THE COMMUNICATIVE AND PHYSIOLOGICAL MANIFESTATIONS OF RELATIONAL TURBULENCE DURING THE EMPTY-NEST PHASE OF MARITAL RELATIONSHIPS

by

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A Dissertation submitted to the Graduate School – New Brunswick Rutgers, The State University of New Jersey

In partial fulfillment of the requirements For the degree of Doctor of Philosophy

Graduate Program in Communication, Information and Library Studies

Written under the direction of Dr. Jennifer A. Theiss

and approved by

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New Brunswick, New Jersey

October, 2011
ABSTRACT OF THE DISSERTATION

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The relational turbulence model argues that periods of transition in romantic relationships are ripe for upheaval due to heightened relational uncertainty and interference from partners during transition (Solomon & Knobloch, 2004). This dissertation examines the transition to the empty-nest phase of marriage as a period of relational turbulence. The first goal of this dissertation is to identify sources of relationship change, relational uncertainty, and interference from partners during the empty-nest transition. The second goal of this dissertation is to explore communicative and physiological manifestations of relational turbulence in empty-nest couples. Fifty couples who had entered the empty-nest phase of marriage in the past 18 months were recruited to participate in this study. Participants completed open-ended and closed-ended survey questions about their perceptions of their marriage, provided six saliva samples during the course of the study that were later tested for cortisol, and participated in three videotaped interactions about their marriage. Qualitative analyses of open-ended responses indicated common themes among empty-nesters for changes in the marital relationship, relational uncertainty, and
interference from partners. Five themes emerged for changes in the marital relationship: (a) increased couple time, (b) reduced structure and increased freedom, (c) increased communication, (d) increased privacy, and (e) new beginnings; four themes were identified for relational uncertainty: (a) new roles and identities, (b) dependency anxiety, (c) love and intimacy, and (d) growing older; and four themes were identified for interference from partners: (a) relationship facilitation, (b) guilt, (c) forced activity, and (d) household chores. Hierarchical Linear Modeling (HLM) was used to analyze the quantitative and physiological data. Results indicated that the mechanisms of the relational turbulence model predicted self-reported stress and turmoil in empty-nest relationships, as well as topic avoidance, indirectness, and withdrawal in conflict interaction between empty-nest spouses. Results also revealed that indirectness, topic avoidance, and withdrawal during conflict interaction correspond with a more rapid decay of cortisol following the episode, whereas criticism and demandingness are associated with a further increase in cortisol following conflict interaction. These findings, their implications, and directions for future research are discussed.
ACKNOWLEDGEMENTS

“When we become more fully aware that our success is due in large measure to the loyalty, helpfulness, and encouragement we have received from others, our desire grows to pass on similar gifts. Gratitude spurs us on to prove ourselves worthy of what others have done for us. The spirit of gratitude is a powerful energizer.”

— Wilferd A. Peterson

There are several people I wish to thank for their guidance and continued support through this process.

First, I would like to thank my advisor and dissertation chair, Dr. Jennifer Theiss. Thank you for being an amazing role model, mentor, and friend. Every research project, every research team, and every opportunity to assist with a course was truly a great learning experience. The success of this research project is in large part due to the support and encouragement I have always received. Thank you.

I would also like to thank my committee members. Dr. Kathryn Greene, thank you for being an inspiring and confident committee member. I appreciate the guidance at conferences and the opportunity to be introduced to your impressive network of colleagues. Thank you also to Dr. Itzhak Yanovitzky for your much appreciated insight to this project. Your suggestions through this process have added to the quality of the work that was accomplished. Finally, I would like to thank Dr. Leanne Knobloch. My reference list would be half as long as it currently is if it were not for your amazing contributions to the field of interpersonal communication. Your work inspires me to...
continue to enhance my research and analytical skills. I am thankful to be a part of your academic family. I would also like to extend a special thank you to Dr. Lea Stewart whose guidance and support over the years helped me to grow in ways she can only imagine.

I would also like to thank my two colleagues and good friend Roi Estlein and Dr. Maria Koskan Venetis. Roi, it has been great working with you these past few years and I hope to continue to do so wherever our careers may take us. I will always cherish dinners with you, Galia, Noa, and Shira. Maria, I am thankful everyday for you. Thank you for being available to talk and to vent. Thank you for the coffee breaks and the sushi. I could not have made it through without the help and encouragement you provided and continue to provide.

I would like to extend my deepest gratitude to my family. I do not think any of us expected me to take this life course, but here we are. I could not have managed without you. You played a very active role in the planning, implementation, and concluding moments of this study. The idea for this project was initially inspired by your empty-nest relationship; I wanted to find out how other couples could have the loving, fun-filled and positive experience you did. Thank you for the great idea.

Lastly I wish to thank the members of the research team that spent countless hours transcribing, coding, and analyzing. Mara Agrait, Caitlin Flynn, Kara Jordhoy, Jenna Radigan, Katarzyna Sudol, Briana Suffy, Theresa McGinnis, Nicole Porter, thank you all for your hard work.
DEDICATION

To my parents, Rodger and Cathy Nagy
For your unconditional love and support, and for inspiring this research

To my brother, Charlie Nagy
For acting as my partner in crime, confidant, and best friend

To Dr. Jennifer Theiss
For holding onto my pebbles, rocks, and boulders over the years
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Chapter One

The Empty-Nest Relationship

Life is filled with countless turning points and transitions that continually bring us to new stages in the lifecycle. Relationship scholars have identified a number of interpersonal events, or turning points, that characterize relationship development, but less is known about the transformative effect that life events may have on more established romantic relationships (Baxter & Bullis, 1986). For instance, how does a married couple negotiate the birth of their first child; how might long-term romantic partners cope with illness or loss; how do spouses respond to unemployment or retirement? One significant transition in the lifecycle occurs when the nuclear unit consisting of mother (wife), father (husband), and children separate as a result of children “moving on” and moving out of the family home. Although this is often an exciting time for couples who have spent much of their married life raising children, some couples may find it to be somewhat troubling and unsatisfying.

Although the transition to the empty-nest is an anticipated series of events for most couples (Crowley, Hayslip, & Hobdy, 2003), it is often a new and unfamiliar experience in which couples must reestablish relationship rules and roles. Although many couples look forward to the day when they can enjoy each other independently without the distraction of children, couples are often surprised to find that after spending so many years focused on their children they have forgotten how to be intimate as a couple (Crowley et al., 2003). In fact, the empty-nest phase of marriage is often marked as having the lowest levels of satisfaction between partners (Anderson, Russell, & Schumm,
1983), and may result in increased conflict and even divorce (Brubaker, 1985). A variety of other life experiences also co-occur at this stage of life that may contribute to stress and diminished relational satisfaction, such as job loss (Howe et al., 2003), retirement (Conger, Ge, & Lorenz, 1994), aging-related health issues (Bookwala & Jacobs, 2004), or new obligations such as caring for elderly parents (Merrill, 1997). The departure of children from the home requires spouses to return to their roles as husband and wife, which may not have been actively maintained during their children’s adolescence.

Recent statistics suggest that relational struggles may be likely to emerge during the transition to the empty-nest. For example, later life divorce rates show high numbers from individuals who recently have launched or will soon launch their children (Radina, Hennon, & Gibbons, 2008). In 2000, 19.5% of women and 28.1% of men were granted their first divorce at the age of 45 years or older (Kreider, 2005). In 2001, 24.8% of divorces were from marriages that lasted over 15 years, which is the highest divorce rate for this segment of the population throughout history (Kreider, 2005). On one hand, these statistics may suggest that the potential for conflict was a latent factor in the marriage, suppressed by having the joint responsibility to care for children. On the other hand, these statistics might suggest that there are dynamics of the empty-nest transition that contribute to relational strife. Thus, the goal of this dissertation is to better understand the communication that occurs in empty-nest spousal relationships during this transition, and to examine how the turmoil of this transition is manifested in communicative and physiological ways.

