

Observed Support in Marriage: The Roles of Support-Seeking Behaviour and Stress Reactivity

by

Patrick W. Poyner-Del Vento

M.A. (Psychology), Simon Fraser University, 2009
M.S.T. (Childhood Education), Fordham University, 2005
B.Sc., University of Florida, 2003

Dissertation Submitted in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy

in the
Department of Psychology
Faculty of Arts and Social Sciences

© Patrick Poyner-Del Vento 2013

SIMON FRASER UNIVERSITY

Spring 2013

All rights reserved.

However, in accordance with the *Copyright Act of Canada*, this work may be reproduced, without authorization, under the conditions for "Fair Dealing." Therefore, limited reproduction of this work for the purposes of private study, research, criticism, review and news reporting is likely to be in accordance with the law, particularly if cited appropriately.

Approval

Name: Patrick W. Poyner-Del Vento

Degree: Doctor of Philosophy (Clinical Psychology)

Title of Dissertation: *Observed Support in Marriage: The Roles of Support-Seeking Behaviour and Stress Reactivity*

Examining Committee: **Chair:** Firstname Surname
Position

Rebecca Cobb, Ph.D.
Senior Supervisor
Associate Professor

Kim Bartholomew, Ph.D.
Supervisor
Professor

Norm O'Rourke, Ph.D.
Supervisor
Associate Professor

Anita DeLongis, Ph.D.
Internal Examiner
Associate Professor
Psychology Department
University of British Columbia

Erica Woodin, Ph.D.
External Examiner
Assistant Professor
Psychology Department
University of Victoria

Date Defended/Approved: April 16, 2013

Partial Copyright Licence



The author, whose copyright is declared on the title page of this work, has granted to Simon Fraser University the right to lend this thesis, project or extended essay to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users.

The author has further granted permission to Simon Fraser University to keep or make a digital copy for use in its circulating collection (currently available to the public at the "Institutional Repository" link of the SFU Library website (www.lib.sfu.ca) at <http://summit.sfu.ca> and, without changing the content, to translate the thesis/project or extended essays, if technically possible, to any medium or format for the purpose of preservation of the digital work.

The author has further agreed that permission for multiple copying of this work for scholarly purposes may be granted by either the author or the Dean of Graduate Studies.

It is understood that copying or publication of this work for financial gain shall not be allowed without the author's written permission.

Permission for public performance, or limited permission for private scholarly use, of any multimedia materials forming part of this work, may have been granted by the author. This information may be found on the separately catalogued multimedia material and in the signed Partial Copyright Licence.

While licensing SFU to permit the above uses, the author retains copyright in the thesis, project or extended essays, including the right to change the work for subsequent purposes, including editing and publishing the work in whole or in part, and licensing other parties, as the author may desire.

The original Partial Copyright Licence attesting to these terms, and signed by this author, may be found in the original bound copy of this work, retained in the Simon Fraser University Archive.

Simon Fraser University Library
Burnaby, British Columbia, Canada

revised Fall 2011

Ethics Statement



The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

- a. human research ethics approval from the Simon Fraser University Office of Research Ethics,

or

- b. advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University;

or has conducted the research

- c. as a co-investigator, collaborator or research assistant in a research project approved in advance,

or

- d. as a member of a course approved in advance for minimal risk human research, by the Office of Research Ethics.

A copy of the approval letter has been filed at the Theses Office of the University Library at the time of submission of this thesis or project.

The original application for approval and letter of approval are filed with the relevant offices. Inquiries may be directed to those authorities.

Simon Fraser University Library
Burnaby, British Columbia, Canada

update Spring 2010

Abstract

Whether and how spouses seek and provide support in marital discussions is not clearly understood, and stress reactivity (e.g., tension or irritability) may interfere with effective support behaviours. In a sample of newlywed couples ($N = 145$), path analyses indicated negative within-spouse associations between positive and negative helpee (e.g., appropriately or inappropriately requesting help) and helper behaviours (e.g., expressing empathy or criticism). Helpee positive behaviours positively predicted helper positive behaviours, and helpee negative behaviours positively predicted helper negative behaviours. Invariance analyses indicated that in comparison to helper wives, helper husbands were more likely to reciprocate positive wife helpee behaviours and less likely to reciprocate negative wife helpee behaviours. As expected, spouses' stress reactivity predicted husbands' and wives' negative behaviours, but only when couples discussed wives' worries. Contrary to prediction, wives' stress reactivity was less strongly associated with negative helpee behaviours when husbands were more tense or irritable; but, as expected, any negative wife helpee behaviour was more likely to be met with negative helper behaviours from their more tense or irritable husbands. Results suggest that husbands may be more appropriately responsive, and more likely to inhibit negative responses, than wives. In addition, tense or irritable wives may be more likely to inhibit criticism or demands for support with their tense husbands. However, when wives do criticize or demand help, they are more likely to be met with contempt or defensiveness from their tense or irritable husbands. Overall, this study demonstrates the importance of examining spousal support within a dyadic framework, focusing on the roles spouses play in support discussions, and identifying when physical and emotional reactions to stress may be important factors in spousal support.

Keywords: spousal support; dyadic coping; helpee; helper; stress; marriage

To Nathan, my son.

Acknowledgements

Dissertations are typically authored by one person, but in reality, this project is the end result of many people working in collaboration over the past several years. Thus, I would like to thank my senior supervisor, Dr. Rebecca Cobb, for her guidance and feedback through each stage of this project, Dr. Kim Bartholomew for her supervisory role in conceptualizing dyadic communication, Dr. Norm O'Rourke for his time and effort in training me on conducting complex path analyses, and Drs. Anita Delongis and Erica Woodin for their time and feedback while serving on the examining committee.

I would like to thank the graduate students and research assistants of the Close Relationships Lab at Simon Fraser University for their assistance with data collection in the SFU Transition to Marriage Project. In particular, I would like to thank Wayne De Connick, Scott Gallagher, Deborah Ho, Robin Krzysiek, Ross Stogryn, and Kristy Tymos for their assistance with the microanalytic coding of the social support discussion videos used for this dissertation. I would also like to thank the all the participating couples from the Metro Vancouver area for being a part of in this research. This work was supported by the Social Sciences and Humanities Research Council of Canada (Grant 410-2005-0829).

Finally, I would like to thank my wife, Katherine, for her constant love and support over the past seven years of my graduate training, for being there during those moments when I experienced significant setbacks, and for always believing in me and encouraging me from the very beginning of our relationship.

Table of Contents

Approval.....	ii
Partial Copyright Licence	iii
Ethics Statement.....	v
Abstract.....	vi
Dedication	vii
Acknowledgements	viii
Table of Contents.....	ix
List of Tables and Figures	x
Introduction	1
Method	9
Results	17
Discussion	24
References.....	32
Footnotes	38
Tables and Figures	39

List of Tables and Figures

Table 1.	Means and Standard Deviations of Stress Reactivity and Support Behaviours	40
Table 2.	Within-Spouse Correlations Among Stress Reactivity and Support Behaviours	41
Table 3.	Cross-Spouse Correlations Among Stress Reactivity and Support Behaviours	42
Figure 1.	Hypothesized Path Model	43
Figure 2.	Original and Revised Models of Husbands' Helpee Behaviours and Husbands' and Wives' Stress Reactivity Predicting Wives' Helper Behaviours	44
Figure 3.	Original and Revised Models of Wives' Helpee Behaviours and Wives' and Husbands' Stress Reactivity Predicting Husbands' Helper Behaviours	45
Figure 4.	Wives' Stress Reactivity as a Moderator of the Associations between Husbands' Stress Reactivity and Helpee Support Behaviors and Husband Helpee and Wife Helper Support Behaviours.....	46
Figure 5.	Husbands' Stress Reactivity as a Moderator of the Associations between Wives' Stress Reactivity and Helpee Support Behaviors and Wife Helpee and Husband Helper Support Behaviours.....	47

Introduction

Spousal support robustly predicts marital satisfaction (e.g., Pasch & Bradbury, 1998; Sullivan, Pasch, Johnson, & Bradbury, 2010) and physical and mental health outcomes (e.g., Beach, Arias, & O'Leary, 1986). However, spousal support functions within a dyadic system and is shaped, in part, by the reciprocal nature of spouses' and partners' support behaviours (e.g., Bodenmann, 1995; 2005). In addition, the physical and emotional toll of stress—the very factors that lead spouses to seek support from their partners (e.g., Cutrona, 1996)—can deplete cognitive or emotional resources and interfere with effective dyadic coping (e.g., Neff & Karney, 2004). The purpose of this study was to examine how spouses' expressions of worries to their partners and their reactivity to stress may predict spousal support behaviours.

Conceptualizing Dyadic Coping Behaviour

Until recently, researchers have conceptualized spousal support using individual-level models. These models generally focus on individuals coping with stress in the context of a relationship (e.g., Lazarus & Folkman, 1984; Pearlin & Schooler, 1978) or spouses' perceptions of support from partners (e.g., Pierce, Lakey, Sarason, & Sarason, 1997). For example, how spouses perceive the quality of support from their partners may lead to changes in marital satisfaction (e.g., Acitelli, 1996) or individual well-being (e.g., Beach et al., 1986). Although individual models are helpful to understand the ways in which perceived support operates within spouses, they neglect to capture the

reciprocal nature of spousal support in support discussions (e.g., Bodenmann, 1995). For example, during a support discussion a spouse may direct negative affect toward the partner unproductively or make strong demands for support. As a result, the partner may withdraw from the discussion or criticize the way in which the spouse copes with worry, presumably because the partner felt overwhelmed. The spouse may in turn withdraw from the conversation or feel pessimistic about the partner's ability to be supportive. A dyadic approach to examining spousal support takes into account the interdependence of verbal and nonverbal behaviours in the discussion. Thus, the quality of a support discussion is largely the result of a verbal exchange in which both spouses are involved (e.g., Bodenmann, 2005; Jacobson & Margolin, 1979).

