FARMING AND WORK-FAMILY FACILITATION: AN EXAMINATION OF POSITIVE SPILLOVER AND CROSSOVER EFFECTS AMONG A SAMPLE OF FARM COUPLES

Justin M. Sprung

A Dissertation

Submitted to the Graduate College of Bowling Green
State University in partial fulfillment of
the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2013

Committee:

Steve Jex, Advisor

Marc Simon
Graduate Faculty Representative

Russell Matthews

Harold Rosenberg

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

This research was partially supported by the National Institute for Occupational Safety and Health Pilot Research Project Training Program of the University of Cincinnati Education and Research Center. Grant #T42/OH008432-07

ABSTRACT

Steve Jex, Advisor

This study expands upon the contextualization of the work-family interface by examining positive work-family experiences within the agricultural industry. Both spillover and crossover effects were examined among a sample of 217 married dyads in which farming was the husbands' primary occupation. Results indicated that both husbands and wives experienced more work-family facilitation than work-family conflict. Moreover, wives tended to experience more family-to-work facilitation than work-to-family facilitation. Regarding individual spillover, multiple positive spillover effects were found for both husbands and wives. Additionally, direct crossover effects revealed that individual attitudes (husbands' work engagement and wives' farm satisfaction) were related to partners' reported work-family facilitation. Furthermore, husbands' work-family facilitation was positively related to wives' psychological wellbeing, while wives' work-family facilitation was not significantly related to husbands' psychological wellbeing. Overall, findings suggest the potential beneficial impact of the integrated work-family dynamic associated with the farming profession. Implications of these findings, as well as directions for future research, are discussed.

Dedicated to hard-working farmers everywhere.

ACKNOWLEDGMENTS

First of all, I am extremely grateful to my advisor, Steve Jex, for his mentorship and patience during this project, as well as everything he has done for me throughout my graduate career – it has been a pleasure working with you. Second, I would like to thank the members of my dissertation committee – Russell Matthews, Harold Rosenberg, and Marc Simon – for their helpful insights throughout the dissertation process. Third, I would like to extend a huge thank you to Dave Miller, Randy Heitz, and the Iowa Farm Bureau for being extremely helpful throughout the duration of this project. Fourth, I would like to thank the University of Cincinnati's Education and Research Center Pilot Research Program, which, in collaboration with the National Institute for Occupational Safety and Health, provided funding for this study. Finally, thank you mom and dad for the love, support, and encouragement that allowed me to get to where I am today.

TABLE OF CONTENTS

Page

CHAPTER 1: INTRODUCTION 1

The Work-Family Interface 4

Role Theory 4

Boundary Theory 5

Spillover and Crossover 7

The Unique Context of Farmers and Farm Couples 8

Spillover among Farmers 10

Prevalence of WFC and WFF among Farmers 10

The Positive Spillover Process 14

Crossover among Farm Couples 20

Positive Crossover 22

Exploratory Hypotheses 26

WFC as a Moderator of Positive Spillover 26

Spousal Support as a Moderator of the Crossover Process 28

CHAPTER 2: METHOD 30

Participants and Procedures 30

Measures 31

Data Analysis 34

CHAPTER 3: RESULTS 36

WFF and WFC Prevalence 36

Path Model 37

Exploratory Moderators 41

CHAPTER 4: DISCUSSION 43

Spillover 46

Crossover 48

Exploratory Moderators 51

Theoretical Implications 53

Practical Implications 54

Limitations 55

Future Directions 56

Conclusion 58

REFERENCES 59

APPENDIX A: MEASUREMENT SCALES 79

APPENDIX B: HUMAN SUBJECTS REVIEW BOARD APPROVAL 84

LIST OF TABLES

Table		Page
1	Means, Standard Deviations, Ranges, and paired t tests for Study Variables……..	73
2	Intercorrelations and coefficient alphas among study variables	74
3	Summary of Hierarchical Regression Analysis for Husbands' Work Engagement and Wives' Perceptions of Spousal Support in Relation to Wives' WFF……	75

LIST OF FIGURES

Figure		Page
1	Conceptual model of work-family spillover-crossover among farming couples.....	76
2	Final empirical model with unstandardized and standardized path coefficients	77
3	The moderating effect of perceived spousal support on the relationship between husbands' work engagement and wives' work-family facilitation……..	78

CHAPTER 1: INTRODUCTION

"Unlike in most families, work and family roles are intertwined in farm families and the boundaries between work and family, duties and relaxation are often unclear."
(Melberg, 2003, p. 56)

Farming is commonly recognized among the most stressful and hazardous occupations in the U.S. due to farmers' increased exposure to physical safety hazards, as well as their dependence on – and the unpredictability of – the weather, economic conditions, and market prices for products sold (Ramesh & Madhavi, 2009; Swisher, Elder, Lorenz, & Conger, 1998). However, a feature of farming that is often overlooked within occupational health research is the unique social and psychological environment within the farming profession, namely work-family issues. Gregoire (2002) points out that work in this occupation is intimately tied with nearly every aspect of farmers' own lives and the lives of their families across several generations. Accordingly, unlike typically studied occupations, farming represents a unique work-family situation in which "…boundaries are often diffused and individual issues become family issues, and family issues become business issues, and vice versa" (Hennon 2012, p. 264).

Though the work-family interface has become an increasingly important topic of study within industrial-organizational (I-O) psychology, the agricultural industry has received little attention in this area, let alone within psychological research in general. To date, work-family research has focused almost exclusively on white collar, managerial, and professional occupations (Casper, Eby, Bordeaux, & Lockwood, 2007). This is a clear shortcoming, as the field of I-O psychology strives to enhance the work experience of workers within all occupations. Because of the one-sided focus of previous organizational research, Zickar (2010) has recently advocated that future research expand beyond studying "typical" jobs, work settings, and organizations in order to also focus on humanistic concerns and less studied populations.

Congruent with Zickar's (2010) request for more humanistic research within I-O psychology, a recent trend within the work-family literature is an emphasis on contextualization, as the interaction between work and family is a dynamic process that varies according to one's particular occupational and family situation (Kossek, Baltes, & Matthews, 2011). There is evidence to suggest that significant variance in work-family interactions is attributable to the occupation in which someone works (Dierdorff & Ellington, 2008). Furthermore, a recent qualitative study suggests that the boundaries between the work and family domains may differ between white and blue-collar workers, with white-collar employees having more flexibility regarding work-family boundaries (Poppleton, Briner, & Keifer, 2008). Although there has been an emphasis on occupational contextualization of late, work-family studies including farming typically lump farming, fishing, and forestry together as one occupation, and this group still usually represents the smallest percentage of any occupation studied (e.g., Grzywacz & Butler, 2005). Therefore, it is currently unknown whether work-family findings generalize to the agricultural industry. Accordingly, the current study extends work-family research by examining the work-family interface among a sample of farmers.

In addition to the deficiency in occupational diversity, the focus on the individual and lack of attention given to the spouse/partner within a dyadic context has been cited as a weakness of work-family research (Hammer, Colton, Caubet, & Brockwood, 2002). Evidence within the work-family literature suggests that individual experiences may crossover and influence the wellbeing of one's partner as well (Westman & Etzion, 1995; Westman & Etzion, 2005). Moreover, Westman (2001) proposes that crossover effects occur more frequently when one partner has a high-stress occupation (e.g., farming), and encourages the examination of crossover effects within these populations. Because of the unique work-family context associated with

farming, crossover may be especially prevalent among farming couples. In addition, Hammer and Zimmerman (2011) suggest that work-family research should focus on a more integrative model by exploring not only negative aspects, but also positive aspects of the work-family interface among dyadic samples. Thus, the current study examined the process of positive work-family interactions within a unique dyadic context: farm couples.

Furthermore, Westman, Brough, and Kalliath (2009) recently noted that future research should seek to examine potential moderators of the crossover process. Within the work-family literature, there have been few studies examining variables that may potentially influence the extent and severity to which crossover occurs among dyads. Accordingly, another objective of the current study was to examine two potential moderators of the positive dyadic work-family interactions between farmers and their partners. Therefore, the current study advances the work-family literature by gaining a greater understanding of interactions associated with the work-family interface among a novel population.

Finally, Bentley (1994) points out that the neglect of farmers in psychological research is likely due to several barriers between scientists and farmers that limit their ability to collaborate with each other. Among these barriers, Bentley (1994) notes the following: farmers represent a difficult population for scientists to reach; there is a great social distance between farmers and scientists; farmers and scientists have differing goals and values; both scientists and researchers have time constraints that make it inconvenient to work together. While these barriers still exist, the increased difficulty in accessing an agricultural sample is seen as worth the effort, as farmers represent an important sector of the U.S. economy and a unique population that can advance work-family research. As a final objective, I hope that this study will act as a bridge for the disconnect that is often found between the differing values and goals of farmers and scientists –

demonstrating the importance of farmers and scientists working in collaboration – while at the same time sparking increased interest in other understudied occupations.

The Work-Family Interface: Theoretical Background

Role Theory

Work and family are two of the most important aspects of many peoples' lives. As such, it is no surprise that previous research has found these two domains to impact each other. The majority of work-family research stems from role theory. According to role theory, everyone has multiple life roles and each role has a set of expectations associated with it (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). Within role theory, there are two competing perspectives: role scarcity and role expansion. The role scarcity perspective suggests that engaging in one role makes participating in other roles more difficult – in other words, roles may conflict with each other. Work-family conflict (WFC) represents a specific form of inter-role conflict in which role pressures from the work and family domain are mutually incompatible (Greenhaus & Beutell, 1985). This construct is recognized as bidirectional, as work can interfere with family life and family can interfere with work life (Frone, 2003). For example, a farmer may need to skip a family meal due to time pressures associated with his job demands – this demonstrates work interfering with family. Family interfering with work, on the other hand, may occur when attending a family event (e.g., a child's sporting event, event with wife) prevents the farmer from completing all of his chores for the day. The WFC construct has been the primary focus of previous work-family research.

While the majority of work-family research has focused primarily on the negative side of the work-family interface (i.e., WFC), recently there has been increased attention given to the more beneficial aspect of work-family interactions. In contrast to the role scarcity perspective,

the role enhancement perspective states that energy, skills, and resources in one role may promote functioning within other roles – thus, roles may enhance or facilitate one another (Marks, 1977). Work-family facilitation (WFF)[1] refers to the extent to which participation in one role (i.e. work) is made easier through participation in another (i.e. family; Frone, 2003) and is also recognized as a bidirectional construct that is distinct from WFC (Grzywacz & Butler, 2005). For example, due to the close proximity of work and family, work may facilitate the family role for farmers in that they are quickly able to transition from work activities to family activities (e.g., going for a walk with spouse, playing catch with son). Similarly, family may facilitate work when family members are able to provide extra help or support with farm-related tasks (e.g., farmer's spouse keeping track of finances).

Both WFC and WFF have been linked with various important outcomes, including the following: job and life satisfaction, organizational commitment, turnover intentions, and burnout (Allen, Herst, Bruck, & Sutton, 2000); mental health (Grzywacz & Bass, 2003); and physical health and well being (Van Steenbergen & Ellemers, 2009). The prevalence and important outcomes associated with WFC and WFF demonstrates the significance of understanding how these concepts affect workers – and their partners – within various environments. Boundary theory provides further theoretical background for the examination of WFF and WFC in the current study.

Boundary Theory

The central theme of boundary theory is that work and family represent two separate domains that influence one another. According to boundary theory, individuals create and maintain boundaries in order to separate different life roles (i.e., work and family). Additionally,

[1] The construct of WFF has also been recognized as work-family enhancement and enrichment (Greenhaus & Powell, 2006; Grzywacz & Marks, 2000) – for the purposes of the current study, these terms are viewed as synonymous.

people move back and forth daily between their multiple life roles, crossing boundaries and making transitions in order to meet the demands and goals associated with each role (Ashforth, Kreiner, & Fugate, 2000). For some individuals, the contrast between work and home is minor and requires only slight transitions. Others, on the other hand, experience greater contrast between work and family and require more extreme transitions (Clarke, 2000). Boundary theory suggests two factors that influence the severity of transitions between roles: boundary flexibility and permeability.

Flexibility refers to the extent to which a role can be enacted in various settings and times (e.g., working away from one's primary place of work). Permeability, on the other hand, represents the extent to which a role allows one to be physically located in one domain but psychologically or behaviorally engaged in the other (e.g., interacting with family while located in the work domain; Ashforth et al., 2000). In general, inflexible and impermeable boundaries are associated with segmentation (separation) of work and family and may make crossing boundaries problematic. In contrast, highly flexible and permeable boundaries tend to be associated with role overlap and similarity, leading to integration of work and family. As such, role transitions may occur frequently and with little effort among highly integrated roles. There are benefits and costs associated with both segmentation and integration (for a full review, see Ashforth et al., 2000). While some individuals may prefer a certain work-family lifestyle and choose the extent to which their work and family roles are integrated or segmented based on personal preference, farming represents a situation where work and family are inextricably linked due to the nature of the profession (Gregoire, 2002). As such, this population represents a novel context in the study of the work-family literature due to the highly permeable boundaries between work and family.

Spillover and Crossover

Both WFC and WFF may occur as a result of transitioning between work and family boundaries. In addition to distinguishing between the detrimental (WFC) and beneficial (WFF) nature of the interaction between work and family, it has also been established that work-family interactions can occur at both the individual and the dyadic level. The terms "spillover" and "crossover" are frequently used to distinguish between the level at which the interaction occurs. These concepts will be discussed in turn.

Spillover. Work-family spillover represents an individual process, and occurs when a person's experience in one domain (i.e. work) is transferred into another domain (i.e. family) and affects his/her experience in that domain (Bolger, DeLongis, Kessler, & Wethington, 1989). This process is bidirectional, as work can influence family experiences and family can influence work experiences. In addition, spillover can be associated with both positive and negative experiences (e.g., Song, Foo, & Uy, 2008). For example, negative spillover may involve stress from the work domain leading to stress, fatigue, and inability to be productive at home. On the other hand, positive spillover may occur when happiness from a successful day at work carries over into family activities and increases engagement in that domain. Thus, individual WFC and WFF represent examples of negative and positive spillover, respectively. In sum, the spillover model suggests that there is a connection between what happens in an individual's work and family lives. Previous work-family research has been dominated by the spillover model (Ho, Chen, Cheung, Liu, & Worthington, 2013).

Crossover. While spillover refers to the transfer of stress or attitudes from one domain to another within a *single* person, crossover extends this model by acknowledging that transmission may occur across individuals at a *dyadic* level. Because individuals in relationships

are influenced by their partners, the behaviors and attitudes of one member of a dyad cannot be fully understood without considering the other member of the dyad. Accordingly, crossover involves transmission from one person to another, within the same domain. For instance, negative crossover occurs when an employee experiences stress in the workplace, which in turn leads to stress experienced by the individual's partner at home (Westman & Etzion, 2005). An example of positive crossover, on the other hand, would be when an individual's partner is very happy and supportive at home, which in turn leads to positive emotions and attitudes for the individual at work. Therefore, similar to spillover, crossover can be bidirectional and may act in a positive or negative manner.

Although several work-family studies have demonstrated direct spillover and crossover effects (e.g., Matthews, Del Priore, Acitelli, & Barnes-Farrell, 2006; Westman & Etzion, 2005), the majority of spillover and crossover research has focused on the negative side of work-family interactions (i.e., WFC) among white-collar employees. In a recent review of crossover theory research, Bakker, Westman, & Emmerik (2009) noted that an important direction for future research is further examination of the positive side of the work-family interface (i.e., WFF). In the current study, a positive perspective is taken in the examination of a novel (blue-collar) population: farm couples. The agricultural industry provides a unique context to explore work-family spillover and crossover due to the close proximity and inseparable nature of work and family among farm families. This population contains a unique individual and dyadic context that clearly diverges from previously studied populations. This is reviewed below.

The Unique Context of Farmers and Farm Couples

The examination of farmers and farm couples represents a unique and important contribution to the contextualization of work-family research due to the nature of the farming

profession. Farming not only represents a dangerous occupation in terms of physical hazards, but also a novel context in terms of the different psychological and sociological environment compared to the traditionally studied organizational setting.