This chapter begins with a discussion of transitions and turning points in relationships. Then, a summary of the literature on the pre-launching stage and the
postparental period, which consists of the time period after children are launched from the home, will be presented. Finally, the empty-nest experience, which produces positive feelings and reactions to this transition, as well as the empty-nest syndrome, which consists of negative reactions to the event, will be discussed.

**Transitions and Turning Points**

*Turning points* are transformative events that alter the relationship in some way (Baxter & Bullis, 1986; Baxter & Pittman, 2001; Bolton, 1961). Turning points are defined as events that are salient in the development of a relationship and in some way transform or alter that relationship (Baxter & Bullis, 1986). Much of the turning point literature has focused on dating relationships, for instance engaging in the first big fight in a relationship (Siegert & Stamp, 1994), a first sexual encounter (Theiss & Solomon, 2007), and saying “I love you” for the first time in a romantic relationship (Nydick & Cornelius, 1984; Wilmot & Baxter, 1984) are all examples of turning points in dating relationships. Whether the valence of the event is positive or negative, the relationship changes as a result of that experience. *Transitions* refer more broadly to the movement of an individual or a couple from one life stage to another, for example, from dating to married, from couple to family, or from family to empty-nesters. Transitions involve adjustments to new life circumstances and the development of new roles and responsibilities. In the empty-nest experience, the actual launching of children can be viewed as a turning point, although for the parents, becoming empty-nesters is a transition that occurs over time.

Transitions are complex responses to change in relationships (George, 1993; Marineau, 2005). The multidimensional process of reintegrating and reorganizing roles,
identities, relationships, and/or behaviors during transitions is often associated with relational instability (Walker, Manoogian-O’Dell, McGraw, & White, 2001). The transition to the empty-nest stage for parents begins in the pre-launching phase as parents ready themselves for impending change. As marital couples reorganize roles through this transition some may experience feelings of role loss, leading to a negative transition to the empty-nest stage (Bart, 1971), whereas others have found greater satisfaction as a result of shifting roles (Glenn, 1975). As couples make this transition, oftentimes they are forced to establish new identities. This is predominantly true for women (Phillips, 1957) and more so for homemakers (Williams, 1977) who base their identity on their role as caregiver. Men’s identities shift during this time to become more centralized around their work roles (Back, 1971). The transition to the empty-nest also provides an opportunity for spouses to reintegrate their behaviors. This reintegration with one’s spouse has been associated with greater enjoyment of time spent with a spouse, although not necessarily with an increase of time spent together (Gorchoff, John, & Helson, 2008), specifically for women.

In contrast to transitions that unfold over time, turning points refer to categories of specific events which arise for many romantic couples, particularly in dating relationships. These categories include getting to know one another, quality time, physical separation, external competition, reunion, passion, disengagement, positive psychic change, exclusivity, negative psychic change, making up, serious commitment, sacrifice, and other events (Baxter & Bullis, 1986). The turning points framework was originally established to explain salient benchmarks in the development of a dating relationship, and as such, it is not well-equipped to explain turning points in more
established relationships. One major reason for this shortcoming is that in well-established relationships many turning points have already been accomplished, for instance getting to know one another, meeting one another’s parents, and engaging in first sexual intercourse have already occurred. Nevertheless, the transition to the empty-nest phase of a marriage may involve a variety of new turning points that characterize this experience. For example, as the couple begins to rekindle the romantic nature of their relationship before children, reunion may come into play as spouses ‘rediscover’ one another, which may also affect the passion spouses experience. Quality time for the spouses may increase as there are no longer time constraints on the romantic relationship, such as rides to soccer practice or dance recitals. Spouses may experience positive psychic changes when considering the new status of their marriage, such as feelings of fulfillment and relief, or negative psychic changes, such as feeling unfamiliar with or uncertain about one’s partner. In other words, the transition to the empty-nest may be littered with positive or negative turning points.

Turning points correspond with increased relationship talk, which is a mechanism that assists couples as they transition to a new stage of their relationship (Baxter & Bullis, 1986; Golish, 2000). Relationship talk consists of messages that explicitly reference the nature, state, or future of a relationship (Acitelli, 1988, 2008; Knobloch et al., 2006). Relationship talk can be positive or negative and can help the couple to understand how the turning point has altered and redefined the relationship (Bullis & Bach, 1989; Siegert & Stamp, 1994). Positive outcomes of relationship talk include greater understanding of one another, awareness of the relationship, willingness to discuss dyadic issues, and a desire to maintain an acceptable level of relational functioning (Acitelli, 2001). Studies
have demonstrated a strong connection between relationship talk and positive outcomes of the relationship, such as relational satisfaction (e.g., Acitelli, 1988, 1992; Acitelli & Badr, 2005; Badr & Acitelli, 2005). Although many studies highlight positive outcomes from relationship talk, others bring light to the negative effects relationship talk can have on the relationship. For instance, direct talk with a romantic partner has risks associated with revealing incompatibilities, general conflict, embarrassment or damage to the self-image or the relationship (Afifi & Burgoon, 1998; Baxter & Wilmot, 1985). Despite these risks, communication is important to couples who are trying to navigate the transition to the empty-nest phase of their relationship as communication generally has outcomes both positive and negative to the individuals involved in relationships.

Turning points research has already been applied to a variety of contexts beyond courtship. Golish (2000) examined major turning points in the relationship between an adult child and a parent, suggesting physical distance, communication, and dating/cohabitation of children as some turning points that can affect the relationship between a parent and a child. Turning points research has also been explored in the study of blended families (Baxter, Braithwaite, & Nicholson, 1999), highlighting conflict and quality time as two of the fifteen major types of turning points in these relationships. Turning points research has been shown to explain female victims’ motivation to change situations when engaged in intimate partner violence (Chang et al., 2010). Still other research has explored the role of personality traits in middle adulthood and found stressful events were viewed as turning points for individuals high in neuroticism, but individuals classified as extroverts or conscientious viewed stressful events as learning experiences (Sutin et al., 2010b). Sutin and colleagues (2010a) also found lower self-
ratings of health and higher ratings of psychological distress associated with turning
points, specifically negative turning points, in relationships.

In light of these previous extensions of the turning points framework, it is
interesting to consider the turning points that characterize the transition to the empty-nest
phase of marriage. As a crucial stage in the family lifecycle, the transition to the empty-
nest marks an important period of time in the progression of a marriage. The next section
provides a brief overview of the family lifecycle and the events that characterize the
empty-nest transition.

**The Family Lifecycle**

Olson and McCubbin (1983) suggest seven lifecycle stages of the family: young
married couples without children, families with preschoolers, families with school-age
children, families with adolescents, launching families sending young adults into the
world, the empty-nest experienced as life after children, and the retirement years. Of
specific interest in this research are the launching stage and the empty-nest stage. How do
couples prepare for and interact with one another during these transitions (which notably
are towards the end of the family lifecycle)? Research shows the launching period is
characteristically a low point for couples, specifically in marital satisfaction, spousal
companionship, and coming to consensus on roles within the marriage (Anderson et al.,
1983). The empty-nest stage has historically been viewed in much the same negative light
(Kahana & Kahana, 1982); however, recent research suggests additional underlying
factors that may influence the experience of empty-nest couples (see, for example Black
& Hill, 1984; Borland, 1982; White & Edwards, 1990). Marital satisfaction, role
negotiation, and coordinating patterns of communication are all salient variables in
understanding the challenges spouses encounter as they negotiate moving from one stage in the family lifecycle to the next.