On a related note, until recently there has been an almost exclusive focus on support provision (e.g., Cutrona & Suhr, 1992); it may be important to focus on spouses' implicit or explicit attempts to solicit support from partners. Recent studies indicate that behaviour of the spouse in the "helpee" role (i.e., the spouse describing a problem or worry) predicts marital outcomes equally as well as behaviours of the partner in the "helper" role (i.e., the partner listening and responding to the spouse's worries) in laboratory observations of support interactions (e.g., Sullivan et al., 2010). Thus, it is important to consider the roles of helpees and helpers in support discussions (e.g., Lawrence et al., 2008; Pasch & Bradbury, 1998). One purpose of this study is to examine whether spouses' helpee behaviours predict partners' helper behaviours.

Positive and Negative Reciprocity in Spousal Support and the Role of Helpee

The tendency for couples to engage in positive or negative reciprocity during important discussions is well established in marital research. Whether observed in conflict (Smith, Vivian, & O'Leary, 1989), problem-solving (e.g., Johnson et al., 2005), or support discussions (e.g., Pasch, Bradbury, & Davila, 1997), partners tend to respond to spouses' positive or negative behaviours with similar types of behaviours. However, it is not clear when patterns of positive or negative reciprocity between helpee spouses and helper partners are more or less likely to occur in support discussions. The marital support gap hypothesis (e.g., Belle, 1982; Steil, 2000) may shed some light in this regard. Advocates of this model argue that husbands are less likely to provide adequate support to wives than wives are to husbands, leading wives to feel less satisfied than husbands regarding the quality of spousal support (e.g., Steil, 2000). Researchers have suggested that this supposed gap in support is caused by differences in socialization experiences during childhood (e.g., Tannen, 1990) or communication styles in adulthood (e.g., Bate & Bowker, 1997). Thus, it may be that wives, in the helper role, are more likely to respond to husbands' positive cues for support (e.g., appropriate requests for help) with empathy, offers of assistance, or problem-solving, than husbands are when they are in the helper role, perhaps because husbands' positive cues are more easily recognized by wives than wives' positive cues are by husbands. Similarly, wives may be more likely to inhibit negative reactions (e.g., criticism or contempt) when husbands express pessimism about the future than when husbands are responding to their wives' expression of pessimism or demands, perhaps because wives are better able to regulate their emotions when support is needed. However, evidence for the marital support gap

hypothesis is mixed (e.g., Biele & Mickelson, 2012; Olson & Shultz, 1994; Verhofstadt, Buysse, & Ickes, 2007) and when gender differences in support adequacy are observed they tend to be small (e.g., Pasch et al., 1997; Sullivan et al., 2010). A central goal of this study was to clarify whether positive and negative support reciprocity was more likely to occur when husbands or wives were in the helper role.

Stress Reactivity and Spousal Support

The associations between spousal support and individual and relationship outcomes are strong and robust (for reviews, see Cutrona, 1996, and Sullivan & Davila, 2010). Whether assessed as spouses' perceptions of support or observer ratings of laboratory support behaviour, ineffective or negative spousal support is associated with declines in marital satisfaction (e.g., Pasch & Bradbury, 1998; Sullivan et al., 2010), physical and mental health problems (e.g., Beach et al., 1986; Coyne & Downey, 1991), and lower life satisfaction (e.g., Wan, Jaccard, & Ramey, 1996). However, less attention has been given to understanding predictors of support behaviours, and thus far, the focus has generally been on individual risk factors. For example, depressive symptoms (e.g., Pasch et al., 1997), attachment insecurity (Feeney & Collins, 2010), physical health problems (e.g., Knoll, Burkett, Luszczynska, Roigas, & Gralla, 2011), and poor quality of life (e.g., Sirri, Magelli, & Grandi, 2011) predict less positive support perceptions and more negative and less positive observed support behaviour.

Although individual circumstances and enduring vulnerabilities predict spousal support behaviours, the way in which either spouse reacts to stressful events may also be important. Feeling agitated, tense, irritable, or frustrated—common physical and

emotional reactions to stress (e.g., Denson, Spanovic, & Miller, 2009) and major reasons for seeking support from partners (cf. Feeney & Collins, 2010)—may inhibit spouses' expressions of positive support behaviours or trigger more negative support behaviours (e.g., Dixon-Gordon, Chapman, Lovasz, & Walters, 2011; Fruzzetti & Iverson, 2006). In other words, depletion of spouses' cognitive or emotional resources may be associated with decreases in positive behaviours or increases in negative behaviours (e.g., Neff & Karney, 2004), perhaps because of spouses' frustration toward partners for not providing adequate support or partners feeling overburdened with requests for help from spouses. Thus, stress reactivity may be an important factor in spousal support discussions.

Finally, it is important to note that spouses' physical and emotional reactions to stress are embedded in the dyadic context in which spousal support unfolds (cf. Bodenmann, 2005). Specifically, helpers' stress reactivity may alter helpees' perceptions of helpers' support behaviours or of helpers' available resources for support (e.g., Kane et al., 2007). Thus, the associations between helpee and helper support behaviours, and helpee stress reactivity and helpee behaviours, may differ in magnitude depending on helper stress reactivity. For example, if a helpee spouse expresses negative affect unproductively, a tense or irritable helper partner may be even more likely to become defensive or criticize the spouse than if the helper partner is less tense or irritable (e.g., Fruzzetti & Iverson, 2006). Furthermore, an irritable helpee spouse may be even less likely to ask for help appropriately and more likely to express pessimism when the helper partner is more irritable than when the helper partner is less irritable. In other words, the helpee spouse may believe the helper partner is not emotionally available (e.g., Feeney and Collins, 2010) and as a result experience more difficulties in

communicating any support needs. Thus, an important goal of this study was to test whether helper stress reactivity moderates the associations between helpee and helper support behaviours, and between helpee stress reactivity and helpee support behaviours.

The Current Study

In the present study, I examined whether the quality of spouses' helpee behaviours (e.g., describing worries to partners in helpful ways or expressing pessimism about the future) were associated with the quality of their partners' helper behaviours (e.g., responding with empathy or with criticism) and whether the strength of these associations differed depending on whose worry topic (husbands or wives) was being discussed. I also examined whether stress reactivity predicted positive and negative support behaviours within spouses. Finally, I examined whether helper partners' stress reactivity moderated the associations between helpee spouses' stress reactivity and their helpee behaviours and between helpee spouses' and helper partners' support behaviours.

The proposed model is in Figure 1. Paths a and b represent within-spouse associations between positive and negative behaviours, paths c through f represent cross-spouse associations between helpee and helper behaviours, and paths g through j represent within-spouse associations between stress reactivity and support behaviours. First, I predicted that positive and negative support behaviours would be negatively associated within spouses (paths a and b). Second, consistent with a dyadic model of spousal support (e.g., Bodenmann, 2005), I predicted that spouses' positive helpee

behaviours would be positively associated with positive helper behaviours (path c) and negatively associated with negative helper behaviours (path d). Third, I predicted that spouses' negative helpee behaviours would be positively associated with negative helper behaviours (path e) and negatively associated with positive helper behaviours from partners (path f). Fourth, I predicted that spouses' and partners' stress reactivity would negatively predict within-spouse positive support behaviours (paths g and h) and positively predict within-spouse negative support behaviours (paths i and j), perhaps because of temporary decreases in cognitive or emotional resources (e.g., Neff & Karney, 2004) or increases in emotion dysregulation (e.g., Dixon-Gordon et al., 2011; Fruzzetti & Iverson, 2006).

Next, I tested whether the relative strength of the associations between helpee and helper behaviours (paths c through f) differed depending on whose topic (husbands or wives) was being discussed. Building on the marital support gap hypothesis (e.g., Steil, 2000), I intended to clarify whether helper wives were more likely to respond to helpee husbands' positive behaviours with positive helper behaviours. I also intended to clarify whether helper wives were more likely to inhibit negative helper responses to helpee husbands' negative behaviours than when helper husbands were responding to helpee wives' negative helpee behaviours.

Finally, I predicted that helper stress reactivity would weaken the positive association between helpee and helper positive behaviours (path c) and strengthen the negative association between helpee positive behaviours and helper negative behaviours (path d). This might occur because tense or irritable partners are less likely to recognize helpee spouses' adequate analysis of the problem, or more likely to feel

burdened by appropriate requests for help. I also predicted that higher helper stress reactivity would strengthen the positive association between negative helpee and helper behaviours (path e) and the negative association between negative helpee behaviours and positive helper behaviours (path f). This might occur because tense or irritable helper partners may be more likely to inhibit expressions of empathy when responding to helpee spouses' criticism or complaining, and less likely to tolerate inappropriate demands for help. I also predicted that higher helper stress reactivity would strengthen the negative within-spouse association between helpee stress reactivity and positive helpee behaviours (path g) and the positive within-spouse association between helpee stress reactivity and negative helpee behaviours (path i). This might occur because overly tense and irritable helpee spouses may be more likely to believe that their agitated or frustrated helper partners are less available for support than less tense or irritable helpee spouses would believe of their helper partners, leading to more difficulties in communicating support needs (e.g., Collins and Feeney, 2000; Kane et al., 2007). Although not depicted in Figure 1, correlations between spouse and partner stress reactivity were included in the model because they tend to be similar in psychological (e.g., depression, anxiety) and contextual factors (e.g., chronic stress) (e.g., Butterworth & Rodgers, 2006; Rudolph et al., 2000; Story & Repetti, 2006).

