → T₁-T₃ HMS	.117	.053	[.032, .244]	[.007, .289]	.056

Note. Indirect pathways that are significant at $p < .05$ (two-tailed) are bolded. HPA = husbands' parents' attitudes toward their adult children's current marriage, WPA = wives' parents' attitudes toward their adult children's current marriage, HMS = husbands' reported marital satisfaction, WMS = wives' reported marital satisfaction, HRML = husbands' perceived relationship quality with their mothers-in-law, HRFL = husbands' perceived relationship quality with their fathers-in-law, WRML = wives' perceived relationship quality with their mothers-in-law, WRFL = wives' perceived relationship quality with their fathers-in-law. T₁ = the first time point 1, T₂ = the second time point, and T₃ = the third time point.



$\chi^2 = 44.147$, $df = 29$, $p = .035$, $CFI = .934$, $RMSEA = .044$ with 90% CI [.012, .070], and $SRMR = .031$

Figure 9. The Model with Spouses' Relationship Quality with only Fathers-in-law as Mediators.

Note. All estimated parameters are standardized. To simply presentation, measurement errors and residuals are not shown to simplify presentation. Also for clarity, (a) pathways with $p > .10$ are depicted in grey dash lines and parameter estimates for these pathways are not reported in this figure; pathways with $.05 < p < .10$ are depicted in black dash lines; and (c) parameter estimates for the pathways from the covariates to the outcome variables are not reported in this figure. T₁ = the first time point 1, T₂ = the second time point, and T₃ = the third time point. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed).

Table 8. Total, Direct, Overall Indirect, and Specific Indirect Effects for the Model with only Spouses' Relations with Fathers-in-law.

Effects	Bias-Corrected Bootstrapped Estimates					
	Unstandardized	S.E.	95% CI	99% CI	Standardized	
<i>T₁ H Parental Attitude → T₁ to T₃ H Marital Satisfaction</i>						
Total Effect	.312	.222	[-.071, .798]	[-.185, .903]	.159	
Direct Effect	.110	.236	[-.308, .612]	[-.439, .707]	.056	
Overall Indirect Effect	.203	.090	[.063, .424]	[.021, .526]	.103	
Specific Indirect Effects	T₁ HPA → T₂ HRFL → T₁-T₃ HMS	.095	.069	[.002, .276]	[-.024, .358]	.049
	T₁ HPA → T₂ WRFL → T₁-T₃ HMS	.107	.061	[.017, .267]	[-.011, .319]	.056
<i>T₁ H Parental Attitude → T₁ to T₃ W Marital Satisfaction</i>						
Total Effect	.539	.245	[.087, 1.051]	[-.039, 1.188]	.228	
Direct Effect	.344	.234	[-.098, .827]	[-.230, .965]	.146	
Overall Indirect Effect	.195	.090	[.061, .419]	[.023, .504]	.083	
Specific Indirect Effects	T ₁ HPA → T ₂ HRFL → T ₁ -T ₃ WMS	.043	.043	[-.005, .177]	[-.019, .236]	.018
	T₁ HPA → T₂ WRFL → T₁-T₃ WMS	.152	.080	[.036, .364]	[.002, .431]	.064
<i>T₁ W Parental Attitude → T₁ to T₃ W Marital Satisfaction</i>						
Total Effect	-.215	.226	[-.626, .268]	[-.766, .443]	-.087	
Direct Effect	-.271	.231	[-.692, .223]	[-.820, .466]	-.109	
Overall Indirect Effect	.056	.057	[-.037, .194]	[-.083, .244]	.022	
Specific Indirect Effects	T ₁ WPA → T ₂ WRFL → T ₁ -T ₃ WMS	.018	.045	[-.051, .142]	[-.091, .191]	.007
	T ₁ WPA → T ₂ HRFL → T ₁ -T ₃ WMS	.037	.032	[-.006, .130]	[-.023, .165]	.015
<i>T₁ W Parental Attitude → T₁ to T₃ H Marital Satisfaction</i>						
Total Effect	.176	.229	[-.264, .638]	[-.392, .787]	.085	
Direct Effect	.082	.232	[-.350, .552]	[-.480, .687]	.039	
Overall Indirect Effect	.095	.063	[-.015, .234]	[-.051, .294]	.046	
Specific Indirect Effects	T ₁ WPA → T ₂ WRFL → T ₁ -T ₃ HMS	.013	.035	[-.036, .111]	[-.066, .169]	.006
	T ₁ WPA → T ₂ HRFL → T ₁ -T ₃ HMS	.082	.050	[-.006, .195]	[-.039, .240]	.040

Note. Indirect pathways that are significant at $p < .05$ (two-tailed) are bolded. HPA = husbands' parents' attitudes toward their adult children's current marriage, WPA = wives' parents' attitudes toward their adult children's current marriage, HMS = husbands' reported marital satisfaction, WMS = wives' reported marital satisfaction, HRML = husbands' perceived relationship quality with their mothers-in-law, HRFL = husbands' perceived relationship quality with their fathers-in-law, WRML = wives' perceived relationship quality with their mothers-in-law, WRFL = wives' perceived relationship quality with their fathers-in-law. T₁ = the first time point 1, T₂ = the second time point, and T₃ = the third time point.