**Launching Children**

The launching stage is generally characterized as the period of time between the first child’s departure from the home until the last child leaves the home (White, 1991). The major task in the launching children stage revolves around accepting a multitude of exits from and entries to the family and requires second-order changes in the family unit for developmental success, including renegotiation of the marital dyad, realignment of relationships, and dealing with disability and death (Carter & McGoldrick, 1999; Gladding, 2009). For many families, the full benefit of the launching stage is not realized until the child has moved out (Gladding, 2009).

The launching stage for families can be accompanied by positive experiences for the marital relationship and the parent-child relationship, and is largely related to roles, which are heavily argued in family lifecycle literature. The role change perspective (Holmes & Rahe, 1967) suggests that any change in one’s relational roles, whether adding a new role or eliminating an old role, can be detrimental to one’s physical and psychological well-being. Other literature suggests the more roles one has, the better off one will be, especially in the face of role change or transition (Thoits, 1983). The benefits of a large role set are discovered as the role of parent is lost or relinquished during the launching stage. For individuals, most frequently mothers, who have smaller role sets and self-identify more strongly with their role as parent, the loss of the parental role during the launching stage may leave the individual feeling empty. On the other hand, if the parental role is identified as a stressful role (for example due to conflict between the
parent and child), its loss would be beneficial to the parent (McLanahan & Adams, 1987). In addition, the deletion of the parental role, by way of emptying the nest, may lead to improvements in parental well-being (McLanahan & Adams, 1987) and bring relief for parents who no longer need to engage in that role (Glenn, 1975; Miller & Myers-Walls, 1983).

Although coordinated communication is a common characteristic of families sharing a household, previous research highlights the stress that is experienced by parents to coordinate the household (McLanahan & Adams, 1987). For instance, research finds that the launching stage for families has been characterized as the stage in the family lifecycle with the lowest family cohesion and the lowest wife-to-husband perceptions of cohesion (Olson, 1988). Olson suggests one reason for the low levels of family cohesiveness during this time may be related to the child's differentiating himself or herself from the family, thereby resulting in diminished feelings of togetherness and closeness for all members of the family.

There are also competing views on marital satisfaction and how spousal relationships are affected by lifecycle changes. One viewpoint suggests a general decline in marital satisfaction over the lifespan (Blood & Wolfe, 1960), while the others suggest decline in marital satisfaction in the early lifecycle stages with an increase in the later lifecycle stages (Rolins & Feldman, 1970), and still others indicate no significant change in marital satisfaction (Bossard & Boll, 1955). More recent research on marital satisfaction in the later stages of the lifecycle suggests a slight increase when the children leave home (Barber, 1989; White & Edwards, 1990), perhaps due to the relief felt by spouses as no longer having to enact the parent role.
The Postparental Period

The postparental period (Borland, 1982), is commonly labeled *empty-nest* and is used to describe the home of the family that has experienced the moving out of all children and is left with only the husband and wife (Harkins, 1978; Junge & Maya, 1985). More specifically, this period is characterized as the time when the last child leaves the house, whether it is to leave for college, move to a separate residence, or get married (Harkins, 1978). The empty-nest metaphor conjures the image in nature of the parent birds forcibly removing their brood by pushing the baby birds out of the nest, with hopes that they will learn to succeed in the world and fly on their own. *Empty-nesters* refers to the married couple once this event has occurred, and may conjure images of an older married couple sitting at home with no children left to care for. Amidst the sadness of emptying the home, people presume that this period is like a return to the honeymoon phase for a couple. Although some couples have a hard time recovering the spark of early marriage, they find other ways to be fulfilled in their lives. Most research surrounding adult midlife transitions has focused heavily on women’s experiences, suggesting that women are viewed as “fertility has-beens,” abandoned, and depressed because of the situation they now find themselves in: barren and without children to care for in the home (see McQuaide, 1998). This research, although not directly pertaining to the modern working woman, suggests that many times the mother’s primary role throughout the better part of her life has been motherhood and raising the children, but post launching period this role is less salient as a result of the children’s absence. Less is known about how men weather this transition.
When experienced as a positive stage in the family lifecycle, this transition is given the name *empty-nest experience* (Raup & Myers, 1989). In the empty-nest experience, feelings of a newfound freedom and even relief emerge as the prominent feelings for spouses (White & Edwards, 1990; Umberson et al, 2005). Underlying the experience, however, may rest guilt or even worry about one’s parenting skills, which may diminish the positive feelings experienced (Raup & Myers, 1989). In addition to an increase in marital satisfaction, White and Edwards (1990) noted positive relationship effects were greatly increased for those couples who recently launched their children but kept in frequent contact after the launch. Further, Harkins (1978) notes couples report greater marital satisfaction, more spontaneity and intimacy, increased time alone, greater happiness, more freedom, and better financial condition once the couple rediscover quality time together.

When negative feelings are more prominent in an individual or in the relationship individuals are said to experience the *empty-nest syndrome*. The empty-nest syndrome is characterized as a reaction to loss, similar to that experienced in postpartum depression. Individuals experiencing the empty-nest syndrome may experience grief, sadness, or depression (Kahana & Kahana, 1982) most significantly as a result of the loss of children and the loss of their parental roles (Borland, 1982; Raup & Myers, 1989). These individuals, specifically women, who have over-given of themselves and consistently replaced their own needs with their children’s needs, and who strongly identify themselves in the role as ‘mother’ are most susceptible to empty-nest syndrome (Black & Hill, 1984; Borland, 1982). Further, in regards to role identity, mothers who are employed full-time or who have other roles beyond that of mother to counter-balance the
physical loss of children in the home tend to be less affected by the empty-nest syndrome, whereas the opposite is true for unemployed women (Black & Hill, 1984; Powell, 1977).

Empty-nesters may experience a range of adaptive emotion and behaviors during this transitory time, ranging from complete refusal or acknowledgement to view children as capable of living successful, autonomous lives, to a time of marital renewal and growth (Crowley, Hayslip, & Hobdy, 2003; Raup & Myers, 1989). Although some couples experience positive effects such as marital renewal in their postparental relationship, others experience more negative effects. For example, empty-nesters report lower income and a higher prevalence of chronic diseases compared to non-empty-nesters (Liu, Sun, Zhang, & Guo, 2007). Empty-nesters also report poor mental health as a result of the launching of their children, including increased stress and depression (Long & Martin, 2000; Pillay, 1988). Furthermore, empty-nesters have a more difficult time managing other life stressors, including the loss of a job, compared to non-empty-nesters (Crowley, Hayslip, & Hobdy, 2003).

An examination of individual and family life stages indicates the distinctive nature of relationships prior to and after the transition to a new life stage. The nature of relationships during the transition is less understood. For example, Schafer and Keith (1992) examined partners’ cognitions as relational partners moved through various life stages, including the empty-nest stage. They found relational partners identify and devise new means of coping with the prospective demands of the new situation. For example, couples may conceptualize or reframe the relationship or the situation as a way to better manage the relationship. Whether the outcome of the launching period results in positive or negative cognitive changes are largely determined by how the transition to empty-
nesters is managed and reacted to by the couple (Schafer & Keith, 1992). Marital satisfaction has also been studied as a result of family life stage shifts. For instance, research shows marital satisfaction increases prior to the post-parental stage (Burr, 1970; Glenn, 1975), and declines at the postparental stage (Bart, 1971). These conflicting findings echo in research over the past four decades. The constant in these studies is the underdeveloped research exploring marital satisfaction during the transition to the empty-nest stage of the family lifecycle.

**Relational Struggles During Late Life**

Divorce and separation have increased in numbers over the past few decades; however, an interesting trend is the increase in divorce and separation among adults in later life (Honeyman et al., 1994). The choice to divorce in later life may be attributable to a host of factors, perhaps a result of living longer lives due to medical advances, cohort acceptability of divorce and separation as normative and accepted, or healthier adults later in life due to lifestyle changes (Wu & Schimmele, 2007). Also, turmoil during the empty-nest transition may place this generational cohort as susceptible to being single at older ages by choice and not solely by widowhood (Wu & Schimmele, 2007). Termed *late life uncoupling*, this trend has multiple consequences for psychological health and well-being, social support from friends and family members, social involvement in regular activities, loneliness, decreased life satisfaction, and suppressed economic welfare (Wu & Schimmele, 2007).