Although farmers may have fewer opportunities to develop close social ties with people outside of their families due to their relative social and geographic isolation (Eberhardt & Pooyan, 1990), this may serve as a beneficial aspect within their family lives. Farmers consistently work in close proximity to their family members, as the farm is typically located on the family residence. Accordingly, even when farmers are "home" they are still at work, in a sense, and vice versa. This may potentially lead to increased bonds and stronger family connections than in a customary working dyad. Therefore, although traditional blue-collar work (e.g., manufacturing) is typically viewed as segmented from non-work life (Nippert-Eng, 1995), farming represents a blue-collar profession where work and family constantly overlap and are highly integrated. In fact, farming is commonly referred to as a "lifestyle" and "way of life" – perhaps more-so than any other industry – due to the unique socio-cultural context and demands within the profession (Vanclay, 2011).

Moreover, and most importantly for the current study, family farms involve spouses working together on a common enterprise (Gasson, 1992). Farmers' spouses[2] typically work closely with their partner, from keeping track of finances and business issues to helping in the barn and in the fields, even when the spouse is employed off the farm (Berkowitz & Perkins, 1984). In addition, spouses tend to collaborate not only on the physical work to be done, but also in order to make business decisions (Danes & Lee, 2004). Consequently, there is much more overlap in terms of "work" and "home" activities and conversations than in typically studied

[2] Due to the farming demographic, the current study examined male farmers with female spouses, as this represents the majority of farming couples.

working dyads. Therefore, a farmer and his spouse must be on the same page regarding personal and business issues. Furthermore, farming represents a more integrated work-family setting than typical self-employed or family businesses as well. While many self-employed workers and/or family businesses have the option of setting boundaries in order to separate work and family – and may go to great lengths to do so (e.g., changing the location of either the home or the business; Loscocco, 1997) – farming families typically do not have this option, as the "workplace" and "home" are in the same location.

The close proximity of work and family within the farming profession is likely to lead to differing work-family experiences for this population than for traditionally studied organizational employees. As such, there is a clear need for further research in this area, as the farming population has been neglected in previous occupational research.

Spillover among Farmers

As previously mentioned, farming represents a profession in which work is intimately tied with nearly every other aspect of life. As such, the roles and boundaries between work and family are much more permeable than many other professions (Gregoire, 2002; Hennon, 2012). Though previous studies have demonstrated both positive and negative work-family spillover effects, most of what we know regarding these issues is based on managerial and professional employees in traditional work-family arrangements (Casper et al., 2007). As such, one objective of the present study was to examine the extent to which the farm population may differ from the results of previous findings regarding WFC and WFF.

Prevalence of WFC and WFF among Farmers

Work-family conflict has been shown to be a prevalent phenomenon, as over 70 percent of men and women report at least some interference between work and non-work demands

(Schieman, Milkie, & Glavin, 2009). Much less is known, however, regarding the prevalence of WFF. In general, it seems that the work-family literature assumes WFC as more common than WFF, but this is rarely tested. A recent qualitative study examined the frequency of both positive and negative work-nonwork events among a small sample of white-collar ($N = 20$) and blue-collar ($N = 18$) workers. In both the white-collar and blue-collar contexts, there was no significant difference between positive and negative experiences (Poppleton et al., 2008). These results suggest that workers' experiences tend to be relatively balanced in terms of positive and negative work-nonwork interactions (i.e., WFC and WFF). In the current study, however, it was expected that there would be a significant difference in the amount of WFC and WFF experienced among farmers and their wives.

Due to the close proximity and increased permeability of work and family among farmers, it is likely that work-family interactions within this sample may be different than in typically studied populations. Previous research among organizational employees suggests that weak (flexible and permeable) boundaries may actually be detrimental for worker productivity and well-being. For example, Hecht and Allen (2009) found that individuals with weak boundaries at work and home tend to report higher inter-role conflict due to a "culture of availability" for completing work tasks. Similarly, others have suggested that technology use may blur work and family boundaries, resulting in negative consequences for workers (Chesley, 2005). In these traditional organizational settings, however, workers typically have a choice of integrating or segmenting their work and non-work roles. The fact that workers have a choice may potentially be the reason for the negative outcomes, since these workers have more control over how weak or strong their work-family boundaries can be. For farmers, there is much less

discretion concerning this issue, as work and family are integrated and largely overlap due to the nature of the profession.

In the farming context, I believe that the weak boundaries between work and family are a necessity and serve as a beneficial aspect of farming, leading to more beneficial work-family experiences (i.e., WFF) than detrimental experiences (i.e., WFC). This is consistent with boundary theory, which suggests that weak boundaries may lead to easier transitions between work and home domains. While there are not many studies that have examined this scenario, Tuttle and Garr (2009) found preliminary evidence suggesting that self-employed women tend to report higher levels of WFF than organizationally employed women. Because work and family frequently interact and contribute to important activities and interests in other life domains in the farming context, it was expected that WFF would be experienced to a greater extent (i.e., more prevalent) than WFC among farmers and their wives. As previously mentioned, work experiences can influence the family domain (W-F), and vice versa (F-W). As such, both directions of WFF and WFC were examined.

Hypothesis 1a: Husbands and wives will report higher mean scores for W-F facilitation than for W-F conflict

Hypothesis 1b: Husbands and wives will report higher mean scores for F-W facilitation than for F-W conflict

Regarding the direction of work-family interactions, previous research suggests that work and family boundaries tend to be asymmetrically permeable in terms of WFC, with work interfering with family more often than family interfering with work (Frone, Russell, & Cooper, 1992). On the contrary, very little research has examined the prevalence of the different directions of WFF. Poppleton et al.'s (2008) qualitative study provided preliminary evidence

concerning the prevalence of the direction in which facilitation occurred between work and nonwork domains. It was found that among both white- and blue-collar workers, work-nonwork facilitation occurred more frequently than nonwork-work facilitation. These results are similar to those found concerning WFC, suggesting that the family boundary may be more permeable than the work boundary with regard to WFF as well.

In contrast to previous research speculation, because the work-family dynamic is much different among farm families, with the family being a large part of the farm (i.e., family business), I expect that F-W facilitation will occur more often than W-F facilitation. Among a sample of older working women (above the age of 50), Gordon, Whelan-Berry, & Hamilton (2007) found that F-W facilitation was experienced more frequently than W-F conflict. This was a restricted sample, however, as the study only included women over the age of 50. In the present study, farm couples (both husbands and wives) were expected to experience more F-W than W-F facilitation, regardless of age.

Danes, Zuiker, Kean, and Arbuthnot (1999) suggested that family businesses can potentially benefit from the overlap of family and business principles, as this overlap can foster a sense of commitment and identification among family members. This is especially relevant for farm families, as the family can provide a multitude of support behaviors to the primary farmer in order to feel a sense of value and contribution to the family business. For example, in addition to social support, family members can provide a larger amount of instrumental support (e.g., transporting tools/product to the farmer in the field, lending an extra hand with daily chores, equipment maintenance) than in traditionally studied contexts. These behaviors range from minor gestures such as delivering supper to the farmer while working in the fields, to taking on some of the primary workload and responsibility for major farm tasks (e.g., operating machinery

during harvest). Similarly, wives may also benefit from having the husband in such close proximity, possibly making it easier for him to take on household and/or child rearing responsibilities. Accordingly, it was hypothesized that F-W facilitation would be experienced more frequently among farm couples than W-F facilitation.

Hypothesis 2: Husbands and wives will report higher mean scores for F-W facilitation than W-F facilitation

The Positive Spillover Process

As previously mentioned, multiple studies have demonstrated that negative aspects of the work environment may influence stress and attitudes within the family domain, and vice versa (e.g., Chesley, 2005; Grzywacz, Almeida, & McDonald, 2002). Fewer studies, however, have examined the positive work-family spillover process. Studies that have examined positive spillover suggest beneficial outcomes among organizational employees. For example, Ilies, Wilson, and Wagner (2009) reported employee job satisfaction as a predictor of marital satisfaction and affective states at home. Similarly, WFF has been shown to be associated with life, family, and marital satisfaction (Hill, 2005). Moreover, Illies and colleagues (2009) found that employees with highly integrated work and family roles tend to show stronger spillover effects. Therefore, the highly integrated nature of the farming profession was viewed as a beneficial aspect for husbands and wives in the current study, as both were expected to experience strong positive spillover between work and family domains.

A construct that has been receiving increased attention regarding positive spillover is work engagement. Work engagement is defined as a positive work-related state of mind in which workers have an energetic and effective connection to their work activities (Schaufeli, Bakker, & Salanova, 2006). Recent research has shown the beneficial effects of work

engagement in terms of work-related outcomes such as job performance (e.g., Bakker & Bal, 2010), absenteeism (e.g., Schaufeli, Bakker, & Van Rhenen, 2009), commitment, and turnover intentions (Halbesleben, 2010). Much of the research on engagement, however, has focused on beneficial outcomes within the work domain with little attention given to work engagement's contribution to the family domain and general psychological health. The current study addressed this gap in the literature.

Although fewer studies have examined work engagement's relation to the family domain, Halbesleben, Harvey, & Bolino (2009) found that work engagement not only has effects within the work environment, but also outside of work. Additionally, the authors found that the effects of work engagement may not always be positive, as engagement was positively related to WFC among working adults due to employees' willingness to 'go the extra mile.' In the current study, however, work engagement was expected to be beneficial for the family domain due to the interconnected nature of farming families. Two studies provide preliminary evidence that work engagement can have a positive effect on family life. For example, Siu et al. (2010) found that work engagement was positively associated with WFF among a sample of hospital and factory workers. Similarly, Culbertson, Mills, and Fullagar (2012) found similar results among a sample of 52 extension agents. It seems especially likely in the current population that work engagement is beneficial for the family domain due to the integration of work and family among farm families. Because autonomy and skill variety – two primary characteristics of farming – serve as key antecedents of work engagement (Bakker, Albrecht, & Leiter, 2011), farmers represent an appropriate sample to examine the positive effects of work engagement on the family domain. Accordingly, farmers' work engagement was expected to be positively related to WFF. See Figure 1 for a graphic depiction of all study hypotheses.

Hypothesis 3a: Farmers' work engagement will be positively related to self-reported WFF

Furthermore, a recent review of the engagement literature suggests that to date, only a few studies have examined whether work engagement is related to health, and that the results from these studies are inconclusive (Bakker et al., 2011). As a result, more research must be conducted to gain a better understanding of work engagement's relation to health outcomes. One exception that has examined work engagement's relation to health is Hakanen and Schaufeli (2012). These authors found that work engagement was negatively related to depressive symptoms and positively related to life satisfaction; therefore, the authors addressed the notion that general wellbeing is not just the lack of depressive symptoms, but also the presence of a positive state (i.e., life satisfaction). Accordingly, the current study sought to build on this finding by examining work engagement's relation to an overall measure of psychological wellbeing. In line with Hakanen and Schaufeli's (2012) finding, the current study proposed that farmers' work engagement would be positively related to their general psychological wellbeing.

Hypothesis 3b: Farmers' work engagement will be positively related to self-reported psychological wellbeing

Regarding farm wives, it is well established that satisfaction in one life domain is related to satisfaction with other life domains (Ilies et al., 2009; Kossek & Ozeki, 1998). As previously mentioned, farming is commonly thought of as an overall lifestyle due to the unique context associated with the profession (Vanclay, 2011). Therefore, given the close proximity and integration of farming into the family domain, it seems likely that wives' satisfaction with this unique occupational lifestyle, regardless of their own primary occupation, may be related to

their individual WFF and general psychological wellbeing. This aspect – wives' satisfaction with her partners' occupation – has not been examined as an antecedent of WFF.

Farm couples lend an appropriate sample to test these effects, as the farmer's partner typically contributes to farm duties even when employed off the farm (Berkowitz & Perkins, 1984; Gasson, 1992). Moreover, farming represents a high stress job that may require more understanding and identification from the spouse in terms of coping with unpredictability in husbands' work hours and income (Eberhardt & Pooyan, 1990). Therefore, more so than in other dyadic samples, the wives' satisfaction with their partners' occupation is likely to influence her own work-family spillover and general wellbeing. Wives that are highly satisfied with the farming lifestyle will likely experience more positive outcomes than those who are less satisfied. For example, Hedlund, Berkowitz, and Bennett (1980) report that agreement among farm couples regarding the wife's role in the farm business is a significant source of stress among farm families. The authors went on to explain that many potential sources of stress among farm couples is related to the view of farming as an occupation *and* a lifestyle, and that this is what separates farm from non-farm families. As such, the degree to which a farmer's spouse is satisfied with the farming lifestyle may enhance or worsen her own work-family experiences. Accordingly, wives' farm satisfaction (defined as her overall satisfaction with the farming lifestyle) was expected to be positively associated with their WFF and overall psychological wellbeing.

Hypothesis 4a: Wives' farm satisfaction will be positively related to self-reported WFF

Hypothesis 4b: Wives' farm satisfaction will be positively related to self-reported psychological wellbeing

Along the lines of the resource enhancement perspective, the facilitation between multiple life roles may be beneficial for dealing with stressful circumstances and related to one's psychological wellbeing as well (Greenhaus & Powell, 2006; Marks, 1977). Moen, Dempster-McClain, and Williams (1992) provide support for this assertion, as they found that women who were involved in multiple roles reported better general health over time. Similarly, a more recent study among workers within a financial service organization discovered a positive association between WFF and non-work outcomes, such as home satisfaction and global life satisfaction (Van Steenbergen & Ellemers, 2007). Furthermore, a recent meta-analysis concluded that WFF tends to be positively related to mental health (McNall, Nicklin, & Masuda, 2010). Related to the current study, the close proximity paired with the increased integration and permeability of role boundaries among farm couples is likely to allow husbands and wives greater flexibility and access to resources within both work and family domains. This 'role enhanced' lifestyle was expected to be beneficial for husbands' and wives' psychological wellbeing. Therefore, the positive relationship between WFF and mental health within previous research was expected to be replicated in the current study.

Hypothesis 5: For both husbands and wives, individual WFF will be positively related to psychological wellbeing

In addition to the main effects of work engagement and WFF on psychological well-being, WFF has also been shown to serve as a mediator between work attitudes and positive work outcomes. For example, Gordon et al. (2007) found that WFF mediated the relation between work-family culture and several work outcomes (e.g., job satisfaction, organizational commitment, career satisfaction). More relevant to the current study, Allis and O'Driscoll (2008) demonstrated that WFF mediated the positive relation between psychological involvement in

family/personal activities and psychological wellbeing. This suggests that people who are highly engaged in their non-work pursuits may experience increased WFF, and in turn, better psychological wellbeing. The current study sought to extend on previous findings by examining WFF as a mediator between husbands' work engagement and psychological wellbeing. Given that WFF serves as a mediator between engagement in non-work pursuits and wellbeing, it seems likely that it will play a similar role within the relationship between work engagement and wellbeing.

In addition, given that WFF has been shown to serve as a mediator in the relation between an aspect of the work environment (i.e., work-family culture) and wellbeing (Gordon et al., 2007), WFF was expected to mediate the relation between wives' farm satisfaction and psychological wellbeing in the current study. Farm satisfaction represents an aspect associated with the family environment, as opposed to the work environment, and is expected to play a similar role to work-family culture in the current study. Due to the overlap of work and family in the farm context, it is likely that husbands' and wives' attitudes will also maintain direct effects on psychological wellbeing as well. As such, WFF was expected to mediate the relation between husbands' work engagement – and wives' farm satisfaction – and psychological wellbeing.

Hypothesis 6a: WFF will mediate the relation between husbands' work engagement and psychological wellbeing

Hypothesis 6b: WFF will mediate the relation between wives' farm satisfaction and psychological wellbeing

Finally, in addition to the above hypotheses regarding spillover onto psychological wellbeing, the current study expects individual psychological wellbeing to be negatively related

to self-reported physical symptoms (e.g., fatigue, loss of appetite). It is well established that mental and physical health tend to be reciprocally linked to one another (Robbins, Ford, & Tetrick, 2012). Furthermore, psychological and social factors are known to play an important role in determining one's physical health (Bishop, 1994), and there is evidence suggesting mental health as a predictor of physical health (Vaillant, 1979). However, few recent studies have examined mental health as a precursor to physical health.

Studies that have examined this relationship tend to view the relationship as a more long-term process, with mental health conditions (e.g., depression) leading to long-term health outcomes such as coronary heart disease (e.g., Carney, Freedland, Rich, & Jaffe, 1995). The current study, however, measures a common set of symptoms that people can develop during a short time period (e.g., headache, upset stomach; Spector & Jex, 1998) rather than chronic outcomes. Given the high degree of uncertainty associated with the farming lifestyle regarding weather conditions, work hours, and income, it is expected that psychological wellbeing will be positively associated with these relatively minor physical symptoms. For example, anxiety and concern over weather conditions and market prices – which are outside of the farmers' control – may lead to increased fatigue, inability to sleep, or lack of an appetite. Husbands and wives who experience less psychological strain may be less likely to experience those same physical symptoms.