Method

Participants

Participants ($N = 145$) were a subset of heterosexual married couples who participated in the Simon Fraser University Transition to Marriage (TTM) Study. The majority of participants were recruited through articles and advertising in print media ($n = 52$), attendance at bridal shows ($n = 36$), internet advertising ($n = 35$), and word of mouth ($n = 16$). A minority of participants were recruited through placement of posters in bridal shops and marriage licensing offices, or letters to religious organizations and leaders of marriage preparation classes ($n = 6$). At T1, husbands averaged 29.2 years of age ($SD = 4.9$), earned an average of \$31,400 ($SD = 15,100$), and had completed 12.8 years of education ($SD = 6.5$). Wives averaged 27.4 years of age ($SD = 4.2$), earned an average of \$23,900 ($SD = 17,900$), and had completed 14.0 years of education ($SD = 5.6$). Most husbands (80%) and wives (81%) were born in Canada. Of the husbands, 78% were Caucasian, 14% were Asian, 3% were Indo-Canadian, 2% were Middle-Eastern, and 3% identified as other. Of the wives, 71% were Caucasian, 19% were Asian, 6% were Indo-Canadian, 1% were First Nations, and 3% identified as other. Most couples (65%) had cohabited prior to marriage for an average of 2.49 years ($SD = 2.16$), and average relationship length was 3.9 years ($SD = 2.81$) at T1.

Procedures

The Research Ethics board at Simon Fraser University approved all study procedures. Interested individuals ($N = 684$) responded to recruitment efforts by contacting the lab by phone or email, and one member of the couple ($n = 461$) completed a 15-minute telephone or email interview to determine eligibility. Eligible participants were between 18–45 years of age, engaged with a wedding date set, planning first marriages, childless, fluent reading and writing English, and living in the metro Vancouver area to allow for attendance at the lab sessions. Individuals who did not complete the screening interview could not be reached despite repeated efforts by lab staff, declined to complete the screening interview, or contacted the lab after recruitment for the study was complete ($n = 223$).

Following the telephone-screening interview, participants received an email with information about the study and an electronic version of the consent form. Approximately three months prior to their wedding date, participants received an e-mail with an electronic copy of the consent form, a hypertext link to the online questionnaires, a unique ID number, and a password. Online questionnaires were hosted on a secure university website, and once participants logged onto the first survey, they read the informed consent form and they were required to indicate their consent to participate in the study by clicking a radio button. Participants were asked to complete their questionnaires in private and not to discuss the questions or their responses with their partners.

Participants completed questionnaires nine times over two years, starting on average 3.1 months ($SD = 1.15$) prior to marriage (T1) and then every three months

thereafter (T1–T9). Couples also visited the laboratory twice, once three months after marriage (T3) and once 1.5 years after marriage (T9). Of the 221 eligible couples who initially agreed to participate in the longitudinal study and who received T1 questionnaires, 201 completed at least some T1 questionnaires; 20 eligible couples who agreed to participate did not ultimately complete T1 questionnaires prior to their wedding and were excluded from the study. Of the 201 couples who completed at least part of T1, 178 couples went on to complete T3 questionnaires. Of the 160 couples completing the first laboratory session at T3, 145 couples provided sufficient T3 data to be included in this study (i.e., both spouses completed the measures included in this study). Based on the data available, there were no differences between included and excluded husbands or wives on T1 measures of neuroticism¹ (Barrett, Petrides, Eysenck, & Eysenck, 1998) or stress reactivity (Lovibond & Lovibond, 1995). On average, husbands completed T3 stress reactivity questionnaires 26.4 days ($SD = 30.9$) before their scheduled lab session, wives completed T3 stress reactivity questionnaires 31.3 days ($SD = 29.4$) before the lab session, and on average wives completed T3 questionnaires before their husbands ($t(144) = -3.47, p = .001, d = .58$).

At the beginning of the lab session, research assistants (post-BA or graduate-level psychology students) provided information about the purpose of the lab session and obtained verbal and written informed consent for the laboratory procedures. Spouses completed a series of tasks including individual and conjoint interviews, questionnaires, physical data collection, and marital discussions. Analyses in this study focus on the two marital discussions designed to elicit spousal support behaviour. As part of the T3 questionnaires, participants listed up to five current topics of worry and

rated the severity of each worry. At the end of the individual interviews, research assistants asked the spouse to choose a topic from their worry list, but excluding topics that were a source of marital conflict. Example topics that the spouses chose to discuss included managing family relationships, coping with work-related stress, succeeding in school-related endeavors, or losing weight. Spouses generally chose the most distressing area of concern from their T3 list of worries (based on a 1–9 scale where 1 = “not at all worried” and 9 = “worried a great deal”). Husbands ($M = 6.29$, $SD = 1.66$) and wives ($M = 6.50$, $SD = 1.83$) were moderately or greatly worried about their chosen topic, and there was no difference between husband and wife worry severity. Once spouses were reunited for the marital discussions, the research assistant confirmed with each spouse that their topics were not sources of conflict in the marriage. One spouse was then randomly chosen to discuss his or her topic first (in the helpee role) in a 7-minute digitally recorded discussion with the partner (in the helper role), following which the spouses changed roles and discussed the partner’s topic in another 7-minute digitally recorded discussion. Interviewers told helpee spouses to discuss the worry with their partners and told helper partners to “respond as you normally would, but you should be involved in some way in the discussion.” Prior to and after completing each of the 7-minute discussions, spouses completed short questionnaires that are not the focus of this study.

Measures

Stress reactivity. The stress subscale of the Depression, Anxiety and Stress Scale (DASS–Stress; Lovibond & Lovibond, 1995) includes seven items that measure

spouses' physical and emotional reactivity to stress. Respondents rate their stress reactivity over the past week on a 4-point scale, ranging from "did not apply to me at all" to "applied to me very much or most of the time." Sample items include the following statements: "I found myself getting agitated," "I found that I was very irritable," "I was in a state of nervous tension" and "I found it difficult to relax." Total scores are derived by summing responses, and higher scores indicate more frequent or intense reactivity to stress. The DASS–Stress scale has good psychometric properties and reliably distinguishes between individuals with lower and higher stress reactivity (Crawford & Henry, 2003). Coefficient alphas for the DASS–Stress subscale were .78 for husbands and .90 for wives.

Observed support behaviour. The Social Support Interaction Coding System (SSICS; Pasch, Harris, Sullivan, & Bradbury, 2004) is a microanalytic coding system of spousal support. Based on social learning theory and the concepts of reward and punishment (e.g., Jacobson & Margolin, 1979), the SSICS is used to analyze observed support behaviours in marital discussions. Seven coders (one graduate student and six undergraduate psychology students) were trained over 12 weeks on the SSICS. Coders first read selected articles on microanalytic coding of dyadic communication and discussed examples of each support behaviour. Next, they independently watched and coded training tapes from the UCLA Newlywed Project (e.g., Sullivan et al., 2010). Dr. Kieran Sullivan, who was one of the originators of the coding system, provided email and in-person consultation on coding-related issues. Deviations in codes between coders were resolved through group discussion and referring coders to the SSICS manual and master codes for training tapes. Once training was complete, coders were randomly

assigned videos. The coders were aware of the topic of the discussion and the role each spouse was assigned (i.e., helpee or helper), but they were not provided with any other data or identifying information about the couple, nor were they aware of the hypotheses of the current study.

Each speaking turn was coded as one of four general categories: positive, negative, neutral, or off-task. Positive helpee behaviours included behaviours such as attempts to describe or analyze the problem (e.g., “I’m finding it difficult to manage things at home with my workload at the office”), asking for help or advice (e.g., “This is such a really tough situation—what do you think I should do?”), or positively responding to the partner’s attempt at support (“That makes me feel so much better to hear you say that”). Positive helper behaviours were further identified as instrumental support (e.g., specific or tangible offers of support such as “Would you like it if I give you a massage after you come home from work?”), emotional support (e.g., identifying and empathizing with partner’s feelings such as “It must feel so exhausting working long hours in that office”). Positive helper behaviours that could not be classified as either instrumental or emotional support were classified as other positive support (e.g., analysis of the problem, acceptance of the partner, or other forms of support such as “Tell me more about how there’s no time for a break”). Previous studies indicate few differences between these types of positive support behaviours in predicting outcomes (e.g., Cutrona, 1996; Pasch & Bradbury, 1998; Sullivan et al., 2010), and thus positive helper behaviours were collapsed across categories to yield a single score of positive helper behaviour for each spouse.

Negative helpee behaviours included criticizing the way the helper partner was supporting the spouse, withdrawing from the discussion, expressing pessimism about the future, or showing contempt for the partner (e.g., “You’re constantly nagging me to change—this isn’t helping me”). Negative helper behaviours included criticizing the helpee spouse, withdrawing from the discussion, or expressing negative affect unproductively (e.g., “Just admit it—you’re too weak to handle the work demands”).

Neutral helpee or helper behaviors included repeated analyses of the problem that did not further contribute to understanding of the problem, speech that was difficult to understand, ambiguous, or too brief to be coded as positive or negative. Off-task helpee and helper behaviors included talking about matters not relevant to the problem under discussion (e.g., asking about a mother-in-law’s health during a discussion about a spouse’s work-related stress).

Coders assigned codes to each speaking turn in the interaction; multiple codes per speaking turn were not permitted. Proportions of positive helpee, negative helpee, positive helper and negative helper codes were calculated for each interaction by summing each spouse’s total score for a given support category and then dividing that value by the total number of speaking turns for each spouse. Intraclass correlations indicated adequate interrater reliability for support behaviours (i.e., ICC scores $\geq .70$; Nunnally & Bernstein, 1994). For positive helpee behaviours, coefficients were .76 and .82 for husbands and wives, respectively. For negative helpee behaviours, coefficients were .89 and .78 for husbands and wives, respectively. For positive helper behaviours, coefficients were .71 and .68 for husbands and wives, respectively. For negative helper behaviours, coefficients were .81 and .92 for husbands and wives, respectively.