Despite advances in later life health and longer lives being lived, the chances a marriage will last 50 years before divorce or separation is a dismal 1 in 5 (Cavenaugh &
Parks, 1993). Moreover, the divorce rate for those over 65 years old is increasing not only in the United States, but in Canada, Britain, Italy, France, Japan, among other countries (Kingston, 2007). Although the number of divorces in the United States has been decreasing since the 1970’s, the portion of the divorce rate among couples over the age of 65 is actually increasing (Kingston, 2007). Traditionally, marriages that dissolve are more likely to do so within the first 8 years of marriage (Kreider, 2005), and the longer a couple is married the less likely it is they will divorce (White & Booth, 1991; Wu & Penning, 1997). Thus, the fact that late life divorce is on the rise suggests a growing need to better understand the dynamics of romantic relationships at this stage of involvement to identify some of the factors contributing to this new trend.

Major relational transitions in late life, such as the launching of children and the adoption of new roles (Hope, Rodgers, & Power, 1999; Wade & Pevalin, 2004), diagnosis of illness (Brashers et al., 1998), retirement, poor health, and family finances (Bossé et al., 1991) are linked to instances of increased psychological distress and stress. Moreover, when both spouses indicate stress and psychological distress or mental disorder, the divorce rates are eight times higher than that of the general population (Merikangas, 1984). Therefore, it can be assumed that when both spouses experience higher stress levels in their relationship from a turbulent event, such as becoming empty-nesters, the potential for the relationship to suffer long-lasting negative effects should be higher. Early studies examining this transition have also found a relationship to alcohol and other drug dependence in spouses having difficulty adjusting to this transition (Curlee, 1969). In addition, substance dependence can translate to higher divorce rates as a result of this and other stressors combined (Butterworth & Rodgers, 2008).
Couples entering the empty-nest phase of their relationship may experience negative stressors associated with this change. Although launching children out of the nest may not always be permanent (e.g. Mitchell, 1998; Okimotoa & Stegall, 1987), the transition consistently calls for a redefinition of roles and experiences by the parents each time these changes occur. Sometimes these transitions move the couple smoothly to their new roles, taking on a deeper appreciation and a better understanding of one another, while other experiences are likely to come at a high cost to spouses, as the situation becomes new and challenging to them each time a change is made. Couples may find themselves married to a different person than they married years earlier. Having the children living in the house may be, for many couples, the solitary reason they are staying together, and once it is established the children can survive on their own, spouses may decide the time is right to separate. Women are least satisfied becoming empty-nesters, so it is not surprising that they are initiating divorce in later life more frequently than men (Bair, 2007; Montenegro, 2004).

The empty-nest transition allows for increased communication surrounding the relationship, which can lead to positive relational outcomes such as increased marital satisfaction and increased life satisfaction (Golish, 2000); however, this increase in communication may also be a detriment to establishing the empty-nester’s relational identity. Some people may weather the storm of the empty-nest transition more effectively if they communicate and engage in more relational talk (as threatening and risky as it may seem to individuals in relationships), whereas others may experience increased relationship talk as bringing latent marital problems forward, when perhaps for the sake of the relationship they were better left alone. This study seeks to examine
associations between communication and stress in spousal relationships undergoing the empty-nest transition.

**Goals for this Dissertation**

Research on the empty-nest period suggests that this can be a satisfying and tranquil time for some married couples and a dissatisfying and tumultuous time for others. More research is needed to identify the factors that contribute to the struggle or success of empty-nest relationships. By understanding the challenges many couples endure during relationship transitions, research can shed light on situations couples should be aware of when entering new life stages. Researchers and practitioners can then develop strategies for struggling couples to effectively manage these times of relationship stress. Likewise, by understanding the relational strategies that couples use to successfully negotiate these transitions, researchers and relationship practitioners can highlight these fundamentals so other couples may experience similar positive outcomes.

In this dissertation, I will examine sources of turmoil and stress for couples who are negotiating the empty-nest transition. The theoretical framework of the relational turbulence model will be used to explain why this transition might be problematic for some couples. In the next chapter, I will fully develop the theoretical framework of the relational turbulence model. Consistent with this model, relational uncertainty and interference from partners will be highlighted as two main features of romantic relationships that are increased during transitional periods in relationships and make people more reactive to their relational circumstances. Whereas the relational turbulence model has previously examined manifestations of turmoil in terms of emotional,
cognitive, and communicative reactivity to relationship events, I intend to extend the model to consider physiological manifestations of stress.

The goals of this dissertation are three-fold. First, this dissertation will identify sources of turmoil and stress for couples during the empty-nest phase of marital relationships. Second, this dissertation will examine features of conflict communication as a marker of turmoil for marital couples who are negotiating the empty-nest transition. Third, this dissertation will measure trait and state levels of salivary cortisol as a marker of underlying stress during the empty-nest transition, as well as acute stress that is experienced in response to conflict interactions. The relational turbulence model will provide a theoretical foundation for addressing these queries. The next chapter will articulate the assumptions of the relational turbulence model.
Chapter Two

Theoretical Support for Exploring the Empty-Nest Transition

Recall from the previous chapter that although some couples experience the empty-nest transition as a positive event for their relationship, other empty-nesters may experience sadness, grief, or depression (Kahana & Kahana, 1982), chronic disease, (Liu et al., 2007), and psychological distress and stress (Hope, Rodgers, & Power, 1999; Wade & Pevalin, 2004). The transition to the empty-nest phase of a marriage is a transition that has the potential for a variety of stressors and uncertainties for both parents and for the marital relationship as a unit. The relational turbulence model (Solomon & Knobloch, 2004; Solomon & Theiss, 2008) identifies characteristics of romantic relationships that make people more reactive to their relationship circumstances during relational transitions. Relational turbulence refers to the intensified emotional, cognitive, and behavioral reactions to relationship events that arise under certain relational conditions. Specifically, the relational turbulence model nominates relational uncertainty and interference from partners as two features of romantic relationships that contribute to relational turbulence. This chapter looks to the relational turbulence model as a theoretical explanation for the individual and relational issues that occur for empty-nesters.

The Relational Turbulence Model

The relational turbulence model was developed to account for patterns of more extreme emotions, cognitions, and communication behavior at moderate levels of intimacy in developing relationships (Solomon & Knobloch, 2001; 2004). The first articulation of the relational turbulence model (Solomon & Knobloch, 2004) focused on
courtship and claimed that the transition from casual to serious involvement in romantic relationships corresponds with increased relational uncertainty and interference from partners. Although early research typically portrayed a linear association between relational uncertainty and intimacy, such that relational uncertainty decreases as intimacy increases (e.g., Berger & Bradac, 1982; Berger & Calabrese, 1975); Knobloch & Solomon (2002a) identified a convex curvilinear association between episodic relational uncertainty and moderate levels of intimacy. Recent research shows relational uncertainty is a persistent part of romantic relationships at varying stages, including highly committed relationships (Knobloch, 2008; Solomon & Theiss, 2008). With regard to a partner’s interference, the relational turbulence model argued that interference from partners should peak during the transition from causal to serious involvement, and subside across higher levels of intimacy as interference is replaced by more facilitative action by relational partners (Solomon & Knobloch, 2004). Solomon and Theiss (2008) tested the relational turbulence model longitudinally and found that interference from partners does increase across low and moderate levels of intimacy, but plateaus across high levels of intimacy. Thus, recent tests of the relational turbulence model have argued that relational uncertainty and interference from partners are salient issues beyond courtship.