Hypothesis 7: Individual psychological wellbeing will be negatively related to self-reported physical symptoms

Crossover among Farm Couples

As with spillover, previous research has demonstrated both positive and negative crossover effects among dyadic samples. This may occur through transmission of stress or

general affect. For example, negative crossover may occur through the transmission of WFC, burnout, and negative moods from one spouse to the other, while positive crossover may occur through the transmission of work engagement and positive moods from one spouse to the other (e.g., Bakker, Demerouti, & Schaufeli, 2005; Song et al., 2008). Similar to spillover, the majority of crossover research has focused on negative work-family interactions (e.g., Hammer, Allen, & Grigsby, 1997; Matthews et. al, 2006; Westman & Etzion, 2005), as this was the focus of the initial crossover model proposed by Westman (2001). Recently, however, work-family researchers have called for further examination of potential positive crossover effects between spouses (Hammer & Zimmerman, 2011; Westman et al., 2009). Furthermore, little is known regarding work-family interactions among family businesses and/or the self-employed, as these individuals are usually excluded from analyses (e.g., Hill, 2005). Accordingly, the current study adds to the growing body of research on positive work-family crossover by examining farming dyads.

Of relevance to the current study is the direct crossover between husbands and wives. Direct crossover occurs when the experience of one partner directly elicits a response in the partner. Westman and Vinokur (1998) suggest that this type of crossover effect occurs among closely related partners who share a great deal of their lives together. Although direct crossover effects are typically examined among parallel constructs between spouses (e.g., wife engagement and husband engagement; burnout, WFF, life satisfaction; Bakker et al., 2005; Carlson, Ferguson, Kacmar, Grzywacz, & Whitten, 2011; Demerouti, Bakker, & Schaufeli, 2005), few studies have examined the direct crossover effects from one spouse's attitude to their partners' WFF. The current study examined the direct crossover effects of one partners' attitudes, WFF,

and psychological wellbeing to their partners' WFF, psychological wellbeing, and physical symptoms, respectively.

Positive Crossover

As previously mentioned, there is little, if any, research examining positive crossover among individuals that are self-employed and/or members of a family business. Even though the overlap of business and family issues may potentially lead to some conflict between spouses among family business members, this overlap can also be a significant benefit for couples. In a review of family business research, Rothausen (2009) states that leaders of family businesses are in an opportune position to impact and determine the extent to which family and business systems support each other. Therefore, building upon the spillover hypotheses, the current study expected the attitudes of one spouse (i.e., husbands' work engagement, wives' farm satisfaction) to be positively associated with their spouses' reported WFF.

Although there is a substantial amount of evidence supporting negative crossover between couples, much less research has examined positive crossover. However, recent evidence suggests that positive crossover effects do occur. For example, Bakker et al. (2005) demonstrated positive attitude crossover between partners, finding a positive association between husbands' and wives' work engagement. Similarly, Carlson and colleagues (2011) found that WFF may crossover between supervisors and subordinates in an organizational setting. These two studies, however, examined reciprocal crossover among corresponding constructs (e.g., husband and wife WFF). Of more relevance to the current study are direct crossover findings among non-matching constructs.

Demerouti (2012) posits that one of the primary differences between positive crossover and negative crossover is that individual energy can be directly transmitted to the partners' home

resources, while negative experiences tend to cross over through a behavioral transmitter, such as social undermining. The author provided evidence for this assertion, demonstrating that the level of energy and motivation of one partner was positively associated with the other partners' perceived home resources and individual energy. This suggests that one partner's beneficial attitudes or experiences can have a positive impact on their partners' outcomes, both at work and at home. Applied to the current study, it was expected that husbands' work engagement would be positively related to wives' WFF. When farmers are highly engaged, they may create a positive, resourceful atmosphere for their wives at home, thereby enhancing wives' work-family interactions.

Previous research has also demonstrated that attitudes regarding the work environment, not just individual engagement attitudes, may cross over to influence partner work-family experiences. Ho et al. (2013) found that husbands' perceived workplace support was positively related to WFF experienced by their wives. This suggests that wives' perceived environment at home may contribute to husbands' WFF. Because the farm lifestyle is a large part of wives' environment, both at work and at home, it was expected to be positively associated with husbands' WFF. Similar to the hypothesized relation between husbands' work engagement and wives' WFF, when wives experience higher satisfaction and enjoyment with the farming lifestyle, they may be more likely to enhance their husbands' work-family interactions by creating a more positive, resourceful environment. As with the spillover hypothesis, wives' satisfaction with their husbands' occupation has not been examined within crossover research, and represents a novel contribution to the literature.

Hypothesis 8: Husbands' work engagement, and wives' farm satisfaction, will be positively related to their partners' self-reported WFF

Because family and business systems tend to be integrated and supportive of each other in family businesses, an individual's experience of WFF may also be beneficial for his/her partners' psychological wellbeing. Rothausen (2009) suggests that, contrary to typical businesses, family businesses tend to emphasize the health and well-being of family members as an important part of business goals. One feature of the farm environment that may contribute to this type of positive crossover is the idea that work and leisure may not necessarily be completely separate entities for farm families. Instead, farm work and leisure tend to be overlapping and infused into daily life (Trussell & Shaw, 2007). For example, farmers may go for walks and/or relax with their partners between tasks during the day. As such, the farming population has more opportunities for positive crossover, in terms of WFF's relation to psychological wellbeing, than typically studied organizational employees.

As previously mentioned, it has been shown that the actual experience of WFF may crossover between dyads (Carlson et al., 2011). Additionally, Westman, Keinan, Roziner, and Benyamini (2008) demonstrated the direct crossover of self-rated health among a sample of Russian couples. Few studies, however, have examined the potential for WFF to crossover to partners' psychological health. The literature on spillover has provided evidence that individual WFF tends to be related to self-reported personal health (e.g., Grzywacz, 2000; McNall et al., 2010; Van Steenbergen & Ellemers, 2007; 2009). The current study sought to examine the potential for direct crossover of WFF onto partner psychological wellbeing.

One study was found that has examined this phenomenon. Hammer, Cullen, Neal, Sinclair, and Shafiro (2005) conducted a longitudinal investigation on the crossover of positive work-family spillover and depression, finding significant crossover effects for both husbands and wives. Specifically, it was found that one partners' positive work-family spillover was negatively

related to their spouses' depression. The current study sought to build on this finding by examining the crossover of WFF onto spouses' overall wellbeing. This is one of the first studies to examine the direct crossover effect of individual WFF on partner psychological health. Given the unique work-family dynamic associated with farm couples, it seems likely that work-family experiences of one partner will be associated with the other partners' psychological wellbeing.

Hypothesis 9: Individual WFF will be positively related to partners' self-reported psychological wellbeing

Finally, no research to date has examined the potential crossover of mental health on partners' physical health. As previously reviewed, it has been established that mental health is related to physical health (e.g., Bishop, 1994; Carney et al., 1995). Similarly, the work-family literature provides evidence that positive work-family experiences may be related to individual physical health (Grzywacz, 2000; Van Steenbergen & Ellemers, 2009). Regarding crossover effects on physical health, Bakker's (2009) study seems to be most relevant to this topic. In this study, the author found evidence of negative health crossover between spouses, finding that individual burnout was related to partners' self-rated health among a sample of medical residents and teachers. As this was the only previous study examining physical health crossover, the current hypothesis is more exploratory than the previous hypotheses.

Given the potential for increased psychological distress among the farming occupation (i.e., uncertainty) for both husbands and wives, as well as the overlap of work and family and close proximity of work and home, it was expected that one partners' psychological distress would be related to the others' physical symptoms. Similar to individual spillover, in which one's own worry and anxiety may potentially lead to physical symptoms, it is possible – especially in the farm setting – that the partners' psychological health may be related to the individuals'

physical symptoms. This is in line with crossover theory, as direct crossover occurs when the strain of one partner produces a sympathetic reaction in the other, thereby increasing the level of distress in the latter (Westman & Vinokur, 1998). Additionally, as previously mentioned, crossover is likely to occur among partners who are closely related and share a great deal of their lives together. Given that this is the case for farm couples, it is possible that individual psychological wellbeing may be related to partner physical health.

Hypothesis 10: Individual psychological wellbeing will be negatively related to partners' self-reported physical symptoms

Exploratory Hypotheses

In addition to general spillover and crossover effects, previous research has demonstrated that certain variables may influence the extent to which work-family spillover occurs (e.g., Aryee, Luk, Leung, & Lo, 1999; Ilies et al., 2009), with a primary focus on negative work-family interactions (i.e., WFC). Therefore, the current study investigates WFC as a potential moderator in the positive spillover process. Additionally, while spillover has received the majority of attention with regard to moderators, Westman et al. (2009) recently noted that future research should seek to examine potential moderators of the crossover process as well. Accordingly, the current study examined spousal support as a potential moderator of positive crossover between spouses. These topics will be discussed in turn.

WFC as a Moderator of Positive Spillover

Because WFC and WFF have been established as distinct constructs that can co-occur (Grzywacz & Butler, 2005), WFF has been examined as a potential resource for ameliorating the negative outcomes associated with WFC. For example, Grzywacz and Bass (2003) found that work-family facilitation buffered the negative relation between work-family conflict and mental

health. This suggests that experiencing WFF may provide useful resources that help workers effectively deal with WFF. Similarly, other studies examining moderators typically examine how potential resources, such as social support or career involvement, may weaken the relation between WFC and detrimental outcomes (e.g., Carlson & Perrewe, 1999; Greenhaus, Parasuraman, & Collins, 2001). However, it is unknown whether WFC may diminish the positive relation between WFF and psychological wellbeing. An examination of this phenomenon is important in that it will help determine whether WFF is beneficial to psychological wellbeing regardless of WFC, or only when WFC is low. Therefore, it is hypothesized that self-reported WFC will moderate the relation between WFF and psychological wellbeing.

In addition to individual WFC serving as a moderator, an area that has not been examined in the work-family literature is whether spouses' WFC may influence the extent to which their partner experiences positive spillover. Because farmers and wives typically work together on farm tasks even when the spouse is employed off the farm, it is likely that one partners' experience of WFC may potentially play a role in the other partners' spillover of WFF to psychological wellbeing. This represents a novel contribution to the dyadic work-family literature. Thus, in addition to individual WFC, it was also expected that spouses' reported WFC would moderate the extent which individual WFF was related to self-reported psychological wellbeing.

Hypothesis 11a: Individual WFC will moderate the extent to which spillover occurs between individual WFF and psychological wellbeing: The positive relation between WFF and psychological wellbeing will be stronger for those experiencing less WFC, compared to low WFC

Hypothesis 11b: Spouse's WFC will moderate the extent to which spillover occurs between individual WFF and psychological wellbeing: The positive relation between WFF and psychological wellbeing will be stronger those who's spouses experience less WFC, compared to those who have spouses experiencing high WFC

that may influence the extent to which positive crossover occurs among farming couples.

Spousal Support as a Moderator of the Crossover Process

Social support, defined as the extent to which one has interpersonal "helping relationships," has been commonly studied regarding its buffering role in the stressor-strain process (Viswesvaran, Sanchez, & Fisher, 1999). Within the work-family literature, social support has been repeatedly shown to reduce the negative outcomes associated with WFC (e.g., Carlson & Perrewe, 1999). A specific type of social support – spousal support – has received less attention. Spousal support refers to the understanding, encouragement, and help that spouses provide each other (Vinokur & Van Ryn, 1993).

Previous research has demonstrated that spousal support may serve as a buffer against the negative effects of stress. For example, Aryee and colleagues (1999) found that the relation between parental overload and family-work conflict was weaker for those with high levels of spousal support. Similarly, Westman and Etzion (2005) found that spousal support buffered the relation between job stressors and WFC for women serving in the U.S. Air Force. Thus, it is well established that spousal support serves as a buffer of the negative consequences associated with non-ideal work-family interactions (i.e., WFC).

While the negative side of the work-family interface has received a great deal of attention, no studies were found that have examined the moderating role of spousal support in terms of positive work-family experiences (i.e., WFF). However, it is reasonable to expect that

positive crossover may be stronger when individuals report experiencing higher levels of spousal support. Due to farmers' integration of work and family, as well as their collaboration with their wives regarding farm tasks, spousal support is likely to be important in this setting. Given the closeness of partners in the family farming context, it is expected that positive attitudinal crossover will be stronger among farmers (and wives) who receive high spousal support.

In general, while there may be a positive relation between husbands' work engagement and wives' WFF, as well as wives' farm satisfaction and husbands' WFF (Hypothesis 8), it is possible that spousal support may moderate the proposed relationship. Specifically, positive attitudinal crossover from husbands to wives, and vice versa, may be more strongly positive for those who perceive higher amounts of spousal support compared to those who perceive lower spousal support. In other words, husbands' work engagement may not be associated with wives' WFF when the wives do not perceive their husbands as supportive. Similarly, husbands' may not necessarily benefit from wives' farm satisfaction if they do not also perceive their wives as supportive. Unlike individual spillover, in which husbands' work engagement influences his own WFF, the extent to which his engagement is beneficial for wives' WFF may be contingent upon the wives' perceptions of her husbands' supportiveness. Therefore, spousal support is hypothesized as a moderator of the crossover process.

> **Hypothesis 12:** Spousal support will moderate the extent to which positive attitudinal crossover occurs between couples: The positive crossover of work engagement (and farm satisfaction) onto WFF will be stronger for those who perceive higher levels of spousal support, compared to those who perceive lower levels of spousal support

CHAPTER 2: METHOD

Participants and Procedure

To be eligible to participate in this study, participants had to meet the following criteria: 1) must be a member of a married couple, 2) farming had to be the primary occupation of the husband, and 3) each partner had to be willing to complete an individual survey. Farming couples were recruited with the assistance of the Iowa Farm Bureau. Separate online surveys were created for husbands and wives (each taking approximately 25 minutes), and links to the surveys were emailed to 6,768 email addresses through the Farm Bureau. Prior to completing the survey, participants were asked to read and agree to informed consent. Husbands and wives interested in participating were asked to provide a unique identification code in order to link each husband/wife pair together as a dyad. In exchange for their participation, each couple that successfully completed both surveys was provided with a $30 cash incentive. All participant information remained confidential.

The final sample providing complete husband/wife survey pairs consisted of 217 couples (434 individuals), yielding a rather low (3%) response rate. However, data on how many messages were undeliverable and/or unopened was unavailable – therefore, the actual response rate may not be quite this low. Additionally, although there was a low response rate, the sample seems to be relatively similar to the region in which the data were collected (Census of Agriculture, 2007). Husbands and wives were primarily Caucasian (Husbands: 100%; Wives: 99.5%) with a similar mean age (Husbands: $M = 52.56$, $SD = 11.68$; Wives: $M = 50.82$, $SD = 11.67$). The couples reported farming an average of 952 acres ($SD = 821$) and the majority (63.1%) of couples also reported raising livestock on their farm as well. Most of the couples (94.4%) had children, with 48.4% having a child currently living with them. Regarding off-farm

employment, 20.4% of the husbands worked an additional job off the farm while 56.7% of the wives were employed off the farm. Over half of the wives in the sample (57.8%) grew up on a farm and, of those that did not grow up on a farm, 62% had at least some exposure to the farming lifestyle through relatives and/or close friends as an adolescent.

Measures

Work-Family Facilitation. Work-family facilitation was measured with the Work-Family Enrichment Scale (Carlson, Kacmar, Wayne, & Grzywacz, 2006). This scale measures the extent to which the work and family roles enhance one another. This scale contains two nine-item subscales to assess both directions of WFF. To ensure farmers were reporting WFF associated with farming (as opposed to a second job), "farm work" was used to replace "job" within the farmers' surveys in order to specifically assess the extent to which farm work facilitates family life. An example W-F facilitation item is "My involvement in my farm work puts me in a good mood and this helps me be a better family member." An example F-W facilitation item is "My involvement in my family helps me expand my knowledge of new things and this helps me be a better worker." For wives, the word "job" was replaced with "work" in order to allow for them contributing to work both on and off the farm. In the present sample, the W-F facilitation subscale (husband $\alpha = .89$; wife $\alpha = .92$), the F-W facilitation subscale (husband $\alpha = .90$; wife $\alpha = .92$), and the overall 18-item composite score for WFF (husband $\alpha = .92$; wife $\alpha = .94$) all demonstrated good reliability.