Data Analysis

Hypotheses were tested with path analysis using the SPSS Analysis of Moment Structures (AMOS) 20.0 software program (Arbuckle, 2011) and the Actor-Partner Interdependence Model (APIM; Cook & Kenny, 2005), which takes into account spouse and partner effects simultaneously. All variables were modeled as measured variables. To test for differences in path coefficients, invariance analyses, which allow for simultaneous modeling of all variables and comparisons of the relative magnitude of path coefficients between different models, were conducted. To evaluate the model fit, three goodness-of-fit indices are presented in addition to the Chi-Square (χ^2): Comparative Fit Indices (CFI), Standardized Root Mean Square Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA). Following the recommendations of Hu and Bentler (1999), values of .95 or better on the CFI, values below 0.09 on the SRMR, and values of 0.08 or lower on the RMSEA indicate that the model is a good fit to the data.

Results

Descriptive Statistics and Correlations

Means and standard deviations for study variables are in Table 1. There were no demographic differences (i.e., race, education, income, nationality, religion) in the main study variables. Wives reported higher stress reactivity than husbands ($t = 2.18$, $p = .03$, $d = 0.22$), and wives engaged in more positive helper behaviours ($t = 2.13$, $p = .03$, $d = 0.23$) and more negative helpee behaviours ($t = 2.02$, $p = .05$, $d = 0.17$) than husbands during lab sessions. There were no other differences between husbands and wives on corresponding support behaviours.

Within-spouse correlations are in Table 2. Generally, there were positive within-spouse associations among positive helpee and helper behaviours, and positive support behaviours were negatively associated with negative support behaviours. Husbands' stress reactivity was positively associated with husbands' negative helper behaviours, and wives' stress reactivity was positively associated with wives' negative helpee behaviours. All other correlations between stress reactivity and support behaviours were non-significant.

Cross-spouse correlations are in Table 3. Spouses' stress reactivity was positively associated with partners' stress reactivity but was not associated with partners' support behaviours. Within discussions, positive helpee behaviours were positively

associated with positive helper behaviours and negatively associated with negative helper behaviours. Negative helpee behaviours were positively associated with negative helper behaviours and negatively associated with positive helper behaviours. Across discussions, associations between spouses' and partners' helpee behaviours or between spouses' and partners' helper behaviours were generally significant and in the expected direction; for example, spouses' and partners' positive helpee behaviours were positively associated.

Helpee Support Behaviours Predicting Helper Support Behaviours

Before examining individual path coefficients, I assessed the overall goodness-of-fit of the hypothesized model as in Figure 1. After deleting non-significant paths (indicated by dashed lines in all figures), revised models were assessed. Fit indices indicated that the each of the husband ($\chi^2 (1, N = 145) = 1.16, p = .28, CFI = .99; SRMR = .02; RMSEA = .03$ [90% CI = .00, .23]) and wife models ($\chi^2 (6, N = 145) = 4.66, p = .59, CFI = 1.00; SRMR = .03; RMSEA = .00$ [90% CI = .00, .09]) was a good fit to the data.²

After assessing fit indices, I examined whether husbands' helpee behaviours predicted wives' helper behaviours (paths a through f in Figure 1). Results are in Figure 2. As expected, husbands' positive and negative helpee behaviours, and wives' positive and negative helper behaviours, were negatively associated. Husbands' positive helpee behaviours positively predicted wives' positive helper behaviours. Husbands' negative helpee behaviours positively predicted wives' negative helper behaviours. Contrary to

prediction, husbands' positive helpee behaviours positively predicted wives' negative helpee behaviours. However, the zero-order correlation between husbands' positive helpee behaviours and wives' negative helpee behaviours was negative (see Table 3). Also contrary to prediction, husbands' negative helpee behaviours did not predict wives' positive helper behaviours.

Second, I examined whether wives' helpee behaviours predicted husbands' helper behaviours (paths a through f in Figure 1). Results are in Figure 3. As expected, wives' positive and negative helpee behaviours, and husbands' positive and negative helper behaviours, were negatively associated. Wives' positive and negative helpee behaviours positively predicted husbands' positive and negative helper behaviours, respectively. Contrary to prediction, wives' positive and negative helpee behaviours positively predicted husbands' negative and positive helper behaviours, respectively. However, the two related zero-order correlations were negative (see Table 3).

Stress Reactivity as a Predictor of Support Behaviours

Next, I examined whether stress reactivity predicted support behaviours. I first examined the model for husband worry topic, and whether husbands' stress reactivity predicted helpee behaviours and wives' stress reactivity predicted helper behaviours. As shown in Figure 2, husbands' and wives' stress reactivity did not predict positive or negative support behaviours. Second, I examined the model for wife worry topic and whether wives' stress reactivity predicted helpee behaviours and husbands' stress reactivity predicted helper behaviours. As shown in Figure 3, stress reactivity did not

predict husbands' or wives' positive support behaviours (paths g and h). As expected, husbands' stress reactivity positively predicted their negative helpee behaviours, and wives' stress reactivity positively predicted their negative helper behaviours.

Invariance Analyses of Husband and Wife Worry Topic Models

Next, I used invariance analyses to test whether associations between helpee and helper behaviours significantly differed depending on whose topic (husband or wife) was being discussed. Using a univariate procedure, I constrained paths c to e (as in Figure 1) to be equal across the two models. I then examined the change in chi-square ($\Delta\chi^2$) from the baseline model to the constrained model for each path. Corresponding paths that were significantly different are indicated by bolded lines and coefficients in Figures 2b and 3b. Significant $\Delta\chi^2$ are reported below; all other $\Delta\chi^2$ were non-significant.

First, I examined the path from spouses' positive helpee behaviours to partner's positive helper behaviours (path c in Figure 1). When constraining the coefficients between husband and wife worry topic models to be equal, the change in chi-square was significant ($\Delta\chi^2$ ($\Delta df = 1$, $N = 145$) = 5.28, $p = .02$, $d = 0.39$). Results indicated that the path coefficient in the wife worry topic model (Figure 3b) was stronger and more positive than the path coefficient in the husband worry topic model (Figure 2b). That is, when wives described their problems or expressed their worries appropriately, husbands were more likely to reciprocate with expressions of empathy than when husbands expressed their worries appropriately and wives were responding.

Second, I examined the path from spouses' negative helpee behaviours to partners' negative helper behaviours (path e in Figure 1). When constraining the coefficients between husband and wife worry topic models to be equal, the change in chi-square was significant ($\Delta\chi^2$ ($\Delta df = 1$, $N = 145$) = 4.78, $p = .03$, $d = .37$). Results indicated that the path coefficient in the husband worry topic model (Figure 2b) was stronger and more positive than the path in the wife worry topic model (Figure 3b). That is, when husbands were expressing pessimism about the future or demanding help from wives, wives were more likely to reciprocate with criticism or expressions of contempt than when wives were expressing pessimism about the future or demanding help and husbands were responding.

Partners' Stress Reactivity as a Moderator of the Associations Between Spouses' and Partners' Support Behaviours and Spouses' Stress Reactivity and Helpee Behaviours

In the final set of analyses, I examined whether partners' stress reactivity moderated associations between spouses' helpee behaviours and partners' helper behaviours (paths c to f) and between spouses' stress reactivity and helpee behaviours (paths g and i). I included all paths from the proposed model, including any paths that were non-significant but not including associations between partner stress reactivity and helper behaviours (paths h and j). I tested the husband and wife worry topic models separately. As with the invariance analyses described above, I tested the equivalence of the paths in two separate models, one in when partners' stress reactivity was low and one when partner's stress reactivity was high. Again using a univariate procedure, I

examined whether the $\Delta\chi^2$ was statistically significant at each step to determine the equivalence of paths across the two models. Figures 4 and 5 present corresponding paths that were significantly different using bolded lines and coefficients. Significant $\Delta\chi^2$ are reported below; all other $\Delta\chi^2$ were non-significant.

First, I examined the model for husband worry topic and whether wives' stress reactivity moderated associations between husbands' helpee behaviours and wives' helper behaviours and between husbands' stress reactivity and husbands' helpee behaviours. Results, presented in Figure 4, indicated no significant differences between path coefficients in the high versus low wife stress reactivity models. Thus, wives' stress reactivity did not moderate any of the paths in the model for husband worry topic.

Second, I examined the model for wife worry topic and whether husbands' stress reactivity moderated associations between wives' helpee behaviours and husbands' helper behaviours and between wives' stress reactivity and wives' helpee behaviours. Results, presented in Figure 5, indicated that path e ($\Delta\chi^2 (\Delta df = 1, N = 145) = 5.11, p = .02, d = .38$) and path i ($\Delta\chi^2 = 10.58, p = .001; d = .56$) significantly differed depending the level of husbands' stress reactivity. As expected, when husbands' stress reactivity was high, the association between wives' negative helpee behaviours and husbands' negative helper behaviours was stronger and more positive than when husbands stress reactivity was low. That is, when husbands reported more tension or irritability, they were more likely to respond to wives' criticisms or complaints with withdrawal, defensiveness, or contempt than when husbands reported less tension or irritability. However, contrary to prediction, when husbands' stress reactivity was high, the association between wives' stress reactivity and wives' negative helpee behaviour was

weaker and less positive than when husbands stress reactivity was low. That is, when husbands reported more tension or irritability, their tense or irritable wives were less likely to express pessimism or demand support than when husbands reported less tension or irritability.

Discussion

In this study, I examined whether the quality of spouses' helpee behaviours were associated with their partners' helper behaviours and whether stress reactivity predicted spouses' or partners' support behaviours. I also examined whether associations between spouses' and partners' support behaviours, or spouses' stress reactivity and helpee behaviours, differed depending on whose worry topic (husband or wife) was being discussed or on partners' stress reactivity. Results generally supported hypotheses with some notable exceptions.

First, as expected and consistent with previous research (e.g., Pasch & Bradbury, 1998), within-spouse associations between positive and negative support behaviours were negative. That is, when spouses engage in fewer appropriate requests for help, empathic statements, or offers of tangible assistance, they are more likely to blame, criticize, or withdraw from the discussion. Furthermore, there was evidence of positive and negative reciprocity in support discussions. Specifically, when spouses expressed their worries in helpful ways, their partners tended to respond with empathy or offers of assistance. When spouses expressed pessimism about the future or criticized their partners, partners tended to be defensive, withdraw from the conversation, or express contempt for the spouse. These associations suggest that, in addition to individual-level predictors of support behaviours, the way in which spouses and partners collectively engage in support discussions are also important (cf.