Inconsistent findings for a curvilinear association at moderate levels of intimacy, and evidence that relational uncertainty and partner interference are more proximal predictors of relational outcomes, has resulted in a second generation of the relational turbulence model applying the logic of the model to relational transitions beyond courtship. Recent research has pointed to the ways in which relational uncertainty and
interference from partners can be influential during a number of transitions in committed relationships, such as the diagnosis of breast cancer (Weber & Solomon, 2008), the diagnosis of infertility (Steuber & Solomon, 2008), and the reintegration of service members following deployment (Knobloch & Theiss, in press).

This dissertation further extends the applications of the relational turbulence model by using it to explore the empty-nest transition. Often what makes transitional periods turbulent is the variety of changes that occur for individuals and their relationships during that time. Thus, as a starting point, I query the changes that characterize the empty-nest transition. Thus, my first research question queries the nature of this phase in life and the changes couples experience as they navigate this transition.

RQ1: What changes to their relationship, if any, do couples report experiencing during the transition to the empty-nest phase of marriage?

In light of the various changes that occur during the empty-nest transition, the relational turbulence model suggests that relational uncertainty and interference from partners should be heightened during this time. In this chapter, I discuss relational uncertainty and interference from partners as two mechanisms that contribute to turbulence as empty-nest couples cope with the changes to their romantic relationship.

**Relational Uncertainty**

Generally defined, uncertainty exists when multiple outcomes of a given interaction are possible (Shannon & Weaver, 1949), and when one lacks the confidence and ability to predict future events and explain and understand past events (Berger & Bradac, 1982; Berger & Calabrese, 1975). Historically, research on uncertainty has focused on the reduction of uncertainty as a way to improve closeness and further the
development of interpersonal relationships (Berger & Calabrese, 1975). The primary argument of uncertainty reduction theory was that initial interactions are fraught with uncertainty and the only way for initial interactions to progress and for interpersonal relationships to develop was to reduce the amount of uncertainty present (Berger & Calabrese, 1975; Sunnafrank, 1986). More recently, researchers have expanded the focus of uncertainty to encompass potential advantages uncertainty holds for interpersonal relationships (e.g., Knobloch & Solomon, 2002b; Brashers, 2001). One perspective suggests that uncertainty can be beneficial to relationships because it helps to prevent monotony and boredom in the relationship (Baxter & Montgomery, 1996). Furthermore, uncertainty management theories have suggested uncertainty may be desirable when there are concerns about potential certainty of an undesired outcome, such as grave information about one’s health (Brashers, Goldsmith, & Hsieh, 2002). In addition, knowing too much, or rather having too much certainty about a relationship partner can slow or even halt the development of a relationship (Planalp et al, 1988).

Early in the development of URT the focus was on reducing uncertainty to increase intimacy (Berger & Calabrese, 1975), but more recent research has acknowledged that uncertainty can be prevalent even in established relationships. 

Relational uncertainty stems from three interrelated sources of ambiguity in relationships – self, partner, and relationship uncertainty – and refers to the degree of confidence people have in their perceptions of their involvement within interpersonal relationships (Berger & Bradac, 1982; Knobloch & Solomon, 1999). Self uncertainty refers to the doubts an individual has about his or her own involvement in the relationship; for example, “I’m not sure if I want to be romantically involved with this individual.”
Partner uncertainty refers to the doubts people experience about a partner’s involvement and dedication to the relationship; for example, “I’m not sure if my partner is still interested in being involved with me.” Relationship uncertainty is the uncertainty an individual experiences as he or she evaluates the status of the relationship more generally; for example, “I’m not sure if this relationship is going to last forever.”

Relationship uncertainty exists on a broader level of abstraction and encompasses both self and partner uncertainty. Although these three sources of relational uncertainty are highly correlated, previous studies have not found that they form a unidimensional first-order factor (Solomon & Knobloch, 2004).

The relational turbulence model argues that relational uncertainty contributes to more intensified emotional, cognitive, and behavioral reactions in relationships (e.g., Solomon & Knobloch, 2004). Jealousy, for example is an emotional outcome of relational uncertainty (Afifi & Reicher, 1996; Knobloch, Solomon, & Cruz, 2001; Theiss & Solomon, 2006a). In addition, Aune, Aune, and Buller (1994) demonstrate that more negative emotions arise under conditions of relational uncertainty. Hurt is another negative emotion that is associated with increased relational uncertainty (McLaren & Solomon, 2008; Theiss et al., 2009). Depressive symptoms are positively associated with relational uncertainty, and relational uncertainty mediates the link between depressive symptoms and relational quality (Knobloch & Knobloch-Fedders, 2010). Increased negative emotion such as fear, anger, and sadness are also emotional outcomes of relational uncertainty (Knobloch, Miller, & Carpenter, 2007; Knobloch & Theiss, 2010). Married partners who are experiencing relational uncertainty report more negative
emotional reactions to sexual intimacy (Theiss & Nagy, 2010) less love for their partner (Knobloch, 2008).

Cognitive reactivity is also heightened under conditions of relational uncertainty (Solomon & Knobloch, 2004). Previous research has found that relational uncertainty is associated with appraisals of irritations in relationships as more severe and relationally threatening (Solomon & Knobloch, 2004; Theiss & Knobloch, 2009; Theiss & Solomon, 2006b). People experiencing relational uncertainty may have difficulty producing and processing messages competently (Knobloch, 2006; Knobloch & Solomon, 2005). Relational uncertainty is also associated with increased cognitive jealousy (Theiss & Solomon, 2006a). Couples experiencing relational uncertainty also perceive conversations with their partner to be threatening to their relationship (Knobloch, Miller, Bond, & Mannone, 2007). Relational uncertainty is also associated with perceptions of increased turmoil in the relationship (Knobloch, 2007; Knobloch & Theiss, 2010) and appraisals that social network members are unsupportive of the relationship (Knobloch & Donovan-Kicken, 2006).

Previous research has also shown increased relational uncertainty corresponds with polarized behavioral and communicative reactions to relationship events. For example, people employ more topic avoidance under conditions of relational uncertainty (Afifi & Guerrero, 1998; Knobloch & Carpenter-Theune, 2004). In particular, romantic partners tend to avoid relationship talk when they are experiencing relational uncertainty (Knobloch & Theiss, 2011). Relational uncertainty also predicts more communicative directness (Afifi & Weiner, 2004; Planalp & Honeycutt, 1985) and indirectness (Knobloch, 2006; Theiss & Solomon, 2006a; 2006b) depending on the situation. For
example, people who experience self uncertainty are more direct in confronting irritations, but people who experience partner or relationship uncertainty tend to be more indirect (Theiss & Solomon, 2006b). Relational uncertainty is also associated with less direct communication about relationship status and strategies to protect the relationship (Baxter & Wilmot, 1985).

Beyond this understanding of relational uncertainty, recent research has further explicated relational uncertainty by delineating six propositions regarding the negative implications of relational uncertainty for people’s communication behaviors (Knobloch & Satterlee, 2009). According to Knobloch and Satterlee (2009), these propositions are (a) relational uncertainty escalates the severity of the face threats individuals experience when communicating with a partner, (b) relational uncertainty increases the difficulty of planning messages, (c) relational uncertainty leads individuals to avoid communicating directly about sensitive issues, (d) relational uncertainty diminishes people’s ability to draw accurate conclusions from their partner’s messages, (e) relational uncertainty shakes people’s confidence in their ability to communicate with their partner, and (f) relational uncertainty prompts individuals to view their partner and their relationship more negatively.

**Relational Uncertainty during the Empty-Nest Transition**

The empty-nest transition may be filled with relational uncertainty as the couple renegotiates their individual roles and the relationship itself. Recall that the relational turbulence model has evolved to consider turbulence during relationship transitions beyond courtship (e.g., Knobloch & Theiss, in press; Steuber & Solomon, 2008; Weber & Solomon, 2008). Given that relational uncertainty is likely to accompany the adoption
of new roles and the transition to a new life situation, the transition to the empty-nest may produce heightened relational uncertainty for spouses. Thus, the empty-nest transition is one stage in a relationship that has the potential for increased relational uncertainty.