Work-Family Conflict. Work-family conflict was measured with the 18-item Work-Family Conflict Scale (Carlson, Kacmar, & Williams, 2000). This scale assesses the extent to which conflict/incompatibility occurs between the work and family domains and contains two nine-item subscales representing the different directions of WFC. Similar to the WFF measure,

the word "job" was replaced with "farm" and/or "farm work" in all items in order to specifically assess WFC associated with farming. An example item for W-F conflict is "My farm work keeps me from my family activities more than I would like." An example item for F-W conflict is "Due to stress at home, I am often preoccupied with family matters when working on the farm." Similar to the WFF scale for wives, the word "work" was used to replace "job" in order to allow for wives contributing to work both on and off the farm. In the present sample, the nine-item W-F conflict subscale (husband $\alpha = .86$; wife $\alpha = .86$) and F-W conflict subscale, as well as the overall 18-item composite score for WFC (husband $\alpha = .91$; wife $\alpha = .92$) demonstrated good reliability.

Psychological Health. The 12-item General Health Questionnaire (GHQ; Goldberg, 1978) was used to measure participants' psychological health. This scale includes items such as, "Have you been feeling reasonably happy, all things considered?" and "Have you lost much sleep over worry?" (reverse-coded). Participants responded to each item on a three-point scale (0 = *not at all*; 3 = *very often*). Higher scores indicate better psychological wellbeing. Cronbach's alpha for this scale was .84 for husbands and .86 wives.

Physical Health. Physical health was measured with the 18-item Physical Symptoms Inventory (Spector & Jex, 1998). This scale contains a series of physical symptoms, including items such as "loss of appetite," "backache," and "fatigue." Participants responded on a three-point scale indicating whether they had various symptoms and whether they saw a doctor about them (1 = *No*; 2 = *Yes, but I didn't see a doctor*; 3 = *Yes, and I saw a doctor).* The total of all "2" and "3" responses were summed in order to incorporate an overall physical health measure incorporating both subjective (having symptoms) and objective (seeing a doctor) symptom

prevalence. Higher scores indicate greater physical symptoms (i.e., poor health). Because this scale is a causal indicator scale, coefficient alpha is irrelevant (Spector & Jex, 1998).

Spousal Support. An eight-item scale developed by Vinokur and van Ryn (1993) was used to measure spousal support. This scale assesses the extent to which a spouse provides several supportive behaviors to his/her partner by asking respondents "how often does your spouse show the following supportive behaviors?" Example items include "provide you with encouragement," and "listen to you when you need to talk." Participants responded on a five-point scale ranging from *not at all* (1) to *very often* (5). Higher scores represent higher levels of support. Cronbach's alpha for this scale was .94 for husbands and .93 wives.

Work engagement. This measure was only administered to husbands. Work engagement was measured with the shortened version of the Utrecht Work Engagement Scale (Schaufeli et al., 2006). This scale consists of nine items ($\alpha = .88$) assessing the extent to which individuals experience an energetic and effective connection to their work activities, and is proposed to be the opposite of burnout. Similar to previous measures, to specifically assess the husbands' engagement in farming, the word "farming" was used to replace "job" where appropriate. Example items include, "I am enthusiastic about farming," and "I am immersed in my farm work." Participants responded on a 7-point scale (0 = *never*, 6 = *every day*). Higher scores represent higher work engagement.

Farm Satisfaction. This measure was only administered to wives. Wives' satisfaction with the farming lifestyle was assessed with the eight-item Job in General scale (JIG; Ironson, Smith, Brannick, Gibson, & Paul, 1989) was modified to measure farm satisfaction. Wives were asked to think about their experience of the farming lifestyle in general, and to respond to the items accordingly. Example items included "good," "better than most," and "undesirable"

(reverse scored). Participants indicated whether each item described their experience of the farming lifestyle by choosing "Yes," "No," or "?" if they could not decide, coded as 3, 0, and 1, respectively. Higher scores represent higher levels of farm satisfaction. Cronbach's alpha for this measure was .80.

Demographic Variables. Information on age, number of children, age of youngest child, number of children currently living at home, whether or not the wife grew up on a farm, and husbands' and wives' work hours off the farm were self-reported. However, none of these variables were controlled for, as none demonstrated significant correlations with the variables of interest.

Data Analysis

Paired *t*-tests were used to examine mean differences in WFC and WFF. For the proposed spillover and crossover effects, Kenny, Kashy, and Cook's (2006) actor-partner interdependence model (APIM) was used as a framework in order to account for interdependence in the data. Thus, the unit of analysis was the dyad (not an individual), and effects for men and women were calculated simultaneously in the same model. Structural equation modeling (SEM) with Amos 18 (Arbuckle, 2009) was used to test these hypotheses. Because the hypotheses examined eight variables (four each for husbands and wives) with 109 total items, path analysis with directly observed variables was used to test the these hypotheses.

Variables were centered before running the analyses, with WFF grand mean centered to reduce potential issues of multicollinearity (Kenny et al., 2006). To examine model fit, four indexes were calculated: chi square (χ^2), with a non-significant value indicative of good model fit; comparative fit index (CFI; Bentler, 1990), with a value of .95 or higher indicative of good fit; root mean square error of approximation (RMSEA; Browne & Cudeck, 1993), with a value

of .06 or lower indicative of good fit; and standard root mean residual (SRMR; Hu & Bentler, 1998), with a value of .08 or lower indicative of good model fit. Multiple indices were examined, as chi square is sensitive to sample size. In addition to model fit, the unstandardized and standardized path estimates were evaluated to examine the nature and significance of the hypothesized relationships among study variables.

Finally, hierarchical regression was used to test the exploratory moderator hypotheses. Regression was used, as opposed to SEM, due to the exploratory nature of the hypotheses as well as the concerns of small sample size and model complexity for SEM analyses. To test the interaction hypotheses, Baron and Kenney's (1986) procedure was used. Because there were no control variables, the centered independent and moderator variables were entered in the first step of the equation. In the second step, an interaction term, computed by multiplying the centered scores for the independent and moderator variables, was entered. In order to determine if there was a significant moderating effect, the change in R^2 from step 2 to step 3 was examined.

CHAPTER 3: RESULTS

Descriptive statistics (i.e., means, standard deviations, reliabilities) for the study variables are presented in Table 1. Paired samples *t*-tests were conducted to examine if the means of the constructs of interest differed between husbands and wives (See Table 1 for *t*-test results). Husbands reported higher overall WFC than did wives (Husbands: $M = 2.48$, $SD = .57$; Wives: $M = 2.31$, $SD = .57$; $t(216) = 4.07$, $p < .05$). Among the remaining variables, there were no significant differences between husbands and wives.

Table 2 displays the intercorrelations among the study variables for husbands and wives. The majority of correlation coefficients for husbands and wives were in the expected direction, providing initial support for the spillover hypotheses. Additionally, all parallel variables across husbands and wives were positively related to each other: husbands' WFF was significantly related to wives' WFF ($r = .37$, $p < .05$), as was the case for WFC ($r = .41$, $p < .05$), psychological health ($r = .34$, $p < .05$), physical health ($r = .25$, $p < .05$), and spousal support ($r = .53$, $p < .05$). The positive direction of these relationships is to be expected, as the couples were nested within dyads; as such, the extent to which each spouse reports certain experiences may be a product of being a part of their specific dyadic relationship. Regarding the strength of the relationships presented in Table 2, the majority of the correlations between spouses are significant and seem to be relatively larger than typically seen among couples in dyadic research (e.g., McCallister, Thornock, Hammond, Holmes, & Hill, 2012). The close proximity of work and family among farm couples may have contributed to these relationships.

WFF and WFC Prevalence

Hypothesis 1 proposed that husbands and wives would experience WFF to a greater extent than WFC. This was supported, as paired samples *t*-tests demonstrated a significant

difference between the mean scores of both directions of WFF and WFC for husbands and wives. Specifically, husbands reported higher mean scores for W-F facilitation (M = 3.85, SD = .50) than for W-F conflict (M = 2.64, SD = .68; $t(216) = 18.04$, $p < .05$), and higher mean scores for F-W facilitation (M = 3.79, SD = .49) than for F-W conflict (M = 2.32, SD = .55; $t(216) = 25.43$, $p < .05$). Wives demonstrated the same pattern of significant results, experiencing higher mean levels of W-F facilitation (M = 3.79, SD = .58) than W-F conflict (M = 2.37, SD = .64; $t(216) = 22.09$, $p < .05$), and higher levels of F-W facilitation (M = 3.88, SD = .53) than F-W conflict (M = 2.25, SD = .59; $t(216) = 26.67$, $p < .05$).

Hypothesis 2 examined the direction of WFF, proposing that F-W facilitation would be more prevalent than W-F facilitation. Among husbands, there was no mean difference between W-F (M = 3.85, SD = .50) and F-W facilitation (M = 3.79, SD = .49; $t(216) = 1.74$, *n.s.*). Farmers' wives, however, reported greater levels of F-W facilitation (M = 3.88, SD = .53) than W-F facilitation (M = 3.79, SD = .58; $t(216) = 2.50$, $p < .05$). Therefore, hypothesis 2 was partially supported.

Path Model

The proposed path model in Figure 1 – with two exogenous variables and six endogenous variables – was estimated and showed an adequate fit to the data ($\chi^2(10) = 9.90$, p = .45, CFI = 1.00, RMSEA = .00, SRMR = .04). Although the initial model demonstrated good model fit, path coefficients and modification indices were examined in order to gain a better understanding of the nomological network and to search for potential theoretically justified model respecifications.

One omitted path was found to be significant: wives' farm satisfaction directly crossed over onto husbands' psychological health (β = .14, $p < .05$). This revised path model also

demonstrated good fit to the data ($\chi^2(9) = 4.67$, $p = .86$, CFI = 1.00, RMSEA = .00, SRMR = .02). While it is theoretically reasonable to expect wives' farm satisfaction to influence husbands' psychological health, it is also possible that husbands' psychological health contributes to wives' farm satisfaction. In the current theoretical model, however, wives' farm satisfaction was an exogenous variable. Accordingly, the originally proposed model was retained.

Standardized and unstandardized parameter estimates of the proposed model are shown in Figure 2. In addition, the explained variances for each of the endogenous variables are reported in italics in Figure 2. In accordance with the APIM, the disturbances associated with all parallel endogenous variables reported by husbands and wives – WFF, psychological health, and physical symptoms – were allowed to covary in order to account for nonindependence in the dyadic data (Kenny et al., 2006). The two exogenous variables – husbands' work engagement and wives' farm satisfaction – were allowed to covary as well. Husbands' work engagement was not significantly correlated with wives' farm satisfaction ($r = .07$, *n.s.*). However, the disturbances for husbands' and wives' reported WFF ($r = .31$, $p < .05$), psychological health ($r = .22$, $p < .05$), and physical health ($r = .22$, $p < .05$) were all positively correlated. Because the overall model demonstrated good fit to the data, the path estimates were examined to explore the nature and significance of the hypothesized relationships.

Spillover Effects. Hypothesis 3 proposed that husbands' work engagement would be positively related to his WFF (3a) and psychological wellbeing (3b). This was fully supported, as work engagement demonstrated significant positive relationships with both WFF ($\beta = .38$, $p < .05$) and psychological wellbeing ($\beta = .23$, $p < .05$). Hypothesis 4, which proposed wives' farm satisfaction to be positively related to her WFF (4a) and psychological wellbeing (4b) was also fully supported. Wives' farm satisfaction was positively related to her WFF ($\beta = .15$, $p < .05$) and

psychological wellbeing (β = .28, p <.05). Thus, to the extent that husbands and wives experienced greater work engagement and farm satisfaction, respectively, their individual psychological wellbeing and WFF increased.

As predicted in Hypothesis 5, an individuals' WFF was positively related to his/her psychological well-being (Husbands: β = .29, p <.05; Wives: β = .24, p <.05). Therefore, the more WFF husbands and wives experienced, the better their psychological wellbeing tended to be.

Hypothesis 6 suggested that WFF would mediate the relationship between work engagement and psychological wellbeing for husbands, as well as the relationship between farm satisfaction and psychological wellbeing for wives. This was tested with maximum likelihood bootstrapping within Amos (Arbuckle, 2009) as part of the proposed model. This hypothesis was supported, as the indirect effect of work engagement on psychological wellbeing (through WFF) for husbands was significant (β = .13, p <.05), as was the indirect effect of farm satisfaction on psychological wellbeing for wives (β = .06, p <.05). The relationship was not fully mediated, however, as both the direct and indirect effects for work engagement and farm satisfaction were significant in predicting husbands' and wives psychological wellbeing respectively.

Hypothesis 7 suggested that individual psychological wellbeing would be negatively related to physical symptoms. Both husbands (β = -.34, p <.05) and wives (β = -.38, p <.05) demonstrated negative relationships between their psychological wellbeing and physical symptoms. Thus, to the extent that husbands and wives reported higher psychological wellbeing, they reported fewer physical symptoms, providing support for hypothesis 7.

Crossover Effects. Hypotheses 8, 9, and 10 concerned the crossover between husbands and wives. Hypothesis 8 was supported for both husbands and wives. As predicted, husbands'

work engagement was positively related to wives' WFF (β = .20, p <.05): the more he reported being engaged at work, the more WFF she reported experiencing. Similarly, wives' farm satisfaction was positively related to husbands' WFF (β = .13, p <.05): the more farm satisfaction she reported, the more WFF he reported experiencing.

Hypothesis 9 examined the direct crossover of WFF to partner psychological wellbeing. Husbands' WFF was positively related to wives' reported psychological wellbeing (β = .14, p <.05). Therefore, the more WFF the husband experienced, the higher psychological health reported by his wife. However, the relationship between wives' WFF and husbands' psychological wellbeing was not significant (β = .10, *n.s.*). Therefore, hypothesis 9 was only partially supported.

Hypothesis 10 proposed that husbands' and wives' psychological wellbeing would be negatively related to their partners' reported physical symptoms. This was not supported, as husbands' psychological wellbeing was not significantly related to wives' physical symptoms (β = -.03, p <.05). Similarly, wives' psychological wellbeing was not related to husbands' physical symptoms (β = .01, p <.05).

Post Hoc Analysis. In addition to the originally proposed model, another model was tested to examine a potential bidirectional feedback loop between husbands' and wives' psychological wellbeing. There is evidence to suggest that husbands and wives psychological wellbeing influences each other (e.g., Demerouti et al., 2005; Westman, Vinokur, Hamilton, & Roziner, 2004). Therefore, another model was tested in which husbands' and wives' psychological wellbeing was predicted by their partners' psychological wellbeing. This model also fit the data well ($\chi^2(8) = 3.71$, p = .88, CFI = 1.00, RMSEA = .00, SRMR = .02). The two omitted paths from the original model – husbands' psychological wellbeing predicting wives'

psychological wellbeing, and vice versa – were examined for significance. Husbands' psychological wellbeing was not significantly related to wives' psychological wellbeing (β = -.30, *n.s.*). However, wives' psychological wellbeing was positively associated with husbands' psychological wellbeing (β = .43, p <.05). As wives' psychological wellbeing increased, their husbands' wellbeing tended to increase as well.

Exploratory Moderators

Hierarchical regression was used to examine potential interaction effects. Hypothesis 11 proposed that individual WFC (11a) and partner WFC (11b) would moderate the spillover relationship between WFF and psychological wellbeing among husbands and wives. For husbands, although both individual and partner WFC had direct effects on his psychological wellbeing, neither displayed a significant interaction term with his WFF in predicting psychological wellbeing (individual WFC: β = .00, *n.s.*; partner WFC: β = .10, *n.s.*). A similar pattern was found for wives, as neither individual WFC nor partner WFC significantly interacted with WFF in predicting her psychological wellbeing (individual WFC: β = .10, *n.s.*; partner WFC: β = .02, *n.s.*). Thus, hypothesis 11 was not supported.

Hypothesis 12 proposed that perceived spousal support would moderate the extent to which husbands' work engagement (12a) and wives' farm satisfaction (12b) crossed over to their partners' WFF. For husbands, although the perceptions of spouse supportiveness did have a direct effect on his WFF (β = .41, p <.05), the interaction with wives' farm satisfaction was not significant (β = .02, *n.s.*). For wives, perceived spousal support did significantly interact with husbands' work engagement (β = .19, p <.05), explaining an additional 4% of the variance in her WFF above and beyond the direct effects associated with work engagement and spousal support. Results are presented in Table 5. The form of this interaction is graphed in Figure 3, suggesting

that the relationship between husband work engagement and wife WFF is more strongly positive for wives who perceive high spousal support compared to those who experience low spousal support. Thus, hypothesis 12 was partially supported.