Bodenmann, 2005). In addition, the way in which the dyad collectively copes with stress or adversity may help to explain spousal concordance in marital satisfaction (e.g., Kurdek, 1999) and mental health issues (e.g., Butterworth & Rodgers, 2006). Contrary to prediction, positive helpee behaviours positively predicted negative helper behaviours and for wives, negative helpee behaviours positively predicted husbands' positive helpee behaviours. However, as expected the relevant zero-order cross-spouse associations between positive and negative support behaviours were negative. Thus, these path coefficients appear to be an artifact of the model when other paths (e.g., within-spouse associations between positive and negative support behaviours) are taken into account. Furthermore, any strong interpretations of these results should not be made without replications in future studies.

Second, I examined whether stress reactivity predicted support behaviours. Results indicated that, as expected, more reported tension or irritability in the days prior to the support discussions predicted more pessimism, criticism, or withdrawal during wives' worry topic discussions. Contrary to prediction, stress reactivity did not predict positive support behaviours during wife worry topic discussions, nor did it predict any support behaviours during husband worry topic discussions. This suggests that the physical and emotional toll of stress is a detrimental factor in support discussions, at least when wives discuss their worries. It also suggests that when spouses take on certain roles in marital relationships (i.e., helpee or helper), the degree of frustration, irritability, or tension may be more salient when wives are expressing worries or describing problems. This may occur because women's worries following stressful events might require more cognitive or emotional resources from both spouses than

men's worries (e.g., Gitchel, Roessler, & Turner, 2011; Neff & Karney, 2004). Furthermore, in the current sample wives' higher stress reactivity may have been more salient and thus detrimental to support discussions when were discussing their own (rather than their husbands') worries. Thus, husbands and wives may have greater difficulty managing negative cognitions and emotions when stress reactivity is high during wife, rather than husband, worry topic discussions.

Third, I examined whether the relative strength of the associations between helpee and helper support behaviours was dependent on whose worry topic (husband or wife) was being discussed. Results indicated that when wives engaged in more appropriate requests for help or analysis of the problem, husbands were more likely to respond with empathy or helpful advice than when husbands requested help appropriately and wives were responding. In addition, when wives discussed their worries and engaged in more expressions of criticism or pessimism, husbands were less likely to respond with defensiveness or contempt than when husbands discussed their worries and expressed criticism or pessimism with wives responding. It may be that the demand-withdraw pattern of negative communication observed in marital conflict (e.g., Christensen & Heavey, 1990) is less likely to occur in support discussions when wives are in the helpee role than when husbands are in the helpee role. That is, it is possible that wives' non-marital worries (and related criticisms of husbands' attempts at support) are not as strongly linked to husbands' esteem needs or self-worth as husbands' worry topics (e.g., Sharabi & Harpaz, 2011). For example, husbands may be less likely to be defensive when wives criticize the way husbands are supporting them than when wives criticize the way in which husbands are coping with job-related stress. Thus, husbands

may take less defensive postures when wives criticize or demand help during wife worry topic discussions. Taken together, these results contradict the marital support gap hypothesis (e.g., Belle, 1982; Steil, 2000) and suggest that husbands are more appropriately responsive, and better able to inhibit negative responses, than wives. One explanation for this discrepancy is that whereas the quality of support is generally similar between husbands and wives in observed support discussions (e.g., Sullivan et al., 2010; Verhofstadt et al., 2007), wives may have more need for support than husbands (e.g., Edwards, Nazroo, & Brown, 1998), leading to differences in perceptions of partner support. Thus, while the frequency or quality of support may be similar between husbands and wives, wives may be less satisfied with the amount of support received from husbands (e.g., Lawrence et al., 2008).

Finally, I examined whether helper stress reactivity moderated associations between helpee and helper support behaviours, and between helpee stress reactivity and helpee support behaviours. First, results indicated that when wives discussed their worries, husbands' stress reactivity moderated associations between wives' negative helpee behaviours and husbands' negative helper behaviours. Specifically, when husbands were more tense or irritable, they were more likely to reciprocate wives' criticisms or demands for help with defensiveness, contempt, or withdrawing than when husbands were less tense or irritable. This suggests that husbands may have more difficulties inhibiting negative reactions to wives' demands for help when husbands are more agitated or frustrated, perhaps because cognitive or emotional resources (e.g., Neff & Karney, 2004) or emotion regulation skills (e.g., Fruzzetti & Iverson, 2006) required to inhibit negative reactions may diminish, making it more likely that husbands

respond negatively. Second, husbands' stress reactivity moderated the positive association between wives' stress reactivity and wives' negative helpee behaviours. However, contrary to prediction the association became weaker and less positive when husbands' stress reactivity was high rather than low. This suggests that tense or irritable wives are less likely to demand help or express pessimism when their husbands are more tense or irritable. While counterintuitive, it may be that these tense or irritable wives are engaging in perspective-taking—they may empathize with their already cognitively and emotionally taxed husbands, and therefore inhibit demands for help as to not place any added burden on their tense husbands. They may also be wary of engaging in negative exchanges with their already taxed or tense husbands. Regardless, this finding should be replicated before strong interpretations are made regarding wives' stress reactivity and support-seeking behaviours.

Strengths and Limitations

There are several design and data analytic advantages to the study. First, the sample size allowed for detection of medium or large effect sizes (Cohen, 1995). Second, the observation and coding of spousal support behaviours observed in the lab session allowed for a more direct test of dyadic coping (e.g., Bodenmann, 2005) than the sampling of spouses and their partners together through other means (e.g., concurrent self-report data or structured interviews). Third, the use of multi-method data (i.e., self-report and observational data) provided for a better operationalization of study variables (e.g., Brewer & Hunter, 2005). Specifically, observations of spousal support may produce better measures of support quality than self-report surveys, which are prone to

response biases. Conversely, self-report data may better represent the internal experiences of stress reactivity (emotional and physiological) that otherwise may be difficult to measure objectively. Fourth, the use of simultaneous path models and the APIM approach (e.g., Cook & Kenny, 2005) better account for the dependency of data between spouses over conventional methods (e.g., multiple regression).

Despite these advantages, results should be interpreted in light of several limitations. First, regarding the method, the couples were not randomly selected from the local population of engaged couples. In Canada, information regarding marriage licenses is not publicly available, and thus researchers cannot obtain a potentially random sample of all couples in a given geographical area. However, participants in this study comprise a relatively diverse group of people culturally and economically, which may render these findings more generalizable than previous marital studies that have almost exclusively focused on relatively well-off Caucasian samples. Second, the design of the study is cross-sectional, which precludes causal claims. Although stress reactivity was assessed in the days prior to support discussions, it does not preclude the possibility that the observed support behaviours reflect an ongoing shared history of support interactions which may have caused the supposed predictors. Third, couples completed the questionnaires and support interactions during the first few months of marriage when couples tend to be relatively more satisfied and supportive (e.g. Kurdek, 2005), and results may be less generalizable to more established couples. Fourth, the variability in negative support behaviours was relatively small. Thus, it may have been difficult to detect significant findings within the sample that may otherwise be present in the population of married couples in North America.

Implications and Conclusion

Results from this study may help clinicians to make informed decisions when treating distressed spouses. For example, it may be that a focus on self-care strategies or emotion regulation early in therapy (e.g., Christensen, Jacobsen, & Babcock, 1995), particularly when wives need to share their worries with husbands, may be a priority before communication-based interventions can begin. Alternatively, it may be helpful for clinicians to focus on how both spouses can engage in more adaptive support behaviours, or perhaps recommend different coping strategies for each spouse when one spouse is agitated or irritable (e.g., emotion regulation) while the partner is not (e.g., empathy skills). Clinicians may also wish to provide additional support when spouses take on certain roles in marital discussions (e.g., when discussing husbands' worries) or with individual spouses in certain dyadic contexts (e.g., when tense husbands are responding to wives' worries).

On a final note, some marital researchers conceptualize dyadic coping through gender-based hypotheses. Whether studying spousal support through the prism of the marital support gap hypothesis (e.g., Steil, 2000), marital conflict within the demand-withdraw pattern (e.g., Noller, 1993), or intimate partner violence using a patriarchal perspective (e.g., Kernsmith, 2005), gender paradigms may lead to conclusions that are either simplistic or incompatible with other perspectives or empirical studies (e.g., Bartholomew & Cobb, 2011; Christensen & Heavey, 1990; Sullivan et al., 2010). This study demonstrates that a stronger focus on individual (e.g., stress reactivity), dyadic (e.g., positive and negative reciprocity), situational (e.g., helpee and helper roles), and contextual factors (e.g., stressful events) may facilitate more complete

conceptualizations of spousal support and help to explain differences in marital outcomes (e.g., Pasch & Bradbury, 1998). Researchers must understand the roles these factors play within the dyad and ultimately how couples collectively cope with adversity in marriage.