People may experience self uncertainty during the empty-nest transition for a variety of reasons. For example, now that the children have left the home, a husband might question if he is completely fulfilled by his wife. Now that there is no commitment pressure to stay together “for the kids” (Downs, 2003), a wife might doubt whether or not she really wants to stay in this relationship. As spouses face the opportunity to return to their primary roles as husband and wife, they might be uncertain about whether or not they want to do the same kinds of things they used to do in that role. As partners negotiate this transition to the empty-nest, they might experience self uncertainty resulting from doubts about their own desire to be in the relationship and their ability to fulfill their former spousal roles.

People may also experience partner uncertainty during the transition to the empty-nest. Now that a wife can focus more on her marriage than on her children, she might wonder if her husband has been completely faithful to her over the years. A husband who has put on weight in his older years might worry that his wife is no longer physically attracted to him. Spouses might question whether or not their partner still wants to be in the marriage now that their commitment to raising children has ended. These examples highlight how partner uncertainty is also relevant during the transition to the empty-nest.

Finally, relationship uncertainty may also be salient during the empty-nest transition. Spouses might be unsure how to behave around each other now that the children are gone. A husband or wife might wonder if it is appropriate to request more
sexual contact now that the couple is alone more often. A wife might question how to go about asking her husband to perform household chores formerly done by the children without seeming like a nag. Collectively, spouses might wonder where their relationship is headed and what it will be like now that the children have left the home. Thus, the empty-nest transition is ripe for all three sources of relational uncertainty and any number of other doubts and ambiguities about the relationship. I pose the following research question to identify sources of uncertainty for couples during the empty-nest transition:

RQ2: What issues of relational uncertainty, if any, do couples report during the transition to the empty-nest phase of marriage?

**Partner Interference**

The second mechanism in the relational turbulence model is interference from partners (Solomon & Knobloch, 2001, 2004; Solomon & Theiss, 2008). *Interference from partners* refers to the degree to which an individual perceives a partner as undermining personal actions. In developing relationships, partner interference manifests in situations when one person’s routine is interrupted by efforts to coordinate actions with a relational partner (Berscheid, 1983).

According to Berscheid (1983), a partner’s interference emerges during the process of establishing interdependence between partners in close relationships. As relationship partners become more interdependent, each partner’s activities become contingent on the other’s participation. When partners begin to incorporate one another into their personal routines, they allow one another to have influence in their daily life. A partner’s influence can either facilitate one’s goals or interfere with one’s goals. Early in a developing romantic relationship, few opportunities for interference exist because
partners lead relatively separate lives, so opportunities for influence are rare (e.g., on a daily basis the partners live in separate residences, eat their meals independently, watch whatever they like on television, and choose when they want to work or go to the gym). As the relationship becomes more intimate, the partners start to have more influence in one another’s lives (e.g., partners might spend the night or move in together, they eat more meals together, they must choose what to watch on television together, and they might look for ways to mesh their routines). At first, efforts to coordinate individual routines can be disruptive because partners have to relinquish some independence in order to be inclusive of their partner’s wants and needs. Disruptions to an individual’s routine are perceived as interference from partners (e.g., one partner leaves dirty dishes in the sink when spending the night, leaving more for the other to clean than usual; one partner is a picky eater, which limits what kind of food they can have for dinner; one partner likes to watch sports, while the other prefers comedies; one partner exercises in the morning and the other works out at night). With time and practice, the couple establishes patterns of behavior that help to facilitate one another’s goals rather than interfering with them (e.g., partners do the dishes together after every meal; partners take turns making meals they each enjoy; partners record sitcoms on the DVR so they can watch sporting events live; partners meet over their lunch hour at the gym so that they can spend more time together in the morning and at night).

Although the original focus of the relational turbulence model was on partner interference during courtship, suggesting that interference should be replaced by facilitation at high levels of intimacy, empirical evidence suggests that interference may be a prominent feature in relationships beyond courtship. Solomon & Theiss (2008)
found that interference remains constant across high levels of intimacy, suggesting a partner’s interference is still likely to spark heightened reactivity, even in marriage and strongly committed couples. Moreover, because married partners’ lives are almost completely intertwined, there are potentially more opportunities for partner interference than in less established relationships. Although it is likely that couples resolve some of their interference throughout the course of a relationship, or learn to live with the disruptions caused by a partner, the partners are likely to be consistently frustrated by differences in the way tasks are coordinated, especially as new situations arise that require renegotiating roles and behaviors. This stems naturally from the idea that for years these couples had an established routine that worked for them and now that the children are gone new routines need to be negotiated, which creates opportunities for partners to get in each other’s way. Thus, even in marriage, there are opportunities for individuals to experience interference from a spouse.

As was the case for relational uncertainty, interference from partners also contributes to polarized emotional, cognitive, and behavioral reactions to relationship events. Berscheid’s (1983) Emotion-in-Relationships Model specifically argued that interference from partners triggers intense emotional reactivity. For example, prior research indicates interference from partners is positively associated with negative emotions such as anger, sadness, and fear (Knobloch, 2008; Knobloch et al., 2007; Knobloch & Theiss, 2010). Furthermore, previous research suggests there is a positive association between interference from partners and emotional jealousy (Theiss & Solomon, 2006a), as well as hurt (Theiss et al., 2009). Married partners also report more negative emotional reactions to sexual intimacy when interference from partners is
heightened (Theiss & Nagy, 2010). Thus, emotions are likely to be more intense when interference from partners is heightened.

With regard to cognitive reactivity, empirical evidence suggests that partner interference corresponds with appraisals of relational irritations as more severe and relationally threatening (Solomon & Knobloch, 2004; Theiss & Knobloch, 2009; Theiss & Solomon, 2006b). People tend to report increased suspicion over third party rivals (Theiss & Solomon, 2006b) and perceptions that social networks are unsupportive of the relationship (Knobloch & Donovan-Kicken, 2006) under conditions of partner interference. Romantic partners also perceive more turmoil in the relationship when partner interference is heightened (Knobloch, 2007; Knobloch & Theiss, 2010). Interference from partners is also associated with appraisals of hurtful messages as more intentional and damaging to the relationship (Theiss et al., 2009). Married partners who are experiencing interference from partners also report less sexual satisfaction (Theiss & Nagy, 2010). More recent research examined post-deployment military couples and found perceptions of turmoil and less relational satisfaction to be byproducts of interference from partners (Knobloch & Theiss, 2011).

Interference from partners also corresponds with more polarized communicative reactions to relationship events. For example, increased interference from partners is associated with less direct communication between relational partners about irritations and jealousy (Theiss & Solomon, 2006a; 2006b). Heightened interference from partners corresponds partners use of fewer dyadic pronouns, indicating a lesser feeling of interdependence with their partner (Knobloch & Solomon, 2003). Conversations about stressors among breast cancer patients are more negative when interference from partners
is perceived by the patient (Weber & Solomon, 2009), and when women who are coping with infertility perceive their husband’s behaviors as interfering, women are more likely to disapprove of their husbands’ communication regarding their infertility to outside sources (Steuber & Solomon, 2011).

**Interference from Partners during the Empty-Nest Transition**

Recall from the previous chapter that during the transition to the empty-nest stage a couple is likely to encounter a variety of changes in their relationship. No longer are there children at home to assist with household chores and no longer are children the main focus for the parents. When the children are gone, empty-nesters are left with one another as round-the-clock companionship, which may in turn result in more opportunities to get in each other’s way. Further, the shifting of roles from parent to partner may be accompanied by more disruptions in daily routines within the marriage, because routines involving the children are no longer necessary. Thus, as married partners negotiate the empty-nest transition, there are frequent opportunities for partner interference since the norms and routines that were in place when the children were at home may no longer be necessary for the couple and their lives are completely focused on one another.