CHAPTER 4: DISCUSSION

The purpose of this study was to investigate the positive side of the work-family interface among a novel sample – farm couples. Of specific interest was the prevalence of WFF (compared to WFC) as well as the spillover and crossover of attitudes, WFF, and health outcomes among married farm couples. Although researchers have begun to examine the contextual effects associated with work-family issues, this was the first study to examine farmers as a population of interest. General support for the overall proposed model was strong. The results suggest preliminary evidence for the potential beneficial work-family atmosphere associated with the farming occupation, as both husbands and wives demonstrated positive spillover and crossover. While a few findings diverge from previous work-family research, many of the findings among the current sample of farm couples seem to be similar to previously studied populations. The following sections discuss the present findings and their contribution to important theoretical implications for researchers investigating the work-family interface, as well as practical implications for those within the farming occupation.

Regarding the prevalence of WFF and WFC, both husbands and wives reported greater levels of WFF than WFC. This diverges from Poppleton and colleagues' (2008) recent finding that workers (both white- and blue-collar) tend to experience similar levels of positive and negative work-nonwork experiences. This discrepancy is likely due to the unique work-family environment associated with farming that is not captured among typically studied organizational employees. Unlike typical blue-collar workers, farmers have much more autonomy and skill variety in their day-to-day work, as well as more integrated work and family domains. Additionally, the self-employed and family business nature of the farming profession may also play a role. This is consistent with Tuttle and Garr's (2009) finding that self-employed women

tend to report higher levels of WFF than organizationally employed women, as well as Rothausen's (2009) assertion that family health and wellbeing are emphasized as business goals within family businesses. Because work and family tend to blend together as an overall lifestyle among farm families (Vanclay, 2011), the unique setting (and mentality) associated with the farming profession as a whole may help to explain the tendency for farm couples to experience more WFF than WFC.

While it may be that the farm setting contributed to increased WFF for farm couples, it is also possible that the results may be at least partially due to who volunteered for the current study rather than farm work, per se. For example, couples experiencing more WFF may have been more likely and willing to complete surveys than those experiencing less WFF. Similarly, couples experiencing greater levels of WFC may not have had the time or desire to participate in the survey. A look at Table 1 also demonstrates that the majority of husbands and wives in the current study were relatively healthy, both psychologically and physically. This suggests potential for the healthy worker effect. Furthermore, the reported means for husbands' work engagement and wives' farm satisfaction suggests that there may be some range restriction in the current sample. As such, it is possible that the composition of the study volunteers contributed to the increased WFF in the current study.

Regarding the directional nature of WFF, although husbands experienced roughly similar amounts of W-F and F-W facilitation, wives tended to experience more F-W facilitation than W-F facilitation. This finding runs contrary to the majority of the work-family literature suggesting that work tends to influence the family domain more so than vice versa (e.g., Frone et al., 1992; Poppleton et al., 2008). One study has suggested that older working women may experience more F-W facilitation than W-F facilitation, as older women tend to make more deliberate

choices that allow them to balance their work and family lives in more personally satisfying ways (Gordon et al., 2007). In the current study, however, wives' age was not related to the experience of W-F or F-W facilitation, suggesting that farm wives experience greater F-W facilitation regardless of age.

One potential explanation for the significant finding for wives – and null results for husbands – is the proximity of farmers' work to the family domain. Due to this close proximity, wives may be more likely to experience affective and instrumental facilitation within their family lives than their non-farming counterparts, as their husbands may be more accessible and 'within reach' than in the traditional dyadic setting. This increased accessibility may allow the husbands to be more likely to tend to unexpected family situations when they arise. Similarly, the work-family lifestyle associated with farming may be more conducive to balancing wives' work and family domains (and values) in personally satisfying ways than within other dyads. Farmers, on the other hand, may be more likely to experience both directions of facilitation. Because they do the majority of their work close to home, work may be just as likely to facilitate husbands' family life as family is to facilitation their work life. Accordingly, husbands' W-F facilitation may contribute to wives' increased F-W facilitation, which may help to explain wives' greater levels of F-W facilitation.

Additionally, another potential explanation for this finding is that "work" and "family" may have different meanings for farm families. Because of the domain overlap and lifestyle mentality associated with farming, it may be harder to distinguish between work and family activities among the farm setting. As Hennon (2012) noted, within the farm setting, work activities may become family activities and vice versa. Therefore, the work-family experience and the prevalence of the directions of WFF may not necessarily be extensively different for

farm couples, but rather the meaning and idea of the terms work and family may diverge among those within a farm setting and thereby contribute to the current results.

Spillover

Consistent with previous spillover research, the current findings demonstrated positive attitude spillover for both husbands and wives. Among husbands, work engagement was positively related to WFF, thus replicating the findings of previous researchers regarding the benefits of work engagement for WFF (e.g., Culbertson et al., 2012; Siu et al., 2010). To the extent that farmers felt a connection and a sense of pride in the work that they do, the more likely they were to experience positive work-family interactions (i.e., WFF). This is no surprise, especially given the large amount of overlap between the work and family domain within the farming profession.

Among wives, farm satisfaction was positively related to WFF. This finding is consistent with much previous research showing a positive relation between WFF and individual job satisfaction (e.g., Wayne, Musisca, & Fleeson, 2004). However, this represents a novel contribution to the work-family literature, as the wives' attitude towards their *husbands'* occupation was related to beneficial work-family outcomes. Additionally, the majority of previous models view job satisfaction as an outcome associated with WFF; in the present study, farm satisfaction was viewed as an antecedent variable due to its association with the husbands' primary job. As mentioned previously, the dyadic setting in the current study provided an appropriate sample to test this effect. Due to the large amount of cooperation necessary among farm couples (Berkowitz & Perkins, 1984), the heightened need for spousal understanding in terms of unique and unpredictable stressors (Eberhardt & Pooyan, 1990), and the intimate connection between the farm and family life among farm families (Gregoire, 2002), wives'

everyday lives cannot be separated from farming – these factors indicate the importance of wives' attitudes towards farm life. The current finding provides preliminary evidence that wives' satisfaction with their husbands' occupation may be important to consider in terms of work-family issues, especially when the husband has a non-typical occupation (i.e., farming).

In addition to positive attitude spillover, WFF was positively related to psychological wellbeing for both husbands and wives. This is congruent with the resource enhancement perspective (Greenhaus & Powell, 2006; Marks, 1977), as well as recent findings suggesting a positive association between WFF and indicators of mental health (McNall et al., 2010; Van Steenbergen & Ellemers, 2007). Furthermore, similar to previous findings suggesting WFF as a mediator (e.g., Allis & O'Driscoll, 2008; Gordon et al., 2007), WFF significantly mediated the relation between husbands' work engagement – and wives' farm satisfaction – and self-reported psychological wellbeing. Therefore, the attitudes of husbands and wives have a direct effect, as well as an indirect effect through WFF, on psychological wellbeing. As such, work engagement and farm satisfaction, for husbands and wives respectively, may directly improve one's psychological wellbeing, or do so through increased WFF.

This finding contributes to the small body of research examining work engagement in relation to health outcomes (Bakker et al., 2011). The current finding advances Hakanen and Schaufeli's (2012) discovery – that work engagement was negatively related to depressive symptoms – by establishing a relation between engagement and overall psychological wellbeing, not just the negative side of mental health (i.e., depressive symptoms). Regarding the significant relationship between farm satisfaction and psychological wellbeing, this suggests that wives' attitudes towards her husbands' job seems to play an important role in determining her own wellbeing. Although researchers typically focus on individual job satisfaction, this may not be

sufficient when examining work-family issues and wellbeing outcomes, especially when one spouse has a job with unique stressors and/or a non-traditional work environment. Taken as a whole, these results further demonstrate the importance of having positive work attitudes, as these attitudes are not only associated with positive work-family experiences (i.e., WFF), but also contribute to overall psychological wellbeing.

Finally, individual psychological wellbeing was negatively related to self-reported physical symptoms for both husbands and wives. As psychological wellbeing increased, participants reported experiencing fewer physical symptoms. This is consistent with previous research suggesting an association between mental and physical health (e.g., Bishop, 1994; Robbins et al., 2012). Due to the high degree of uncertainty associated with the farming profession, it seems especially likely that psychological factors – such as worry or anxiety due to weather, market prices, or other factors outside of the farmers' control – may contribute to increased physical health symptoms (i.e., fatigue, headaches, loss of appetite) among this population. Because of the cross-sectional nature of this study, however, firm conclusions cannot be drawn regarding the causal influence of psychological wellbeing on physical symptoms, or vice versa. Future longitudinal research is encouraged to fully understand the causal nature of this relationship.

Crossover

This study also contributes to the work-family literature by offering insight into the possible processes by which attitudes and experiences of one spouse may crossover to the attitudes and experiences of their partners. Many previous studies have found direct crossover effects among parallel constructs between spouses (e.g., wife engagement and husband engagement; burnout, WFF, life satisfaction; Bakker et al., 2005; Carlson et al., 2011;

Demerouti et al., 2005). Fewer, however, have examined direct crossover effects from one spouse's attitude to their partners' WFF. The current study hypothesized direct crossover effects from one spouse's attitudes, WFF, and psychological wellbeing to their partners' WFF, psychological wellbeing, and physical health, respectively. In addition, the inclusion of the farming population (self-employed, family business) represents an advancement over previous crossover research.

As predicted, husbands reported more WFF when their partners reported higher farm satisfaction. Similarly, wives reported more WFF when their husbands reported higher work engagement. This is consistent with previous crossover findings suggesting the positive reciprocal influence of beneficial work-family experiences among spouses (Bakker et al., 2005; Carlson et al., 2011; Demerouti et al., 2005). In the current study, husbands' work engagement and wives' farm satisfaction were directly related to their partners' WFF. These direct crossover effects are similar to Demerouti's (2012) finding that higher levels of energy and motivation in one partner leads to a more resourceful environment for the other partner. Demerouti (2012) states that a primary difference between positive crossover and negative crossover is that individual energy is directly related to the partners' home resources, while negative experiences cross over through a behavioral transmitter (e.g., social undermining, decreased social support).

Applied to the current results, when farmers are enthusiastic about the work they do, they may create a positive atmosphere and be more resourceful when interacting with their wives, which enhances wives' work-family interactions. Similarly, when wives experience higher satisfaction and enjoyment with the farming lifestyle, they may be more likely to enhance their husbands' work-family interactions. Therefore, to the extent that husbands are engaged and wives are satisfied with the farm setting, the more likely they may be directly involved in both

the work and family domains, thereby enhancing their own, as well as their partners' WFF. This is congruent with the role enhancement perspective, as well as Demerouti's (2012) assertion that positive experiences directly crossover from one spouse to another.

Regarding crossover effects on psychological health, only the husbands' WFF was related to wives' psychological health. Specifically, wives reported higher psychological wellbeing when husbands reported more WFF; wives' WFF was not related to husbands' psychological health. Although the crossover of negative health outcomes among spouses has been examined (e.g., Bakker, 2009), and there is evidence that *individual* WFF is related to personal health (e.g., Grzywacz, 2000; Van Steenbergen & Ellemers, 2009), this was one of the first studies to examine the direct crossover effect of individual WFF on partner psychological health. The current finding supplements Hammer et al.'s (2005) discovery that individual positive work-family spillover was negatively related to spouses' depression. However, while Hammer et al. (2005) found significant crossover effects on depression for both husbands and wives, the current study only found crossover onto wives' psychological wellbeing.

Although it was expected that both spouses would experience crossover of WFF onto psychological wellbeing, the current finding may suggest that husbands' positive work-family experiences may have a stronger relation with wives' wellbeing than wives' WFF has on husbands' wellbeing. This result is opposite of a recent crossover finding suggesting that WFC crossed over to effect life satisfaction from wives to husbands, but not from husbands to wives (Zhang, Foley, & Yang, 2013). Therefore, paired with Zhang et al.'s (2013) finding, these results might suggest that negative work-family experiences may be more likely to crossover from wives to husbands, while positive work-family experiences may be more likely to crossover from husbands to wives. Accordingly, husbands may react more strongly to their partners' negative

experiences whereas wives may react more strongly to their partners' positive experiences. Due to the preliminary nature of these findings, this represents an interesting area for future research.

Finally, regarding the crossover of psychological wellbeing to spouses' physical symptoms, no significant effects were found. Taken together with the spillover findings, this suggests that individual psychological wellbeing plays an important role in predicting one's own physical symptoms, but not the physical symptoms of his/her partner. Given the plethora of other factors that contribute to a person's physical health that were not measured in the current study (e.g., exercise, nutrition), it seems that other factors are more important in predicting physical health. Additionally, as mentioned previously, this may potentially be due to the healthy worker effect, as healthy and happy workers may be more likely to partake in the survey, leading to decreased variance in reported physical symptoms. The observed range for physical symptoms in the current study was quite a bit smaller than the possible range. Furthermore, physical health seems to remain relatively stable over time compared to psychological health. As a result, experience sampling and longitudinal data would be more conducive to investigating this type of crossover between couples.

Exploratory Moderators

The current study also sought to examine two potential moderators of the spillover and crossover process. Regarding WFC, neither individual nor partner WFC moderated the spillover relation between WFF and psychological wellbeing for husbands or wives. Therefore, this suggests that WFF is associated with better psychological wellbeing independent of the amount of WFC experienced by the individual or his/her spouse. Although facilitation has been found to serve as a buffer of the negative relation between role conflict and mental health (e.g., Grzywacz & Bass, 2003; Park & Sprung, 2013), this study was the first to examine whether WFC served as

a moderator of the potential beneficial outcomes associated with WFF. The current findings suggest that WFF is beneficial for psychological health regardless of the amount of WFC experienced. Therefore, even when experiencing WFC, WFF is positively related to psychological wellbeing. As this was the first study to examine this issue, further research is encouraged to gain a deeper understanding of WFC's role in the relation between WFF and psychological wellbeing.

As for spousal support, one significant interaction was found: wives' perceived spousal support significantly interacted with husbands' work engagement in predicting wives' WFF. A look at Figure 3 suggests that when perceived spousal support was low, wives experience roughly the same amount of WFF regardless of whether husbands have high or low work engagement. When perceived support was high, however, there was a positive relation between husbands' work engagement and wives' WFF. Therefore, husbands' work engagement may not necessarily be beneficial for wives' WFF when they feel like they are not receiving support from their husbands. This is consistent with many previous findings suggesting the importance of spousal support in terms of negative work-family interactions (e.g., Aryee et al., 1999; Carlson & Perrewe, 1999). In addition, this is consistent with Voydanoff's (2005) finding that family resources, such as spouse support, are important for the experience of WFF. The finding that spousal support moderates the extent to which *positive* crossover occurs represents an advancement in the work-family literature, as the majority of previous research has examined spousal support as a buffer of negative outcomes associated with WFC. The present finding suggests that spousal support may also play a role in the extent to which positive work-family experiences occur.

Theoretical Implications

The current findings provide further support for the resource enhancement perspective within role theory (Greenhaus & Powell, 2006; Marks, 1977). Specifically, WFF was experienced to a greater extent than WFC, suggesting that engaging in multiple roles may be beneficial for individual outcomes. The finding that WFF was more prevalent than WFC is an important finding, as the majority of previous research has focused on the role scarcity perspective. These results are also consistent with boundary theory, as farmers' increased role permeability and closer proximity of work and family boundaries may have contributed to farm couples' WFF. According to the present results, more attention should be paid to the beneficial aspect of being engaged in multiple roles. Additionally, the crossover results suggest that the individual benefits of role enhancement may transfer to ones' partner as well. Therefore, further research is encouraged in this area.

The most important contribution of the current study is that it expands upon the growing trend among work-family research concerning the contextual nature of work-family experiences (Kossek et al., 2011). As mentioned previously, the occupation in which people work uniquely contributes to their work-family experiences (Dierdorff & Ellington, 2008). However, very little research to date has delved into this topic and examined contexts other than white-collar organizational workers. The current findings suggest that some of the findings and theories in the work-family literature may be specific to certain settings and family configurations. For example, the finding among farm couples that both husbands and wives tend to experience more WFF than WFC, as well as the finding that wives may experience more F-W facilitation than W-F facilitation, suggests that some of the common findings within the work-family literature may

not necessarily apply to farm couples. Additionally, the present study suggests that satisfaction with a spouse's occupation, in addition to satisfaction with one's own job, may be an important aspect to consider, especially when the spouse has a contextually unique occupation. At the same time, however, much of the results in the current study regarding spillover and crossover seem to be similar to previous research within the work-family domain.