References

- Acitelli, L. K. (1996). The neglected links between marital support and marital satisfaction. In G. R. Pierce, B. R. Sarason, I. G. Sarason (Eds.), *Handbook of social support and the family* (pp. 83-103). New York, NY: Plenum Press.
- Arbuckle, J. L. (2011). Amos (Version 20.0) [Computer Program]. Chicago: SPSS.
- Barrett, P., Petrides, K., Eysenck, S., & Eysenck, H. (1998). The Eysenck Personality Questionnaire: An examination of the factorial similarity of P, E, N, and L across 34 countries. *Personality and Individual Differences*, 25, 805-819. doi:10.1016/S0191-8869(98)00026-9
- Bate, B., & Bowker, J. (1997). *Communication and the sexes* (2nd ed.). Prospect Heights, IL: Waveland.
- Bartholomew, K., & Cobb, R. J. (2011). Conceptualizing relationship violence as a dyadic process. In L. M. Horowitz, S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 233-248). Hoboken, NJ: John Wiley & Sons Inc.
- Beach, S. R. H., Arias, I., & O'Leary, K. D. (1986). The relationship of marital satisfaction and social support to depressive symptomatology. *Journal of Psychopathology and Behavioural Assessment*, 8, 305–316. doi:10.1007/BF00960728
- Beck, A. T., Steer, R.A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, 8, 77–100. doi:10.1016/0272-7358(88)90050-5
- Belle, D. (1982). The stress of caring: women as providers of social support. In Goldberger, L. & Breznitz, S. (Eds.): *Handbook of stress: Theoretical and clinical aspects* (pp. 496–505). New York: Free Press.
- Biehle, S. N., & Mickelson, K. D. (2012). Provision and receipt of emotional spousal support: The impact of visibility on well-being. *Couple and Family Psychology: Research and Practice*, 1, 244-251. doi:10.1037/a0028480
- Bodenmann, G. (1995). A systemic-transactional conceptualization of stress and coping in couples. *Swiss Journal of Psychology*, 54, 34-49.

- Bodenmann, G. (2005). Dyadic Coping and Its Significance for Marital Functioning. In T. A. Revenson, K. Kayser, G. Bodenmann, T. A. Revenson, K. Kayser, & G. Bodenmann (Eds.), *Couples coping with stress: Emerging perspectives on dyadic coping* (pp. 33-49). Washington, DC: American Psychological Association. doi:10.1037/11031-002
- Brewer, J., & Hunter, A. (2005). *Multimethod research: A synthesis of styles*. Thousand Oaks, CA: Sage Publications.
- Butterworth, P., & Rodgers, B. (2006). Concordance in the mental health of spouses: Analysis of a large national household panel survey. *Psychological Medicine*, 36, 685-697. doi:10.1017/S0033291705006677
- Christensen, A., Jacobson, N. S., & Babcock, J. C. (1995). Integrative behavioural couple therapy. In N. S. Jacobson and A. S. Gurman (Eds.), *Clinical handbook of couple therapy* (pp. 31-64). New York, NY: Guilford Press.
- Cook, W. L., & Kenny, D. A. (2005). The Actor-Partner Interdependence Model: A model of bidirectional effects in developmental studies. *International Journal of Behavioural Development*, 29, 101-109.
- Coyne, J. C., & Downey, G. (1991). Social factors and psychopathology: Stress, social support, and coping processes. *Annual Review of Psychology*, 42, 401-425. doi:10.1146/annurev.ps.42.020191.002153
- Crawford, J. R., & Henry, J. D. (2003). The Depression, Anxiety, and Stress Scales (DASS): Normative data and latent structures in a large non-clinical sample. *British Journal of Clinical Psychology*, 42, 111-131.
- Cutrona, C. E. (1996). *Social support in couples: Marriage as a resource in times of stress*. Thousand Oaks, CA: Sage Publications, Inc.
- Cutrona, C. E., & Suhr, J. A. (1992). Controllability of stressful events and satisfaction with spouse support behaviours. *Communication Research*, 19, 154-174. doi:10.1177/009365092019002002
- Davila, J., Karney, B. R., Hall, T. W., & Bradbury, T. N. (2003). Depressive symptoms and marital satisfaction: Within-subject associations and the moderating effects of gender and neuroticism. *Journal of Family Psychology*, 17, 557-570. doi:10.1037/0893-3200.17.4.557
- Denson, T. F., Spanovic, M., & Miller, N. (2009). Cognitive appraisals and emotions predict cortisol and immune responses: A meta-analysis of acute laboratory social stressors and emotion inductions. *Psychological Bulletin*, 135, 823-853. doi:10.1037/a0016909

- Dixon-Gordon, K. L., Chapman, A. L., Lovasz, N., & Walters, K. (2011). Too upset to think: The interplay of borderline personality features, negative emotions, and social problem solving in the laboratory. *Personality Disorders: Theory, Research, And Treatment*, 2, 243-260. doi:10.1037/a0021799
- Edwards, A. C., Nazroo, J. Y., & Brown, G. W. (1998). Gender differences in marital support following a shared life event. *Social Science and Medicine*, 46, 1077-1085. doi:10.1016/S0277-9536(97)10039-9
- Feeney, B. C., & Collins, N. L. (2010). An attachment theoretical perspective on social support dynamics in couples: Normative processes and individual differences. In K. T. Sullivan & J. Davila (Eds.), *Support processes in intimate relationships* (pp. 89-120). New York: Oxford University Press.
- Fruzzetti, A. E., & Iverson, K. M. (2006). Intervening with couples and families to treat emotion dysregulation and psychopathology. In D. K. Snyder, J. Simpson, J. N. Hughes (Eds.), *Emotion regulation in couples and families: Pathways to dysfunction and health* (pp. 249-267). Washington, DC: American Psychological Association. doi:10.1037/11468-012
- Gitchel, W., Roessler, R. T., & Turner, R. C. (2011). Gender effect according to item directionality on the Perceived Stress Scale for adults with multiple sclerosis. *Rehabilitation Counseling Bulletin*, 55, 20-28. doi:10.1177/0034355211404567
- Hu, L., & Bentler, P. M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55. doi:10.1080/10705519909540118
- Jacobson, N. S., and Margolin, G. M. (1979). *Marital therapy: Strategies based on social learning and behavior exchange principles*. New York: Brunner/Mazel.
- Johnson, M. D., Cohan, C. L., Davila, J., Lawrence, E., Rogge, R. D., Karney, B. R., Sullivan, K. T., & Bradbury, T. N. (2005). Problem-Solving Skills and Affective Expressions as Predictors of Change in Marital Satisfaction. *Journal of Consulting and Clinical Psychology*, 73, 15-27. doi:10.1037/0022-006X.73.1.15
- Kane, H. S., Jaremka, L. M., Guichard, A. C., Ford, M. B., Collins, N. L., & Feeney, B. C. (2007). Feeling supported and feeling satisfied: How one partner's attachment style predicts the other partner's relationship experiences. *Journal of Social And Personal Relationships*, 24, 535-555. doi:10.1177/0265407507079245
- Kernsmith, P. (2005). Exerting Power or Striking Back: A Gendered Comparison of Motivations for Domestic Violence Perpetration. *Violence and Victims*, 20, 173-185. doi:10.1891/vivi.2005.20.2.173

- Knoll, N., Burkert, S., Luszczynska, A., Roigas, J., & Gralla, O. (2011). Predictors of support provision: A study with couples adapting to incontinence following radical prostatectomy. *British Journal of Health Psychology*, 16, 472-487. doi:10.1348/135910710X522860
- Kurdek, L. (1999). The nature and predictors of the trajectory of change in marital quality for husbands and wives over the first 10 years of marriage. *Developmental Psychology*, 35, 1283-1296.
- Kurdek, L. A. (2005). Gender and Marital Satisfaction Early in Marriage: A Growth Curve Approach. *Journal of Marriage and Family*, 67, 68-84. doi:10.1111/j.0022-2445.2005.00006.x
- Lawrence, E., Bunde, M., Barry, R. A., Brock, R. L., Sullivan, K. T., Pasch, L. A., & ... Adams, E. E. (2008). Partner support and marital satisfaction: Support amount, adequacy, provision, and solicitation. *Personal Relationships*, 15, 445-463. doi:10.1111/j.1475-6811.2008.00209.x
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33, 335-343. doi:10.1016/0005-7967(94)00075-U
- Neff, L. A., & Karney, B. R. (2004). How does context affect intimate relationships? Linking external stress and cognitive processes within marriage. *Personality and Social Psychology Bulletin*, 30, 134-148. doi:10.1177/0146167203255984
- Noller, P. (1993). Gender and emotional communication in marriage: Different cultures or differential social power? *Journal of Language and Social Psychology*, 12, 132-152. doi:10.1177/0261927X93121008
- Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and the Family*, 45, 141-151. doi:10.2307/351302
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Olson, D. A., & Shultz, K. S. (1994). Gender differences in the dimensionality of social support. *Journal of Applied Social Psychology*, 24, 1221-1232. doi:10.1111/j.1559-1816.1994.tb00555.x
- Pasch, L. A., Harris, K. W., Sullivan, K. T., & Bradbury, T. N. (2004). The social support interaction coding system. In P. Kerig and D. Baucom (Eds.) *Couple Observational Coding Systems* (pp. 319-334). Mahwah, N.J.: Lawrence Erlbaum.

- Pasch, L. A., & Bradbury, T. N. (1998). Social support, conflict, and the development of marital dysfunction. *Journal of Consulting and Clinical Psychology*, 66, 219-230. doi:10.1037/0022-006X.66.2.219
- Pasch, L. A., Bradbury, T. N., & Davila, J. (1997). Gender, negative affectivity, and observed social support behaviour in marital interactions. *Personal Relationships*, 4, 361–378. doi:10.1111/j.1475-6811.1997.tb00151.x
- Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behaviour*, 19, 2-21. doi:10.2307/2136319
- Pierce, G., Lakey, B., Sarason, I., & Sarason, B. (Eds.). (1997). *Sourcebook of social support and personality*. New York, NY US: Plenum Press.
- Rudolph, K. D., Hammen, C., Burge, D., Lindberg, N., Herzberg, D., & Daley, S. E. (2000). Toward an interpersonal life-stress model of depression: The developmental context of stress generation. *Development and Psychopathology*, 12, 215-234.
- Sharabi, M., & Harpaz, I. (2011). Gender and the relative centrality of major life domains: Changes over the course of time. *Community, Work and Family*, 14, 57-62.
- Sirri, L., Magelli, C., & Grandi, S. (2011). Predictors of perceived social support in long-term survivors of cardiac transplant: The role of psychological distress, quality of life, demographic characteristics, and clinical course. *Psychology and Health*, 26, 77-94. doi:10.1080/08870440903377339
- Smith, D. A., Vivian, D., & O'Leary, K. D. (1990). Longitudinal prediction of marital discord from premarital expressions of affect. *Journal of Consulting and Clinical Psychology*, 58, 790-798. doi:10.1037/0022-006X.58.6.790
- Steil, J. M. (2000). Contemporary marriage: Still an unequal partnership. In C. Hendrick & S. S. Hendrick (Eds.), *Close relationships: A sourcebook* (pp. 124–136). Thousand Oaks, CA: Sage.
- Story, L. B., & Repetti, R. L. (2006). Daily occupational stressors and marital behavior. *Journal of Family Psychology*, 20, 690-700.
- Sullivan, K. T., & Davila, J. (Eds.) (2010). *Support processes intimate relationships*. New York: Oxford University Press.
- Sullivan, K. T., Pasch, L. A., Johnson, M. D., & Bradbury, T. N. (2010). Social support, problem solving, and the longitudinal course of newlywed marriage. *Journal of Personality and Social Psychology*, 98, 631-644. doi:10.1037/a0017578
- Tannen, D. (1990). *You just don't understand: Men and women in conversation*. New York: Ballentine Books.