Table 9. Total, Direct, Overall Indirect, and Specific Indirect Effects for Mediators in Model with Relationships with Mothers- and Fathers-in-law.

Effects	Bias-Corrected Bootstrapped Estimates					
	Unstandardized	S.E.	95% CI	99% CI	Standardized	
<i>T₁ H Parental Attitude → T₁ to T₃ H Marital Satisfaction</i>						
Total Effect	.347	.222	[-.040, .838]	[-.149, .943]	.172	
Direct Effect	.097	.226	[-.312, .574]	[-.447, .670]	.048	
Overall Indirect Effect	.249	.095	[.093, .457]	[.050, .531]	.124	
Specific Indirect Effects	T ₁ HPA → T ₂ HRML → T ₁ -T ₃ HMS	.008	.030	[-.026, .110]	[-.049, .154]	.004
	T ₁ HPA → T ₂ HRFL → T ₁ -T ₃ HMS	.065	.069	[-.015, .261]	[-.051, .367]	.032
	T₁ HPA → T₂ WRML → T₁-T₃ HMS	.200	.111	[-.023, .476]	[-.032, .558]	.100
	T ₁ HPA → T ₂ WRFL → T ₁ -T ₃ HMS	-.024	.093	[-.260, .127]	[-.367, .191]	-.012
<i>T₁ H Parental Attitude → T₁ to T₃ W Marital Satisfaction</i>						
Total Effect	.607	.204	[.165, 1.109]	[.165, 1.248]	.256	
Direct Effect	.297	.224	[-.128, .749]	[.272, .884]	.125	
Overall Indirect Effect	.310	.122	[.092, .570]	[.026, .669]	.131	
Specific Indirect Effects	T ₁ HPA → T ₂ HRML → T ₁ -T ₃ WMS	.014	.047	[-.041, .170]	[.069, .240]	.006
	T ₁ HPA → T ₂ HRFL → T ₁ -T ₃ WMS	-.020	.056	[-.172, .069]	[-.253, .119]	-.008
	T₁ HPA → T₂ WRML → T₁-T₃ WMS	.464	.159	[-.210, .859]	[-.132, .999]	.196
	T ₁ HPA → T ₂ WRFL → T ₁ -T ₃ WMS	-.148	.118	[.441, .039]	[-.554, .109]	-.062
<i>T₁ W Parental Attitude → T₁ to T₃ W Marital Satisfaction</i>						
Total Effect	-.219	.223	[-.629, .251]	[.770, .441]	-.088	
Direct Effect	-.317	.227	[-.723, .171]	[-.868, .341]	-.127	
Overall Indirect Effect	.098	.086	[-.054, .290]	[-.117, .340]	.039	
Specific Indirect Effects	T ₁ WPA → T ₂ WRML → T ₁ -T ₃ WMS	-.011	.085	[-.170, .175]	[-.243, .259]	-.004
	T ₁ WPA → T ₂ WRFL → T ₁ -T ₃ WMS	-.007	.042	[-.131, .056]	[-.191, .097]	-.003
	T ₁ WPA → T ₂ HRML → T ₁ -T ₃ WMS	.133	.093	[-.005, .403]	[-.031, .523]	.053
	T ₁ WPA → T ₂ HRFL → T ₁ -T ₃ WMS	-.018	.052	[-.169, .056]	[-.243, .098]	-.007
<i>T₁ W Parental Attitude → T₁ to T₃ H Marital Satisfaction</i>						
Total Effect	.164	.228	[-.270, .623]	[-.407, .776]	.077	
Direct Effect	.035	.230	[-.629, .251]	[.770, .441]	.017	
Overall Indirect Effect	.128	.075	[-.006, .292]	[-.049, .345]	.061	
Specific Indirect Effects	T ₁ WPA → T ₂ WRML → T ₁ -T ₃ HMS	-.005	.037	[-.087, .069]	[-.124, .109]	-.002
	T ₁ WPA → T ₂ WRFL → T ₁ -T ₃ HMS	-.001	.021	[-.018, .202]	[-.050, .289]	-.001
	T ₁ WPA → T ₂ HRML → T ₁ -T ₃ HMS	.076	.070	[-.027, .259]	[-.085, .347]	.036
	T ₁ WPA → T ₂ HRFL → T ₁ -T ₃ HMS	.058	.054	[-.018, .220]	[-.050, .289]	.027

Note. Indirect pathways that are significant at $p < .05$ (two-tailed) are bolded. HPA = husbands' parents' attitudes toward their adult children's current marriage, WPA = wives' parents' attitudes toward their adult children's current marriage, HMS = husbands' reported marital satisfaction, WMS = wives' reported marital satisfaction, HRML = husbands' perceived relationship quality with their mothers-in-law, HRFL = husbands' perceived relationship quality with their fathers-in-law, WRML = wives' perceived relationship quality with their mothers-in-law, WRFL = wives' perceived relationship quality with their fathers-in-law. T₁ = the first time point, T₂ = the second time point, and T₃ = the third time point.