At a more general level, results among the current sample of farm couples are consistent with the theoretical proposition that the attitudes and wellbeing of individuals are not only affected by their personal work-family experiences, but also by their partners' work-family experiences. In addition, the current study addresses a gap in the work-family literature by examining the positive crossover process among married couples (Westman et al., 2009), showing that WFF – in addition to WFC – is an important aspect to consider within the work-family interface. Furthermore, this study provides insight into the ways in which positive crossover may occur, as well as preliminary evidence that spousal support may play an important role in this process. Overall, this study provides further evidence that interventions and strategies concerned with improving worker attitudes, health, and wellbeing should broaden their focus to include workers' partners as well as the workers themselves.

Practical Implications

This study also has important implications for the farming population. First of all, farmers and wives should be aware of the relation between psychological wellbeing and physical symptoms. Given the large amount of uncertainty and potential anxiety associated with farming, it is important that farmers not worry too much over aspects outside of their control (e.g., weather, market prices), as this may have detrimental effects on their physical health. Second, farmers and wives should be aware of the potential beneficial effects that their attitudes (i.e.,

work engagement, farm satisfaction) have on their own, as well as their partners' WFF and wellbeing. Given the proximity of work and family in the farming profession, the attitudes and experiences of one partner seem to be very important in terms of their spouses' attitudes and experiences. In addition, the moderating effect of spousal support suggests that, for husbands, simply being engaged in their work may not be enough to have a beneficial impact on their wives' work-family experiences. Therefore, spousal support seems to be a crucial factor in determining whether or not wives may benefit from farmers' work engagement. Overall, this study seems to highlight the potential benefits of the integrated work-family lifestyle associated with farm families.

Limitations

Although the current study advances the literature on the work-family interface by examining farming couples, it is not without limitations. First of all, this study relied on self-report measures, raising the potential concern of common method variance. Additionally, due to the online survey design, it is possible that husbands and wives collaborated when completing the surveys. Therefore, couples' responses may not necessarily be independent of each other. Similarly, members of couples may have been reluctant to report in such a way that would be viewed negatively by his/her spouse, which may have led to increased positive responses (i.e., WFF) and/or decreased negative responses (i.e., WFC). Thus, social desirability may be a potential concern in terms of husbands' and wives' responding. While this is a concern, the detection of an interaction in this study attenuates the problem of common-method variance, as one effect of common-method variance is decreasing the sensitivity of tests of moderators (Evans, 1985). Additionally, although many of correlations between spouses' self-reported variables are significant, the two highest correlations (*r* of .53 and .41) are not of excessive

magnitude. Similarly, comparable studies examining dyads have reported similar and/or higher correlations between parallel variables among husbands and wives (e.g., Matthews et al., 2006).

A second limitation is the low response rate (3%). Data were not available on whether the couples that participated were demographically similar to the initial pool of recruits for the study. Furthermore, data regarding how many of the initially sent emails were undeliverable and/or unopened by the recruited participants was unavailable. As such, the actual response rate may be slightly higher. Regardless of the response rate, the 217 dyads that did participate provide an important contribution to the contextual nature of the work-family literature, this was the first study to examine farmers.

The cross-sectional design represents another potential limitation. Because all data were collected concurrently, this does not allow for causal conclusions to be made. While this is a limitation, the significant results provide initial evidence regarding the positive spillover and crossover effects among farm couples. Due to the preliminary nature of this study among a novel population, the cross-sectional data served the purpose of establishing relationships among the constructs of interest. These, in turn, can be used to direct follow-up studies among similar novel populations. Finally, the rather homogenous sample may be seen as a potential limitation; however, this sample seems relatively representative of the farming population in the region in which the data were collected. According to the USDA's Census of Agriculture (2007), over 99% of the farms within the state of Iowa contain white operators, the majority of which are middle aged males.

Future Directions

Because this was the first study to examine the work-family interface among farmers, there are many directions for future research. First of all, the current study used cross-sectional

data. As such, causal inferences cannot be made. Therefore, future research is encouraged to use longitudinal designs in order to assess the directionality of the relationships found in the current study. Specifically, it would be useful to examine the longitudinal relation between psychological health and physical symptoms.

The current study also focused on only two antecedents of WFF. Future research may examine how other factors, such as personality, and husband and wives' work and family demands might influence farm couples' experience of both WFC and WFF. Additionally, the current findings provided evidence that partners' satisfaction with their husbands' occupation may have important implications regarding work-family experiences. Therefore, future research is encouraged to examine this phenomenon among other occupations to determine if this effect generalizes. Similarly, the farm setting also provides a unique setting to assess whether spouses can accurately perceive their partners' WFC and relationship tension. Matthews et al. (2006) has demonstrated that perceptions of partners' WFC tend to be associated with relationship tension and negative outcomes. It seems especially likely in this setting that individuals would be aware of their partners' work-family experiences. This is an interesting area for future investigation.

Another important direction for future research would be to explore what specific aspects of farming may have been responsible for the novel results in the current study (i.e., more prevalent WFF). Farming represents a unique situation in that workers are typically self-employed and working in close physical proximity to their families. Based on previous work-family literature, it is possible that either or both of these features of the farming occupation may have contributed to the current findings (Halbesleben, Zellars, Carlson, Perrewe, & Rotundo, 2010; Tuttle & Garr, 2009). Therefore, it may be useful to replicate the current study with people who are self-employed but do not work in their homes (i.e., small business owners), as well as

those who work from home but are not self-employed (i.e., telecommuters). Doing so would lead to a deeper understanding of the reasons behind why some workers may experience more WFF than WFC, and vice versa.

Finally, future research is encouraged to continue examining unique and diverse occupational contexts. Given that work-family experiences differ based on the occupation in which someone works (Dierdorff & Ellington, 2008), it is likely that the differing demands and resources associated with occupations such as construction, law enforcement, and many other sectors may uniquely influence workers' attitudes, experiences, and wellbeing within the work and family domains.

Conclusion

In conclusion, the current study provides evidence that WFF tends to be experienced more often than WFC among farm couples. In addition, processes by which positive spillover and crossover occur among farm couples were presented. The current study builds upon the results of previous work-family research by examining the positive side of the work-family interface, and extends the current focus on work-family contextualization by examining a novel sample. Although farmers represent a relatively understudied population in occupational health psychology, the current findings regarding the prevalence of WFF and WFC suggest that the unique work-family atmosphere and integration associated with the farming profession may promote positive work-family experiences. Accordingly, researchers are encouraged to further explore the farming population, as well as other unique and understudied populations (i.e., self-employed, police officers, firefighters, construction workers) to further explore and understand the contextualization of the work-family interface.

REFERENCES

Allen, T. D., Herst, D. E., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-to-family conflict: A review and agenda for future research. *Journal of Occupational Health Psychology, 5*, 278-308. doi: 10.1037/1076-8998.5.2.278

Allis, P., & O'Driscoll, M. (2008). Positive effects of nonwork-to-work facilitation on well-being in work, family and personal domains. *Journal of Managerial Psychology, 23*, 273-291. doi: 10.1108/02683940810861383

Arbuckle J. L. (2009). Amos 18 user's guide. SPSS; Chicago, IL: SPSS.

Aryee, S., Luk, V., Leung, A., & Lo, S. (1999). Role stressors, interrole conflict, and well-being: The moderating influence of spousal support and coping behaviors among employed parents in Hong Kong. *Journal of Vocational Behavior, 54*, 259-278. doi: 10.1006/jvbe.1998.1667

Ashforth, B. E., Kreiner, G. E., & Fugate, M. (2000). All in a day's work: Boundaries and micro role transitions. *The Academy of Management Review, 25,* 472-491. doi: 10.5465/AMR.2000.3363315

Bakker, A. B. (2009). The crossover of burnout and its relation to partner health. *Stress and Health, 25*, 343-353. doi: 10.1002/smi.1278

Bakker, A. B., Albrecht, S., & Leiter, M. P. (2011). Key questions regarding work engagement. *European Journal of Work and Organizational Psychology, 20,* 4-28. doi: 10.1080/1359432X.2010.485352

Bakker, A. B., & Bal, M. P. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology, 83,* 189-206. doi: 10.1348/096317909X402596

Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2005). The crossover of burnout and work engagement among working couples. *Human Relations, 58,* 661-689. doi: 10.1177/0018726705055967

Bakker, A. B., Westman, M. & van Emmerik, I. J. H. (2009). Advancements in crossover theory. *Journal of Managerial Psychology*, *24*, 206-219. doi: 10.1108/02683940910939304

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182. doi: 10.1037/0022-3514.51.6.1173

Bentler, P. M. (1990). Comparative fit indices in structural models. *Psychological Bulletin, 107*, 238-246. doi: 10.1037/0033-2909.107.2.238

Bentley, J. W. (1994). Facts, fantasies, and failures of farmer participatory research. *Agriculture and Human Values, 11*, 140-150. doi: 10.1007/BF01530454

Berkowitz, A. D., & Perkins, H. W. (1984). Stress among farm women: Work and family as interacting systems. *Journal of Marriage and Family, 46*, 161-166. doi: 10.1037/0022-006X.56.2.206

Bishop, G. D. (1994). *Health psychology: Integrating mind and body.* Needham Heights, MA: Allyn & Bacon.

Bolger, N., DeLongis, A., Kessler, R. C., & Wethington, E. (1989). The contagion of stress across multiple roles. *Journal of Marriage and Family, 51*, 175-183. doi: 10.1037/0022-3514.57.5.808

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park: Sage.

Carlson, D. S., Ferguson, M., Kacmar, K. M., Grzywacz, J. G., & Whitten, D. (2011). Pay it forward: The positive crossover effects of supervisor work-family enrichment. *Journal of Management, 37*, 770-789. doi: 10.1177/0149206310363613

Carlson, D. S., Kacmar, K. M., & Williams, L. J. (2000). Construction and initial validation of a multidimensional measure of Work-Family Conflict. *Journal of Vocational Behavior, 56,* 249-276. doi: 10.1006/jvbe.1999.1713

Carlson, D. S., Kacmar, K. M., Wayne, J. H., & Grzywacz, J. G. (2006). Measuring the positive side of the work-family interface: Development and validation of a work-family enrichment scale. *Journal of Vocational Behavior, 68,* 131-164. doi: 10.1016/j.jvb.2005.02.002

Carlson, D. S., & Perrewe, P. L. (1999). The role of social support in the stressor-strain relationship: An examination of work-family conflict. *Journal of Management, 25*, 513-540. doi: 10.1177/014920639902500403

Carney, R. M., Freedland, K. E., Rich, M. W., & Jaffe, A. S. (1995). Depression as a risk factor for cardiac events in established coronary disease: A review of possible mechanisms. *Annals of Behavioral Medicine, 17,* 142-149. doi: 10.1007/BF02895063

Casper, W. J., Eby, L. T., Bordeaux, C., Lockwood, A., & Lambert, D. (2007). A review of research methods in IO/OB work-family research. *Journal of Applied Psychology, 92*, 28-43. doi: 10.1016/j.jvb.2003.11.003

Chesley, N. (2005). Blurring boundaries? Linking technology use, spillover, individual distress, and family satisfaction. *Journal of Marriage and Family, 67,* 1237-1248. doi: 10.1111/j.1741-3737.2005.00213.x

Clarke, S. C. (2000). Work/family border theory: A new theory of work/family balance. *Human*

Relations, 53, 747-770. doi: 10.1177/0018726700536001

Culbertson, S. S., Mills, M. J., & Fullagar, C. J. (2012). Work engagement and work-family facilitation: Making homes happier through positive affective spillover. *Human Relations, 65*, 1155–1177. doi: 10.1177/0018726712440295

Danes, S. M., & Lee, Y. G. (2004). Tensions generated by business issues in farm business-owning couples. *Family Relations, 53,* 357-366. doi: 10.1111/j.0197-6664.2004.00042.x

Danes, S. M., Zuiker, V., Kean, R., Arbuthnot, J. (1999). Predictors of family business tensions and goal achievement. *Family Business Review, 12,* 241-252. doi: 10.1111/j.1741-6248.1999.00241.x

Demerouti, E. (2012). The spillover and crossover of resources among partners: The role of work-self and family-self facilitation. *Journal of Occupational Health Psychology, 17,* 184-195. doi: 10.1037/a0026877

Demerouti, E., Bakker, A. B., & Schaufeli, W. B., (2005). Spillover and crossover of exhaustion and life satisfaction among dual-earner parents. *Journal of Vocational Behavior, 67,* 266-289. doi: 10.1016/j.jvb.2004.07.001

Dierdorff, E.C., & Ellington, J.K. (2008). It's the nature of work: Examining behavior-based sources of work-family conflict across occupations. *Journal of Applied Psychology, 93*, 883-892. doi: 10.1037/0021-9010.93.4.883

Eberhardt, B. J., & Pooyan, A. (1990). Development of the farm stress survey: Factorial structure, reliability, and validity. *Educational and Psychological Measurement, 50*, 393-402. doi: 10.1177/0013164490502018

Evans, M. (1985). A monte carlo study of the effects of correlated method variance in moderated multiple regression analysis. *Organizational Behavior and Human Decision Processes, 36,* 305-323. doi: 10.1016/0749-5978(85)90002-0

Frone, M. R. (2003). Work–family balance. In J. C. Quick, & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 143−162). Washington, DC: American Psychological Association.

Frone, M. R., Russell, M., & Cooper, M. L. (1992). Prevalence of work-family conflict: Are work and family boundaries asymmetrically permeable? *Journal of Organizational Behavior, 13*, 723-729. doi: 10.1002/job.4030130708

Gasson, R. (1992). Farmers' wives – their contribution to the farm business. *Journal of Agricultural Economics, 43*, 74-87. doi: 10.1111/j.1477-9552.1992.tb00200.x

Goldberg, D.P. (1978). *Manual of the General Health Questionnaire*. Windsor, UK: NFER Nelson.

Gordon, J. R., Whelan-Berry, K. S., & Hamilton, E. A. (2007). The relationship among work-family conflict and enhancement, organizational work-family culture, and work outcomes for older working women. *Journal of Occupational Health Psychology, 12*, 350-364. doi: 10.1037/1076-8998.12.4.350

Greenhaus, J. H. & Beutell, N. J. (1985). Sources of conflict between work and family roles. *The Academy of Management Review, 10*, 76-88. doi: 10.2307/258214

Greenhaus, J. H., Parasuraman, S., & Collins, K. M. (2001). Career involvement and family involvement as moderators of relationships between work-family conflict and withdrawal from a profession. *Journal of Occupational Health Psychology, 6*, 91-100. doi: 10.1037/1076-8998.6.2.91

Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: A theory of work-family enrichment. *Academy of Management Review, 31,* 72-92. doi: 10.5465/AMR.2006.19379625

Gregoire, A. (2002). The mental health of farmers. *Occupational Medicine, 52,* 471-476. doi: 10.1093/occmed/52.8.471

Grzywacz, J. G. (2000). Work-family spillover and health during midlife: Is managing conflict everything? *American Journal of Health Promotion, 14*, 236-243. doi: http://dx.doi.org/10.4278/0890-1171-14.4.236

Grzywacz, J. G., Almeida, D. M., & McDonald, D. A. (2002). Work-family spillover and daily reports of work and family stress in the adult labor force. *Family Relations, 51*, 28-36. doi: 10.1111/j.1741-3729.2002.00028.x

Grzywacz, J. G., & Bass, B. L. (2003). Work, family, and mental health: Testing different models of work-family fit. *Journal of Marriage and Family, 65*, 248-261. doi: 10.1111/j.1741-3737.2003.00248.x

Grzywacz, J. G., & Butler, A. B. (2005). The impact of job characteristics on work-to-family facilitation: Testing a theory and distinguishing a construct. *Journal of Occupational Health Psychology, 10*, 97-109. doi: 10.1037/1076-8998.10.2.97

Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology, 5*, 111-126. doi: 10.1037/1076-8998.5.1.111

Hakanen, J. J., & Schaufeli, W. B. (2012). Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study. *Journal of*

Affective Disorders, 141, 415-424. doi: 10.1016/j.jad.2012.02.043

Halbesleben, J. R. B. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources and consequences. In A. B. Bakker & M.P. Leiter (Eds.), Work engagement: The essential in theory and research (pp. 102−117). New York: Psychology Press.