- Verhofstadt, L. L., Buysse, A., & Ickes, W. (2007). Social support in couples: An examination of gender differences using self-report and observational methods. *Sex Roles*, 57, 267-282. doi:10.1007/s11199-007-9257-6
- Wan, C. K., Jaccard, J., & Ramey, S. L. (1996). The relationship between social support and life satisfaction as a function of family structure. *Journal of Marriage and the Family*, 58, 502-513. doi:10.2307/35351

Footnotes

1. In a separate set of analyses, I included T1 neuroticism (Barrett et al., 1998) as a control variable to examine whether individual differences in personality (i.e., emotional lability) may be a factor in observed support behaviours (Pasch et al., 1997). The results from these analyses were similar to the results in the current study and thus neuroticism was not included as a control variable in the current study.
2. I also examined an alternate model in which helper support behaviours predicted helpee support behaviours (i.e., arrowheads reversed for paths c – f in Figure 1). Fit indices for husband ($\chi^2 (1, N = 145) = .11, p = .74, CFI = 1.00; SRMR = .01; RMSEA = .00$ [90% CI = .00, .16]) and wife worry topic models ($\chi^2 (6, N = 145) = 3.42, p = .75, CFI = 1.00; SRMR = .04; RMSEA = .00$ [90% CI = .00, .08]) suggest that this alternate model fits the data at least as well as the hypothesized model. It is probably most accurate to suggest that spousal support interactions are interdependent and therefore bidirectional (cf. Bodenmann, 2005). However, there were insufficient degrees of freedom to construct the model using a bidirectional framework. In determining which path to use in constructing the hypothesized model, I reasoned that spouses generally provide support-seeking cues first (e.g., expressing stress or worry nonverbally; talking about the problem directly) before their partners attempt to respond. Thus, I concluded that the hypothesized model as in Figure 1, on a conceptual level, was more appropriate than the alternate model.

Tables and Figures

Table 1. Means and Standard Deviations of Stress Reactivity and Support Behaviours

	Husbands		Wives	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Stress Reactivity	3.37*	3.29	4.15*	3.71
Positive Helper Behaviour	0.49*	0.21	0.54*	0.22
Positive Helpee Behaviour	0.53	0.23	0.52	0.21
Negative Helper Behaviour	0.07	0.11	0.05	0.11
Negative Helpee Behaviour	0.04*	0.09	0.06*	0.14

Notes. *N* = 145 husbands and wives.

* Indicates the mean difference between husbands and wives was significant ($p < .05$).

Table 2. Within-Spouse Correlations Among Stress Reactivity and Support Behaviours

	Stress Reactivity	Positive Helpee	Negative Helpee	Positive Helper	Negative Helper
Stress Reactivity	—	.02	.32**	.04	.05
Positive Helpee	-.09	—	-.41**	.26**	-.30**
Negative Helpee	.06	-.36**	—	-.34**	.49**
Positive Helper	-.03	.25**	-.11	—	-.46**
Negative Helper	.19*	-.18*	.34**	-.51**	—

Note: Correlations for husbands are below the diagonal and correlations for wives are above the diagonal.

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

Table 3. Cross-Spouse Correlations Among Stress Reactivity and Support Behaviours

	<u>Wife</u>				
	Stress Reactivity	Positive Helpee	Negative Helpee	Positive Helper	Negative Helper
<u>Husband</u>					
Stress Reactivity	.24**	.03	.03	-.11	.13
Positive Helpee	-.03	.27**	-.12	.68**	-.26**
Negative Helpee	.13	-.36**	.48**	-.18*	.34**
Positive Helper	.06	.25**	-.15	.21**	-.22**
Negative Helper	-.03	-.18*	.35**	-.12	.22**

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

Figure 1. Hypothesized Path Model

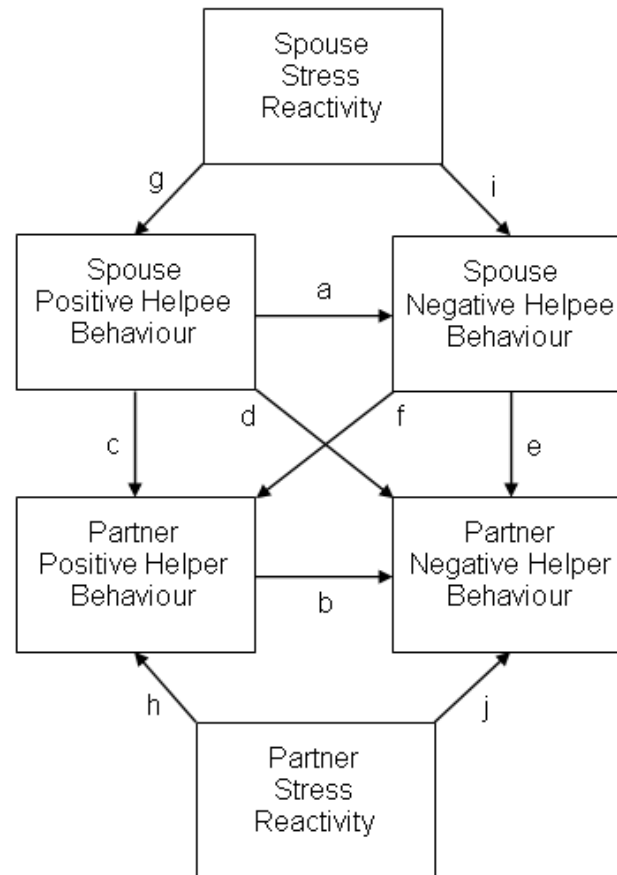
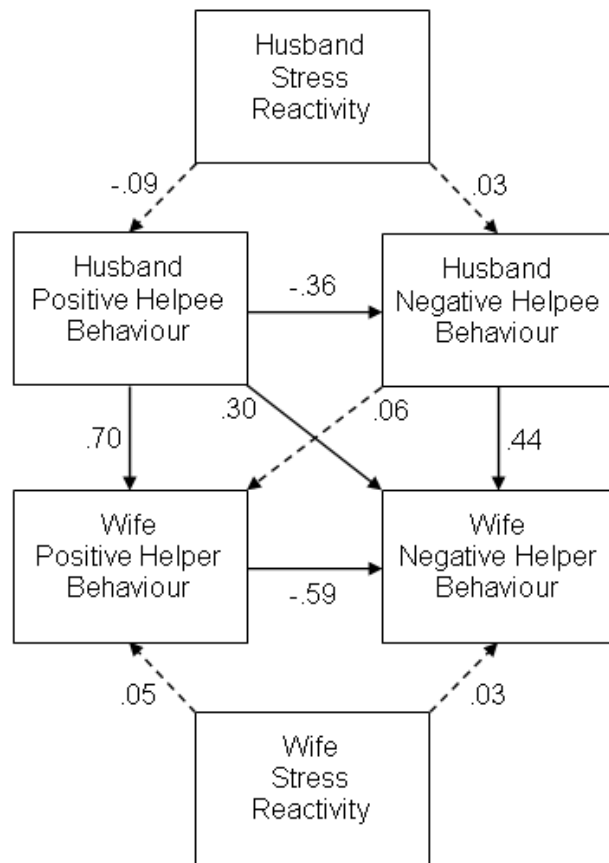
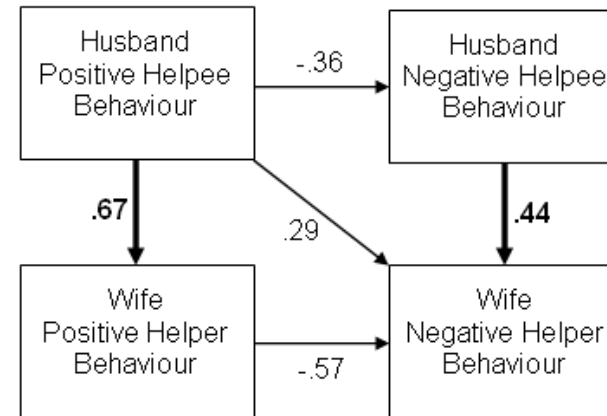


Figure 2. Original and Revised Models of Husbands' Helpee Behaviours and Husbands' and Wives' Stress Reactivity Predicting Wives' Helper Behaviours

A. Husband Worry Topic (Original Model)



B. Husband Worry Topic (Revised Model)

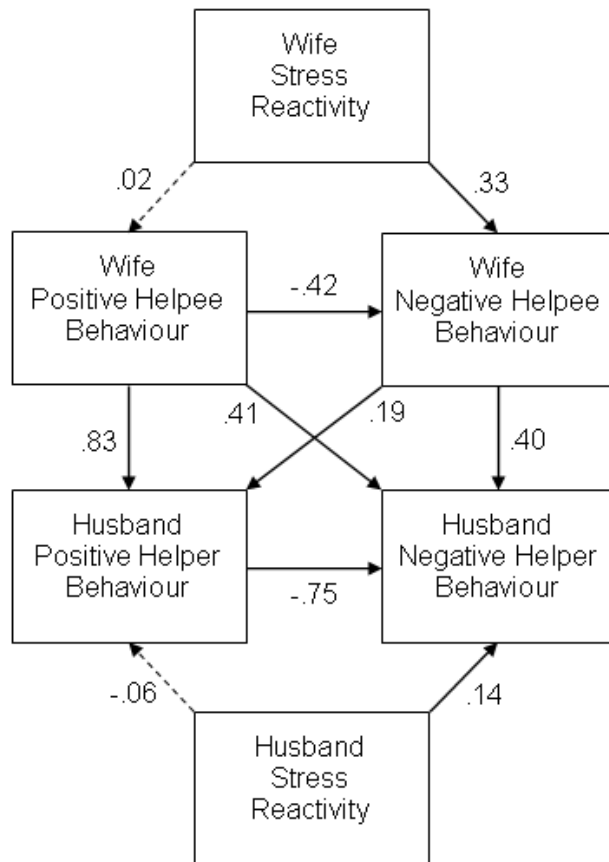


Note. Non-significant paths are indicated by dashed lines.