Take for example the case of Rob and Sally. Sally expected to spend more quality time with Rob once their children left for college, whereas Rob was looking forward to spending some quality time on the links playing golf with his retired friends. One Saturday morning, Sally makes reservations for the couple to go out for brunch, only to find a note from Rob that he would be back late in the afternoon once he was done playing golf with his friends. Sally tries to contact Rob on his cell phone to come home
from golf and join her for brunch. Rob leaves the golf course to meet with Sally, but the couple shows up too late for brunch, and misses their reservation. Rob is dissatisfied because he did not have the opportunity to play golf with his friends, and Sally is irritated that they missed Saturday morning brunch. Overtime the couple will develop coordinated patterns of interaction; however, this coordination takes time and practice for the couple to renegotiate patterns in their relationship. In other words, they are in the process of figuring out the best way to work together and coordinate routines now that their old patterns of behavior are no longer adaptive to their situation. As the couple negotiates this new transition, they must make a renewed effort to coordinate their patterns of action. Until they are able to establish a new routine that works, interference is likely to be a source of tension in the relationship. To probe the various sources of interference from partners during the empty-nest transition, I pose the following research question:

RQ3: What issues of partner interference, if any, do couples experience during the transition to the empty-nest phase of marriage?

Conclusion

The relational turbulence model has been researched in a variety of contexts exploring the emotional, cognitive, and communicative reactions in relationships. The main mechanisms of the relational turbulence model, relational uncertainty and interference from partners, provide the theoretical basis needed to explore the transition to the empty-nest phase of marital relationships. The next chapter will present the research hypotheses and detail the addition of physiological outcomes of relational uncertainty and interference from partners that may arise in conflict interactions for empty-nest couples.
Chapter 3

Cortisol and Conflict

Psychological stress occurs when people feel the demands placed upon them are beyond their control, and leads to negative emotional and cognitive states (Folkman, 1997; Lazarus & Folkman, 1984). Psychological stress leads to physiological manifestation of stress, for instance increases in state anxiety, increased cortisol levels, and increased heart rate, perspiration, and systolic and diastolic blood pressure (Lazarus & Folkman, 1984; Lupien et al. 2005). A number of relationship events can evoke stress. For example, conflict in close personal relationships creates physiological stress at the time of conflict-inducing events (e.g., Kiecolt-Glaser & Newton, 2001). Caregiving for a spouse with an illness (Carter & Carter, 1994), managing a spouse’s job loss (Vinokur, Price, & Caplan, 1996), and coordinating routines when a spouse deploys or returns from military service (Lester et al., 2011) are all stressful events for individuals in relationships. Moreover, stress that is not adequately managed and lingers in the relationship can lead to prolonged chronic physiological stress affecting both mental and physical health outcomes (DeLongis, Folkman, & Lazarus, 1988; Robles & Kiecolt-Glaser, 2003), higher overall stress (Young, Abelson, & Cameron, 2004), and slower recovery from stressful events (Condren et al., 2002). Mismanaged or lingering stress can also have negative relational outcomes such as marital quality, stability, and overall well-being of family members (Karney & Bradbury, 1995).

How relational partners manage stress can have positive or negative effects on the relationship. For instance, the stress/social support hypothesis, suggests stress and
social support influence health in numerous ways (Burman & Margolin, 1992). Burman and Margolin (1992) present a conceptual framework linking marital functioning, biological systems, and physical health in couples. The research suggests that with marriage and marital transitions comes stress, and that these marital transitions place spouses at risk for psychological disorders (Hetherington, 1989; Kitson & Morgan, 1990), disruptions in immune system functioning (Kiecolt-Glaser et al., 1996), and increased rate of illness and morbidity (Burman & Margolin, 1992; Hu & Goldman, 1990). Coping strategies are often used by couples as a mechanism to manage stress and the physiological reactivity and recovery from stress (Gunlicks-Stoessel & Powers, 2009; Kirschbaum et al., 1995), and when performed effectively may help the couple to maintain a healthy relationship.

This chapter will explore how stress, communication, and conflict are interrelated within a romantic relationship. As a starting point, I describe how cortisol acts as a physiological harbinger of stress. Then, I draw on the relational turbulence model to identify relationship characteristics that may be associated with chronic markers of stress, both physiological and self-report. I also describe how the mechanisms in the relational turbulence model predict various message features during conflict conversations. Finally, I explore the ways in which general relationship qualities and specific message features during conflict may contribute to increased cortisol following interaction.

**The Case of Cortisol**

Cortisol is a stress hormone that is produced in response to perceived harm or threat to an individual or relationship. The body’s response to environmental stress (whether that stress be physical or psychological) consists of three physiological
breakdowns: the sympathetic nervous system, the hypothalamic pituitary adrenal axis (HPA system), and the immune system (Selye, 1956). Acute stressors, such as having a fight with a loved one, getting in a car accident, or being told bad news can result in the temporary increase of cortisol in an individual. Chronic stress, such as managing illness, relationship strains, or financial worries can result in elevated baseline measures of cortisol and prolonged health issues (Johnson, Kamilaris, Chrousos, & Gold, 1992). Both acute and chronic stress can result in elevated cortisol levels and can have emotional, cognitive, behavioral, and physiological manifestations.

How an individual manages the “fight or flight” reaction to stress originates in the biological reaction called stress response (Sapolsky, 1998). Perception of threat is met by an automatic release of cortisol and other hormones into the bloodstream, which allows the body to deal with the stressor by breaking down fats into fatty acids, increasing production of sugar to decompose proteins, and increasing glucose levels the body can use as energy (Chrousos & Gold, 1992). This process is regulated by cortisol, which helps to control where energy goes. For example, the body’s metabolic energy is diverted from nonessential systems in times of stress (for example, the reproductive system) to more essential functions such as increased oxygen in the blood stream and increased heart rate and blood pressure (Sapolsky, 1998). Once the stressor is over, cortisol is responsible for the negative feedback regulation of the HPA system, resulting in the reduction of cortisol levels; however, the timing of this process is dependent upon the magnitude of an individual’s stress response (Dickerson & Kemeny, 2004).

Cortisol as a stress hormone has recently emerged as a variable in communication research to determine the role of biological markers in close relationships. Specifically,
cortisol has been examined in couples’ affection exchanges (Floyd, 2006), which revealed that expressed affection is positively associated with waking cortisol levels, as well as the diurnal patterns related to the adaptive ability to handle stress. In addition, Floyd and Riforgiate (2008) found verbal and nonverbal affectionate responses to significantly affect cortisol levels upon waking, in the evening, and in cortisol change, indicating increases in affectionate behavior and communication in romantic relationships reduces physiological stress experienced by individuals. Floyd and colleagues (2007) also found affectionate communication in the form of cathartic writing expressing emotions and feelings to a loved one to be associated with accelerated cortisol recovery subsequent to laboratory stressors.