Halbesleben, J. R. B., Harvey, J., Bolino, M. C. (2007). Too engaged? A conservation of resources view of the relationship between work engagement and work interference with family. *Journal of Applied Psychology, 94*, 1452-1465. doi: 10.1037/a0017595

Halbesleben, J. R. B., Zellars, K. L., Carlson, D. S., Perrewe, P. L., & Rotundo, D. (2010). The moderating effect of work-linked couple relationships and work-family integration on the spouse instrumental support-emotional exhaustion relationship. *Journal of Occupational Health Psychology, 15,* 371-387. doi: 10.1037/a0020521

Hammer, L. B., Allen, E., & Grigsby, T. D. (1997). Work-family conflict in dual-earner couples: Within-individual and crossover effects of work and family. *Journal of Vocational Behavior, 50,* 185-203. doi: 10.1006/jvbe.1996.1557

Hammer, L. B., Colton, C. L., Caubet, S. L., & Brockwood, K. J. (2002). The unbalanced life: Work and family conflict. In J. C. Thomas & M. Hersen (Eds.), *Handbook of mental health in the workplace* (pp. 83-101). London: Sage.

Hammer, L. B., Cullen, Neal, M. B., Sinclair, R. R., & Shafiro, M. V. (2005). The longitudinal effects of work-family conflict and positive spillover on depressive symptoms among dual-earner couples. *Journal of Occupational Health Psychology, 10,* 138-154. doi: 10.1037/1076-8998.10.2.138

Hammer, L. B., & Zimmerman, K. L. (2011). Quality of work life. In S. Zedeck (Ed.), *Handbook*

of industrial and organizational psychology (pp. 399–431). Washington, DC: American Psychological Association.

Hecht, T. D., & Allen, N. J. (2009). A longitudinal examination of the work-nonwork boundary construct. *Journal of Organizational Behavior, 30,* 839-862. doi: 10.1002/job.579

Hedlund, D. E., Berkowitz, A. D., & Bennett, D. E. (1980). Stress in the farm family. *Journal of Extension, 18,* 41-45.

Hennon, C. B. (2012). Entrepreneurship, Farming, and Identity: A Phenomenological Inquiry. In T. Burger-Helmchen (Ed.), *Entrepreneurship – Gender, Geographies and Social Context* (pp. 249-294). Croatia: InTech.

Hill, E. J. (2005). Work-family facilitation and conflict, working fathers and mothers, work-family stressors and support. *Journal of Family Issues, 26,* 793-819. doi: 10.1177/0192513X05277542

Ho, M. Y., Chen, X., Cheung, F. M., Liu, H., & Worthington, E. L. (2013). A dyadic model of the work-family interface: A study of dual-earner couples in China. *Journal of Occupational Health Psychology, 18*, 53-63. doi: 10.1037/a0030885

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternative. *Structural Equation Modeling, 6*, 1-55. doi: 10.1080/10705519909540118

Ilies, R., Wilson, K. S., & Wagner, D. T. (2009). The spillover of daily job satisfaction onto employees' family lives: The facilitating role of work-family integration. *Academy of Management Journal, 52*, 87-102. doi: 10.5465/AMJ.2009.36461938

Ironson, G. H., Smith, P. C., Brannick, M. T., Gibson, W. M., & Paul, K. B. (1989). Construction of a job in general scale: A comparison of global, composite, and specific

measures. *Journal of Applied Psychology, 74,* 193-200. doi: 10.1037//0021-9010.74.2.193

Kahn, R. L., Wolfe, D. M., Quinn, R. P., Snoek, J. D., & Rosenthal, R. A. (1964). Organizational stress: Studies in role conflict and ambiguity. New York: Wiley.

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis.* New York: Guilford.

Kossek, E. E., Baltes, B. B., & Matthews, R. A. (2011). How work-family research can finally have an impact in organizations. *Industrial and Organizational Psychology, 4*, 352-369. doi: 10.1111/j.1754-9434.2011.01353.x

Kossek, E. E., & Ozeki, C. (1998). Work-family conflict, policies, and the job-life satisfaction relationship: A review and directions for organizational behavior-human resources research. *Journal of Applied Psychology, 83*, 139-149. doi: 10.1037/0021-9010.83.2.139

Loscocco, K. A. (1997). Work-family linkages among self-employed women and men. *Journal of Vocational Behavior, 50*, 204-226. doi: 10.1006/jvbe.1996.1576

Marks, S. R. (1977). Multiple roles and role strain: Some notes on human energy, time and commitment. *American Sociological Review, 42,* 921-936. doi: 10.2307/2094577

Matthews, R. A., Del Priore, R. E., Acitelli, L. K., & Barnes-Farrell, J. L. (2006). Work-to-relationship conflict: Crossover effects in dual-earner couples. *Journal of Occupational Health Psychology, 11,* 228-240. doi: 10.1037/1076-8998.11.3.228

McAllister, S., Thornock, C. M., Hammond, J. R., Holmes, E. K., & Hill, E. J. (2012). The influence of couple emotional intimacy on job perceptions and work-family conflict. *Family and Consumer Sciences Research Journal, 40,* 330-347. doi: 10.1111/j.1552-3934.2012.02115.x

McNall, L. A., Nicklin, J. M., & Masuda, A. D. (2010). A meta-analytic review of the consequences associated with work–family enrichment. *Journal of Business and Psychology*, *25*, 381-396. doi: 10.1007/s10869-009-9141-1

Melberg, K. (2003). Farming, stress, and psychological well-being: The case of Norwegian farm spouses. *Sociologia Ruralis, 43*, 56-76. doi: 10.1111/1467-9523.00229

Moen P., Dempster-McClain D., & Williams, R. M. (1992). Successful Aging: A Life-Course Perspective on Women's Multiple Roles and Health. *American Journal of Sociology, 97*, 1612–1638.

Nippert-Eng, C. E. 1995. *Home and work: Negotiating boundaries through everyday life.* Chicago: University of Chicago Press.

Park, Y., & Sprung, J. M. (*in press*). Work-school conflict and health outcomes: Beneficial resources for working college students. *Journal of Occupational Health Psychology*.

Poppleton, S., Briner, R.B., & Keifer, T. (2008). The roles of context and everyday experience in understanding work-non-work relationships: A qualitative diary study of white- and blue-collar workers. *Journal of Occupational and Organizational Psychology, 81*, 481-502. doi: 10.1348/096317908X295182

Ramesh, A. S., & Madhavi, C. (2009). Occupational stress among farming people. *Journal of Agricultural Sciences, 4*, 115-125. doi: 10.4038/jas.v4i3.1650

Robbins, J. M., Ford, M. T., & Tetrick, L. E. (2012). Perceived unfairness and employee health: A meta-analytic integration. *Journal of Applied Psychology, 97,* 235-272. doi: 10.1037/a0025408

Rothausen, T. J. (2009). Management work-family research and work-family fit: Implications for building family capital in family business. *Family Business Review, 22,* 220-234. doi: 10.1177/0894486509337409

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66,* 701-716. doi: 10.1177/0013164405282471

Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior, 30*, 893-917. doi: 10.1002/job.595

Schieman, S., Milkie, M. A., & Glavin, P. (2009). When work interferes with life: Work-nonwork interference and the influence of work-related demands and resources. *American Sociological Review, 74*, 966-988. doi: 10.1177/000312240907400606

Siu, O. L., Lu, J. F., Brough, P., Lu, C. Q., Bakker, A. B., Kalliath, T., …, Shi, K. (2010). Role resources and work-family enrichment: The role of work engagement. *Journal of Vocational Behavior*,*77*, 470–480. doi:10.1016/j.jvb.2010.06.007

Song, Z., Foo, M. D., & Uy, M. A. (2008). Mood spillover and crossover among dual-earner couples: A cell phone event sampling study. *Journal of Applied Psychology, 93*, 443-452. doi: 10.1037/0021-9010.93.2.443

Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal conflict at work scale, organizational constraints scale, quantitative workload inventory, and physical symptoms inventory. *Journal of Occupational Health Psychology, 3*, 356-367. doi: 10.1037/1076-8998.3.4.356

Swisher, R. R., Elder, G. H., Lorenz, F. O., & Conger, R. D. (1998). The long arm of the farm: How an occupation structures exposure and vulnerability to stressors across role domains. *Journal of Health and Social Behavior, 39*, 72-89. doi: 10.2307/2676390

Trussell, D. E., & Shaw, S. M. (2007). "Daddy's gone and he'll be back in October": Farm women's experiences of family leisure. *Journal of Leisure Research, 39,* 366-387.

Tuttle, R. & Garr, M. (2009). Self-employment, work-family fit and mental health among female workers. *Journal of Family and Economic Issues, 30,* 282-292. doi: 10.1007/s10834-009-9154-y

United States Department of Agriculture (2007). *Census of Agriculture*: Washington, D.C.

Vaillant, G. E. (1979). Natural history of male psychologic health – Effects of mental health on physical health. *New England Journal of Medicine, 301,* 1249-1254. doi: 10.1056/NEJM197912063012302

Vanclay, F. (2011). Social principles for agricultural extension in facilitating the adoption of new practices. In D. Pannell & F. Vanclay (Eds.), *Changing Land Management: Adoption of new practices by rural landholders* (pp. 51-68). Collingwood: CSIRO.

Van Steenbergen, E. F., & Ellemers, N. (2007). How work and family can facilitation each other: Distinct types of work-family facilitation and outcomes for women and men. *Journal of Occupational Health Psychology, 12*, 279-300. doi: 10.1037/1076-8998.12.3.279

Van Steenbergen, E. F., & Ellemers, N. (2009). Is managing the work-family interface worthwhile? Benefits for employee health and performance. *Journal of Organizational Behavior, 30*, 617-642. doi: 10.1002/job.569

Vinokur, A. D., van Ryn, M. (1993). Social support and undermining in close relationships: Their independent effects on the mental health of unemployed persons. *Journal of*

Personality and Social Psychology, 65, 350-359. doi: 10.1037//0022-3514.65.2.350

Viswesvaran, C., Sanchez, J. I., & Fisher, J. (1999). The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior, 54*, 314–334. doi: 10.1006/jvbe.1998.1661

Voydanoff, P. (2005). Toward a conceptualization of perceived work-family fit and balance: A demands and resources approach. *Journal of Marriage and Family, 67*, 822-836. doi: 10.1111/j.1741-3737.2005.00178.x

Wayne, J. H., Musisca, N., & Fleeson, W. (2004). Considering the role of personality in the work-family experiences: Relationships of the big five to work-family conflict and facilitation. *Journal of Vocational Behavior, 64,* 108-130. doi:10.1016/S0001-8791(03)00035-6

Westman, M. (2001). Stress and strain crossover. *Human Relations, 54,* 467-481. doi: 10.1177/0018726701546002

Westman, M., Brough, P., & Kalliath, T. (2009). Expert commentary on work-life balance and crossover of emotions and experiences: Theoretical and practice advancements. *Journal of Organizational Behavior, 30,* 587-595. doi: 10.1002/job.616

Westman, M., & Etzion, D. (1995). Crossover of stress, strain and resources from one spouse to another. *Journal of Organizational Behavior, 16,* 169-181. doi: 10.1002/job.4030160207

Westman, M., & Etzion, D. (2005). The crossover of work-family conflict from one spouse to the other. *Journal of Applied Social Psychology, 35*, 1936-1957. doi: 10.1111/j.1559-1816.2005.tb02203.x

Westman, M., Keinan, G., Roziner, I., & Benyamini, Y. (2008). The crossover of perceived health between spouses. *Journal of Occupational Health Psychology, 13,* 168-180. doi:

10.1037/1076-8998.13.2.168

Westman, M., & Vinokur, A. D. (1998). Unraveling the relationship of distress levels within couples: Common stressors, emphatic reactions, or crossover via social interactions? *Human Relations, 51*, 137–156. doi: 10.1023/A:1016910118568

Westman, M., Vinokur, A., Hamilton, L., & Roziner, I. (2004). Crossover of marital dissatisfaction during military downsizing among Russian army officers and their spouses. *Journal of Applied Psychology, 89,* 769–779. doi: 10.1037/0021-9010.89.5.769

Zhang, M., Foley, S., & Yang, B. (2013). Work-family conflict among Chinese married couples: Testing spillover and crossover effects. *The International Journal of Human Resource Management,* 1-19. doi: 10.1080/09585192.2013.763849

Zickar, M.J. (2010). Recognizing the need for a humanistic movement within industrial-organizational psychology. *Industrial and Organizational Psychology, 3*, 97- 99. doi: 10.1111/j.1754-9434.2009.01207.x

Table 1.

Means, Standard Deviations, Ranges, and Paired t tests for Study Variables

	Husbands				Wives					
	Mean	*SD*	Observed Ranged	Possible Range	Mean	*SD*	Observed Range	Possible Range	*df*	*t*
1. Work-Family Facilitation	3.82	.45	2.44 - 5	1-5	3.83	.49	2 - 5	1-5	216	.41
2. Work-Family Conflict	2.48	.57	1 - 3.89	1-5	2.31	.57	1 - 3.9	1-5	216	4.07*
3. Psychological Health	27.79	4.71	11 - 36	0-36	27.62	4.95	11 - 36	0-36	216	.47
4. Physical Symptoms	3.49	2.89	0 - 14	0-36	3.52	2.82	0 - 16	0-36	216	.12
5. Work Engagement	4.97	.87	2 - 6	0-6	-	-	-	-	216	-
6. Farm Satisfaction	-	-	-	-	21.77	4.35	2 - 24	0-24	216	-
7. Spousal Support	3.86	.75	1.5 - 5	1-5	3.87	.73	1.25 - 5	1-5	216	.12

Note. $N = 217$; * $p < .05$

Table 2.

Intercorrelations and Coefficient Alphas Among Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. WFF (*H*)	(.92)											
2. WFC (*H*)	-.41**	(.91)										
3. Psychological Health (*H*)	.42**	-.50**	(.84)									
4. Physical Symptoms (*H*)	-.20**	.23**	-.33**	-								
5. Work Engagement (*H*)	.39**	-.08	.35**	-.18**	(.88)							
6. Spousal Support (*H*)	.42**	-.34**	.48**	-.11	.29**	(.94)						
7. WFF (*W*)	.37**	-.12	.26**	-.15*	.21**	.24**	(.94)					
8. WFC (*W*)	-.11	.41**	-.17*	.04	-.04	-.17*	-.29**	(.92)				
9. Psychological Health (*W*)	.28**	-.25**	.34**	-.11	.07	.34**	.34**	-.37**	(.86)			
10. Physical Symptoms (*W*)	-.17*	.12	-.16*	.25**	-.10	-.10	-.14*	.20**	-.39**	-		
11. Farm Satisfaction (*W*)	.16*	-.20**	.21**	-.09	.07	.20**	.16*	-.25**	.36**	-.18**	(.80)	
12. Spousal Support (*W*)	.37**	-.24**	.31**	-.09	.17*	.53**	.29**	-.25**	.45**	-.08	.28**	(.93)

Note. $N = 217$; *$p < .05$, **$p < .01$; *H* = Husband, *W* = Wife

Table 3.

Summary of Hierarchical Regression Analysis for Husbands' Work Engagement and Wives' Perceptions of Spousal Support in Relation to Wives' WFF

	Step 1			Step 2		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Engagement	.09	.04	-.16*	.12	.04	.21**
Spousal Support	.18	.04	.27**	.19	.04	.27**
Engagement x Support				.13	.05	.19**
R^2		.11			.15	
F for change in R^2		13.44**			8.76**	

Note: $N = 217$, *$p < .05$. **$p < .01$.