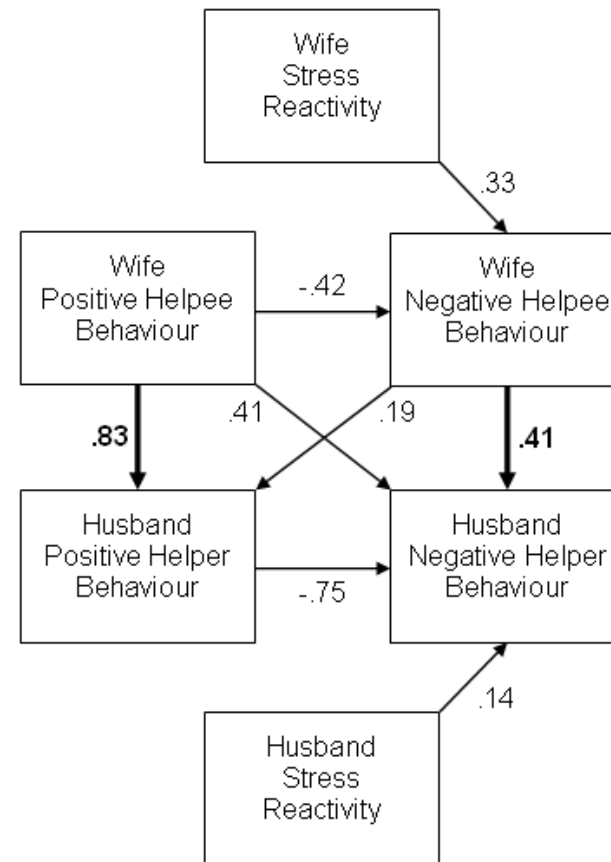
Bolded lines indicate the corresponding paths between husband and wife models in Figures 2 and 3 significantly differ.

Figure 3. Original and Revised Models of Wives' Helpee Behaviours and Wives' and Husbands' Stress Reactivity Predicting Husbands' Helper Behaviours

A. Wife Worry Topic (Original Model)



B. Wife Worry Topic (Revised Model)

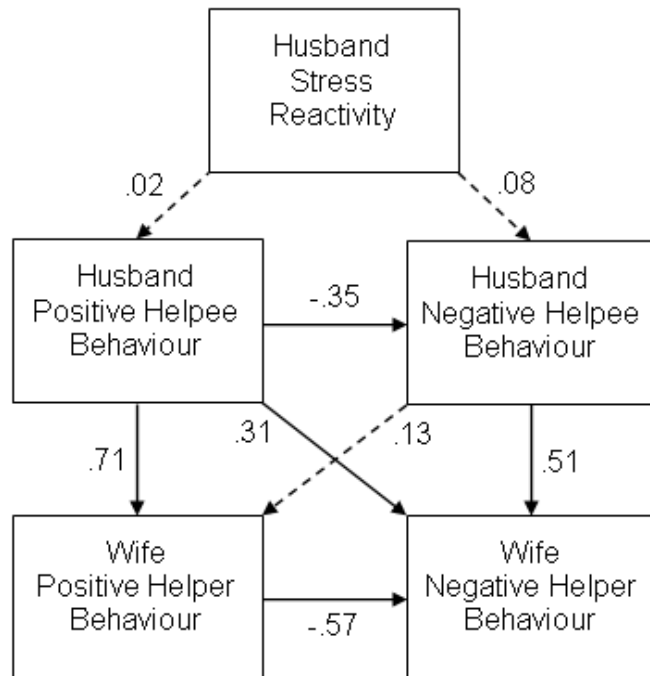


Note. Non-significant paths are indicated by dashed lines.

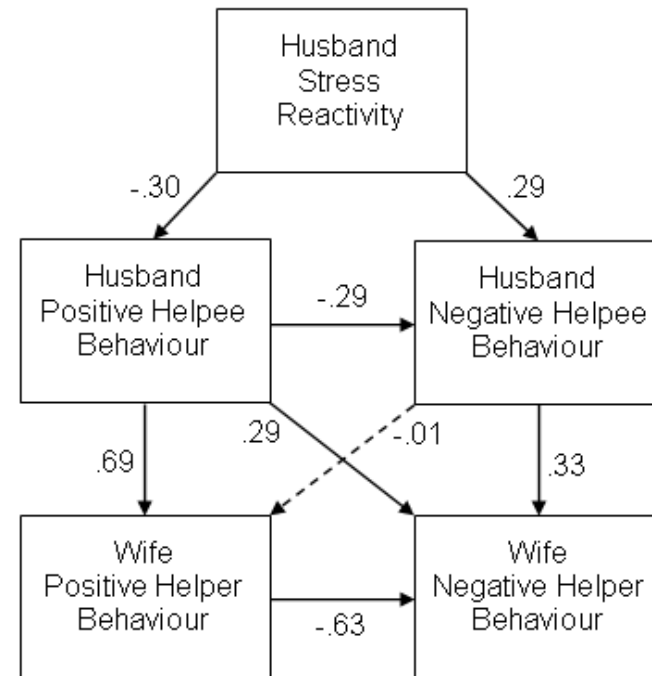
Bolded lines indicate the corresponding paths between husband and wife models in Figures 2 and 3 significantly differ.

Figure 4. Wives' Stress Reactivity as a Moderator of the Associations between Husbands' Stress Reactivity and Helpee Support Behaviors and Husband Helpee and Wife Helper Support Behaviours

A. Wife Low Stress Reactivity



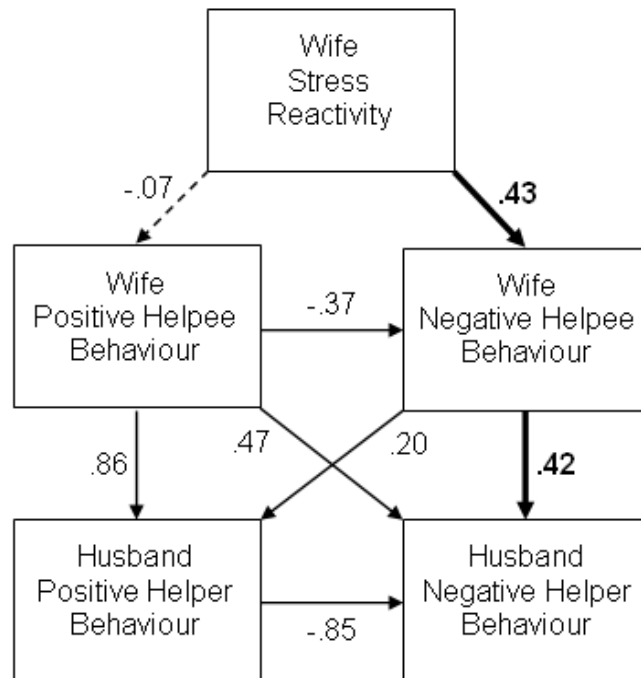
B. Wife High Stress Reactivity



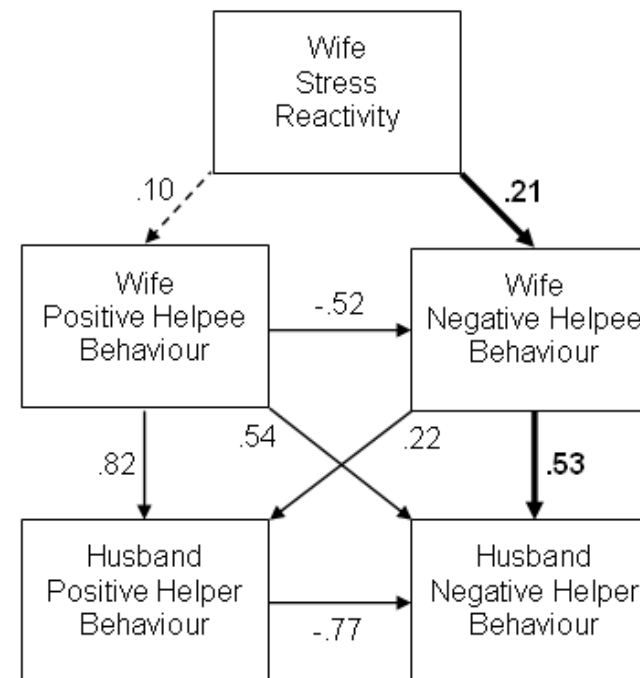
Note. Non-significant paths are indicated by dashed lines.
 Bolded lines indicate that the paths differ between the two models.

Figure 5. Husbands' Stress Reactivity as a Moderator of the Associations between Wives' Stress Reactivity and Helpee Support Behaviors and Wife Helpee and Husband Helper Support Behaviours

A. Husband Low Stress Reactivity



B. Husband High Stress Reactivity



Note. Non-significant paths are indicated by dashed lines.
 Bolded lines indicate that the paths differ between the two models.