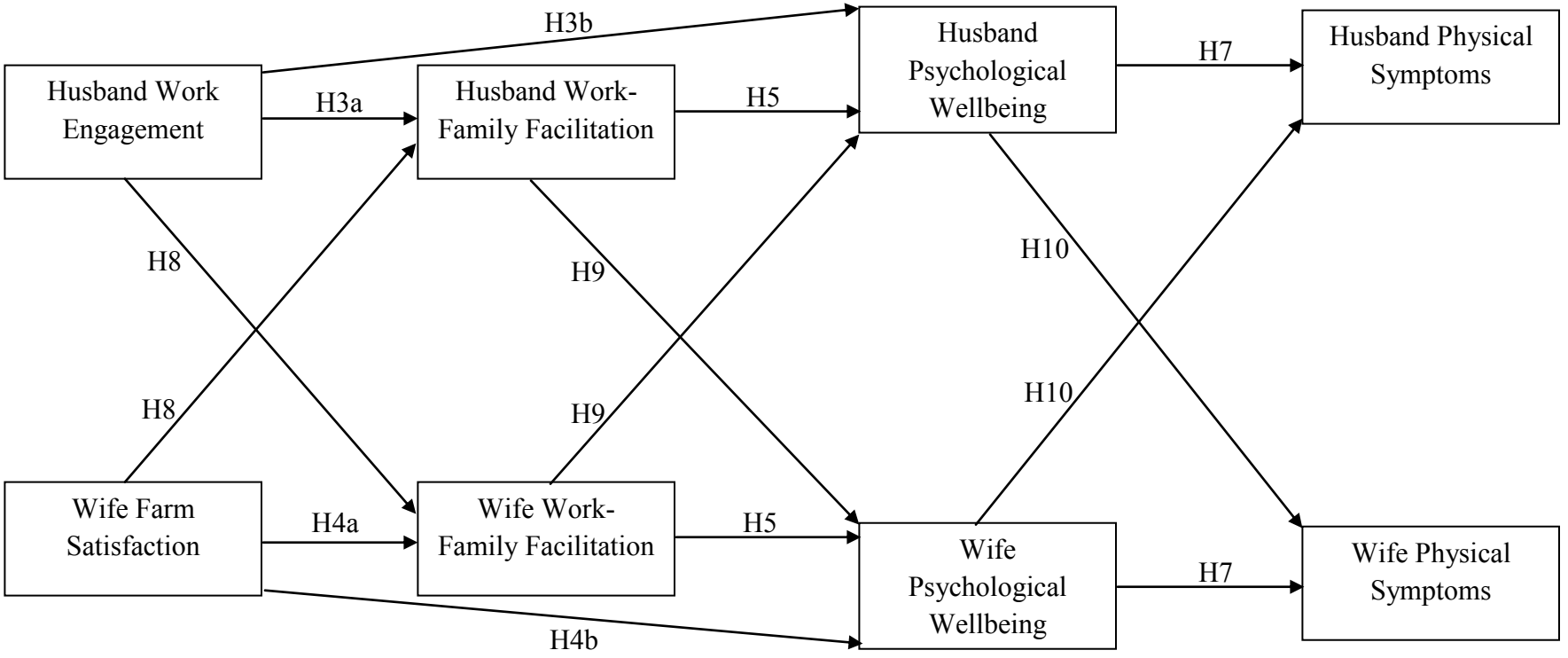

Figure 1. Conceptual model of work-family spillover-crossover among farming couples.

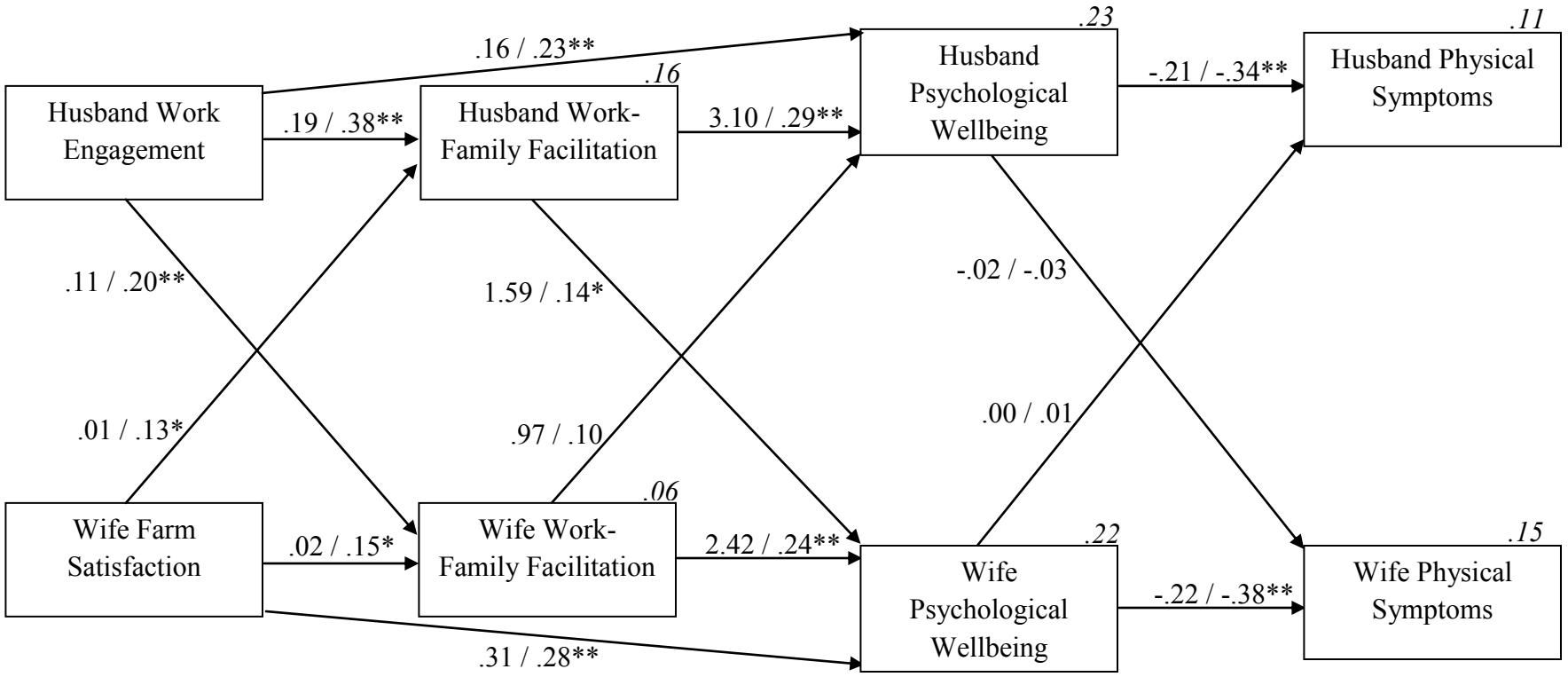

Figure 2. Final empirical model with unstandardized and standardized path coefficients (seen as unstandardized / standardized). Squared multiple correlations for endogenous variables are reported in italics.

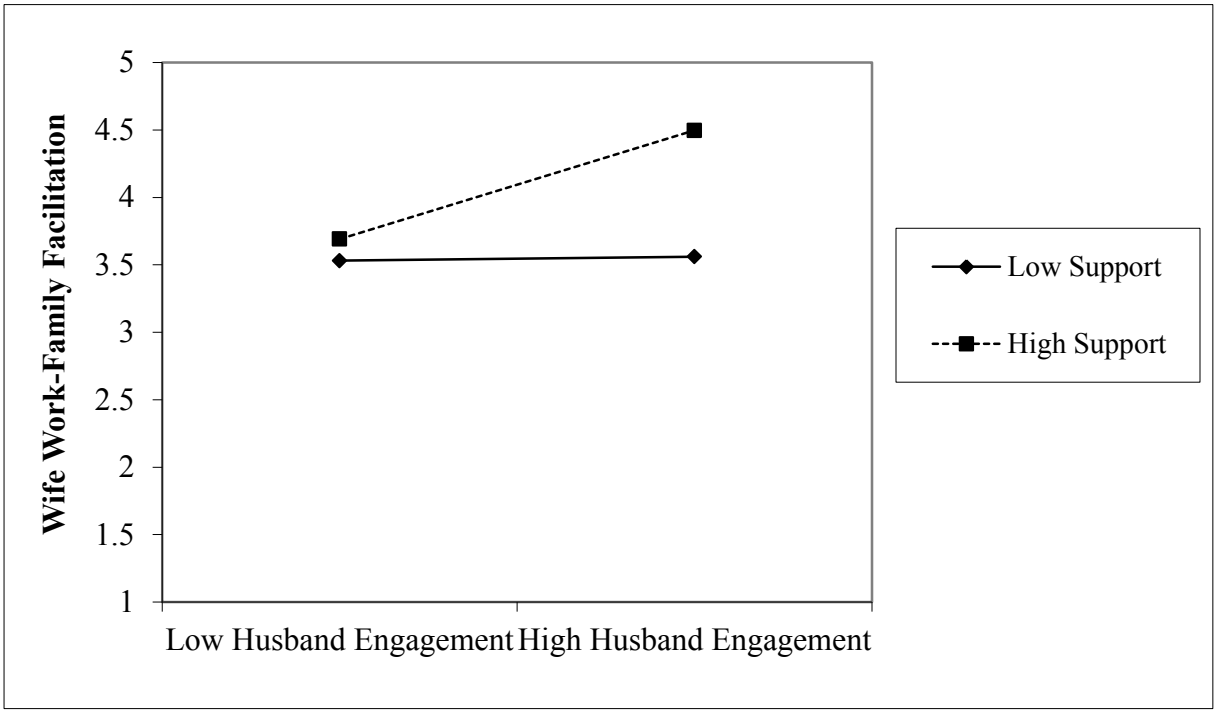

Figure 3. The moderating effect of perceived spousal support on the relationship between husbands' work engagement and wives' work-family facilitation.

APPENDIX A: MEASUREMENT SCALES

A. Work-Family Conflict Scale (Carlson, Kacmar, & Williams, 2000)

Please rate the extent to which you agree/disagree with the following statements

1. My work keeps me from my family activities more than I would like.
2. The time I must devote to my job keeps me from participating equally in household responsibilities and activities.
3. I have to miss family activities due to the amount of time I must spend on work responsibilities.
4. The time I spend on family responsibilities often interfere with my work responsibilities.
5. The time I spend with my family often causes me not to spend time in activities at work that could be helpful to my career.
6. I have to miss work activities due to the amount of time I must spend on family responsibilities.
7. When I get home from work I am often too frazzled to participate in family activities/ responsibilities.
8. I am often so emotionally drained when I get home from work that it prevents me from contributing to my family.
9. Due to all the pressures at work, sometimes when I come home I am too stressed to do the things I enjoy.
10. Due to stress at home, I am often preoccupied with family matters at work.
11. Because I am often stressed from family responsibilities, I have a hard time concentrating on my work.
12. Tension and anxiety from my family life often weakens my ability to do my job.
13. The problem-solving behaviors I use in my job are not effective in resolving problems at home.
14. Behavior that is effective and necessary for me at work would be counterproductive at home.
15. The behaviors I perform that make me effective at work do not help me to be a better parent and spouse.
16. The behaviors that work for me at home do not seem to be effective at work.
17. Behavior that is effective and necessary for me at home would be counterproductive at work.
18. The problem-solving behavior that work for me at home does not seem to be as useful at work.

Strongly Disagree = 1
Disagree = 2
Neither Agree nor Disagree = 3
Agree = 4
Strongly Agree = 5

Note. For husband surveys, the word 'work' was replaced with 'farming' or 'farm work'

B. Work-Family Facilitation Scale (Carlson, Kacmar, Wayne, & Grzywacz, 2006)

Please rate the extent to which you agree/disagree with the following statements

My involvement in my work…

1. Helps me to understand different viewpoints and this helps me be a better family member
2. Helps me to gain knowledge and this helps me be a better family member
3. Helps me acquire skills and this helps me be a better family member
4. Puts me in a good mood and this helps me be a better family member
5. Makes me feel happy and this helps me be a better family member
6. Makes me cheerful and this helps me be a better family member
7. Helps me feel personally fulfilled and this helps me be a better family member
8. Provides me with a sense of accomplishment and this helps me be a better family member
9. Provides me with a sense of success and this helps me be a better family member

Note. For husbands, the stem was changed to: *My involvement in my farm work…*

My involvement in my family…

10. Helps me to gain knowledge and this helps me be a better worker
11. Helps me acquire skills and this helps me be a better worker
12. Helps me expand my knowledge of new things and this helps me be a better worker
13. Puts me in a good mood and this helps me be a better worker
14. Makes me feel happy and this helps me be a better worker
15. Makes me cheerful and this helps me be a better worker
16. Requires me to avoid wasting time at work and this helps me be a better worker
17. Encourages me to use my work time in a focused manner and this helps me be a better worker
18. Causes me to be more focused at work and this helps me be a better worker

Strongly Disagree = 1
Disagree = 2
Neither Agree nor Disagree = 3
Agree = 4
Strongly Agree = 5

C. Work Engagement: Utrecht Work Engagement Scale (Schaufeli, Bakker, Salanova, 2006)

Note. The stem was modified to customize the scale towards farmers

The following 9 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your farm work.

1. While farming, I feel bursting with energy
2. While farming, I feel strong and vigorous
3. I am enthusiastic about my job
4. My job inspires me
5. When I get up in the morning, I feel like going to work.
6. I feel happy when I am working intensely
7. I am proud of the work that I do
8. I am immersed in my work
9. I get carried away when I am working

Never = 0
A few times a year or less = 1
Once a month or less = 2
A few times a month = 3
Once a week = 4
A few times a week = 5
Every day = 6

D. Farm Satisfaction: Job in General Scale (Ironson, Smith, Brannick, Gibson, & Paul, 1989)

Note. The stem was modified to customize the scale to represent satisfaction with farming

Think of the farming lifestyle in general. All in all, what is it like most of the time? In the blank beside each word or phrase below, write

Y for "Yes" if it describes your experience
N for "No" if it does not describe it
? for "?" if you cannot decide

__ Good
__ Undesirable
__ Better than most
__ Disagreeable
__ Makes me content
__ Excellent
__ Enjoyable
__ Poor

E. Psychological Wellbeing: General Health Questionnaire (Goldberg, 1978)

How often have you recently…

1. been able to concentrate on what you were doing
2. Lost much sleep over worry
3. felt you are playing a useful part in things
4. felt capable about making decisions about things
5. felt constantly under strain
6. felt you couldn't overcome your difficulties
7. been able to enjoy your normal day-to-day activities
8. been able to face up to your problems
9. Been feeling unhappy or depressed
10. been losing confidence in yourself
11. been thinking of yourself as a worthless person
12. been feeling reasonably happy, all things considered

Not at all = 0
Sometimes = 1
Often = 2
Very often = 3

F. Physical Health: Physical Symptom Checklist (Spector & Jex, 1998)

During the past 30 days, did you have any of the following symptoms? If you did have the symptom, did you see a doctor about it?

1. An upset stomach or nausea
2. A backache
3. Trouble sleeping
4. A skin rash
5. Shortness of breath
6. Chest pain
7. Headache
8. Fever
9. Acid indigestion or heartburn
10. Eye strain
11. Diarrhea
12. Stomach cramps (not menstrual)
13. Constipation
14. Heart pounding when not exercising
15. An infection
16. Loss of appetite
17. Dizziness
18. Tiredness or fatigue

No = 0
Yes, but I didn't see a doctor = 1
Yes, and I saw a doctor = 2

G. Spousal Support (Vinokur & van Ryn, 1993)

1. How often do you talk with your significant other when you are upset, nervous, or depressed about something?

How often does your spouse (or significant other)

2. provide you with encouragement
3. provide you with useful information
4. say things that raise your self-confidence
5. listen to you when you need to talk
6. show that he/she cares about you as a person
7. understand the way you think and feel about things
8. provide you with direct help, that is, do or give you things you need

Not at all = 1
Rarely = 2
Sometimes = 3
Often = 4
Very Often = 5

APPENDIX B: HUMAN SUBJECTS REVIEW BOARD APPROVAL

BGSU
BOWLING GREEN STATE UNIVERSITY
Office of Research Compliance

DATE:	February 26, 2013
TO:	Justin Sprung, MA
FROM:	Bowling Green State University Human Subjects Review Board
PROJECT TITLE:	[308582-3] Farming and Work-Family Balance
SUBMISSION TYPE:	Continuing Review/Progress Report
ACTION:	APPROVED
APPROVAL DATE:	February 26, 2013
EXPIRATION DATE:	February 25, 2014
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category # *7*

Thank you for your submission of Continuing Review/Progress Report materials for this project. The Bowling Green State University Human Subjects Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

The final approved version of the consent document(s) is available as a published Board Document in the Review Details page. You must use the approved version of the consent document when obtaining consent from participants. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that you are responsible to conduct the study as approved by the HSRB. If you seek to make any changes in your project activities or procedures, those modifications must be approved by this committee prior to initiation. Please use the modification request form for this procedure.

You have been approved to enroll *360* participants. If you wish to enroll additional participants you must seek approval from the HSRB.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. All NON-COMPLIANCE issues or COMPLAINTS regarding this project must also be reported promptly to this office.

This approval expires on February 25, 2014. You will receive a continuing review notice before your project expires. If you wish to continue your work after the expiration date, your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date.

Good luck with your work. If you have any questions, please contact the Office of Research Compliance at 419-372-7716 or hsrb@bgsu.edu. Please include your project title and reference number in all correspondence regarding this project.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Bowling Green State University Human Subjects Review Board's records.