Although Floyd and colleagues’ research focuses primarily on the role of affectionate behavior on reducing cortisol, other researchers have focused on the catalysts that increase cortisol. For example, dating couples who had not previously discussed the potential for marriage with their partner experienced increased cortisol upon having this conversation for the first time, whereas those who had discussed marriage in the past did not experience elevated cortisol (Loving, Gleason, & Pope, 2009). The experience of self-reported hurt from a partner has also been positively related to increases in physiological stress and predicts the intensity of cortisol increase (Priem, McLaren, & Solomon, 2010). Pettit and Joiner (2006) found that chronically depressed individuals and their partners experience more physiological stress in their interpersonal relationships. Research also indicates that negative parent-child interactions lead to elevated cortisol levels in young children, which can contribute to negative child development and functioning (Smeekens, Riksen-Walraven, & van Bakel, 2007).
The impact of stress on individual health has been well documented. Stress and marital strain can increase the risk for cardiovascular disease (Coyne et al., 2001; Matthews & Gump, 2002; Ortho-Gomer et al., 2000), atherosclerosis (Gallo et al., 2003), and hypertensive complications (Baker et al., 2000). Stress can lead to increases in blood pressure and heart rate, which specifically can lead to the previously mentioned health outcomes (Kop, 1999; Treiber et al., 2003). Stress is also associated with changes in endocrine functioning, which can impact the immune system (Ader et al. 1991; Malarkey et al., 1994). Additionally, individuals who have elevated cortisol levels due to chronic stress are prone to the development of disease (Cohen & Rodriguez., 1995). Individuals with more extensive and satisfying social networks (Berkman, 1995; Uchino, 2004), who practice higher levels of social support, reduce these physiological responses to stress (Kamarck et al., 1998; Uchino et al., 1996). Therefore, the effective management of stress in marriage could reduce potentially deadly physiological effects of stress (Cohen et al., 1994; Nealey-Moore et al., 2007), whereas the unsuccessful management of stress in marriage could increase the likelihood of negative health consequences (Robles & Keicolt-Glaser, 2003; Smith et al., 2003).

**Relationship Characteristics that Predict Elevated Trait Cortisol**

As discussed in the previous chapter, this dissertation draws on the relational turbulence model as a theoretical foundation for theorizing about the empty-nest experience. The first goal of this study, then, is to explore the associations between the mechanisms in the relational turbulence model and various markers of stress. Recall that the relational turbulence model predicts that heightened relational uncertainty and interference from partners corresponds with increased emotional, cognitive, and
behavioral reactivity to relational episodes. This research expands the relational turbulence model to consider physiological manifestations of turbulence during the transition to the empty-nest phase of marriage.

Recall from the previous chapter that relational uncertainty predicts a variety of outcomes in relationships. Relational uncertainty has been associated with emotional reactions in relationships, such as jealousy (Afifi & Reicher, 1996; Knobloch, Solomon, & Cruz, 2001); cognitive reactions, such as more severe appraisals of irritations (Solomon & Knobloch, 2004; Theiss & Solomon, 2006b); and behavioral reactions, such as directness of relational communication (Baxter & Wilmot, 1985; Theiss & Solomon, 2006a, 2006b). In addition, recent findings confirm a mediated link between depressive symptoms and relationship quality by actor effects of relational uncertainty in women and self uncertainty in men (Knobloch & Knobloch-Fedders, 2010). Given that relational uncertainty contributes to more emotional, cognitive, and behavioral reactivity, heightened relational uncertainty should evoke stress, especially if ambivalence about the relationship is prolonged. Given the far-reaching emotional, cognitive, and behavioral implications of relational uncertainty, it follows that physiological stress, may arise as an outcome of increased relational uncertainty. Thus,

H1: Self, partner, and relationship uncertainty are positively associated with heightened baseline levels of cortisol.

Recall also that interference from partners gives rise to polarized emotional, cognitive, and behavioral reactions to relationship circumstances. Increased partner interference is positively associated with negative emotion, for instance anger, sadness, fear, and jealousy (Knobloch et al., 2007; Theiss & Solomon, 2006a). Partner
interference is also associated with appraisals of irritations as more severe (Theiss & Solomon, 2006b). Interference from partners is also associated with behavioral reactivity in the form of more direct confrontations about jealousy (Theiss & Solomon, 2006b) and irritating circumstances (Theiss & Solomon, 2006a). Relational partners also evaluate conversations about the sources of distress more negatively when faced with goal interference from their partners (Weber & Solomon, 2007; 2008). These patterns of increased emotional, cognitive, and behavioral reactivity suggest that goal interference from a partner may contribute to the stress experienced by spouses as they transition to the empty-nest phase of their relationship. Interference from partners makes it difficult to achieve personal goals, enact routines, and establish relationships and personal identities, which can often be frustrating and stressful for individuals in relationships. Thus, elevated cortisol should emerge as a physiological manifestation of stress associated with interference from partners. Accordingly, I advance the following hypothesis:

H2: Interference from partners is positively associated with heightened baseline levels of cortisol.

Although previous research suggests physiological markers of stress can be observed in elevated cortisol levels, other findings suggest these tests can be unreliable. For instance, employment stressors such as amount of work load can disrupt the typical circadian rhythm demonstrated by cortisol throughout the day (Caplan, Cobb, & French, 1979). A number of factors can also lead to unreliable results obtained from cortisol analyses, such as if the participants have recently consumed food or caffeine, the time of day, the individual’s general level of cortisol, and researcher error (Pollard, 1995). To circumvent this potential problem with the data, two self-reported variables were also
included as indicators of stress that may be influenced by relational uncertainty and interference from partners: self-reported stress and perceptions of turmoil.

A self-report measure of stress was included to corroborate the physiological data. Previous research has linked uncertainties such as dealing with job loss (Eby & Buch, 1994), caring for an aging partner (Mossello et al., 2008), and managing a partner’s postpartum reactions (Zelkowitz & Milet, 1997) with increased psychological stress. This research suggests relational uncertainties associated with a couple’s transition to the empty-nest stage of their relationship may give rise to perceived stress. Additionally, enhanced leisure (Trenberth & Dewe, 2005) and perceived quality of life factors including physical health, psychological wellbeing, social relationships, and environmental conditions (Rusli, Edimansyah, & Lin, 2008) have been found to reduce or help cope with stress. As couples negotiate their relationship as empty-nesters leisure and daily activities are likely to change in terms of frequency and/or type of activity. The perceived threat of a partner interfering with one’s daily routines may result in enhanced rumination about the relationship which may in turn result in enhanced cognitive and self-perceived stress for an individual. This renegotiation of time and activity with or without one’s partner may result in elevated stress for individuals in relationships. Thus, I advance the following hypotheses:

H3: Self, partner, and relationship uncertainty are positively associated with an individual’s perceived stress.

H4: Interference from partners is positively associated with an individual’s perceived stress.
A second variable that may be sensitive to the mechanisms in the relational turbulence model is the level of perceived turmoil in a relationship. *Turmoil* refers to people’s appraisals of how tumultuous and stressful their relationship is and serves as a cognitive marker of turbulence (Knobloch, 2007). Several tests of the relational turbulence model have linked relational uncertainty and interference from partners with increased perceptions of turmoil in relationships (Knobloch, 2007; Knobloch & Theiss, 2010). The changes that spouses undergo as they negotiate the transition to the empty-nest phase of marriage are likely to generate upheaval in the relationship. Given the previous research linking relational uncertainty and partner interference with turmoil in relationships, and the tumultuous nature of the empty-nest transition, the following hypotheses are proposed:

H5: Self, partner, and relationship uncertainty are positively associated with perceived turmoil in an empty-nest relationship.

H6: Interference from partners is positively associated with perceived turmoil in an empty-nest relationship.

**Communication and Conflict**

The second goal of this study is to examine how message features during conflict interaction may be shaped by the relationship characteristics outlined in the relational turbulence model. Conflict is a naturally occurring event in all close relationships, but it can manifest in varying degrees of severity and may present a diversity of challenges for romantic partners (e.g., Creasey, 2002; Fincham, Bradbury, & Grych, 1990; Roloff & Ifert, 2000). How couples choose to manage conflict in their relationship is associated with individuals’ perceptions of satisfaction within the relationship (Llyod, 1987, 1990;
Rands, Levinger, & Mellinger, 1981). One body of research suggests frequent conflict in relationships corresponds with lower relational satisfaction (Llyod, 1987, 1990; McGonagle et al., 1993). Another perspective suggests the effective management of conflict in a relationship can actually help to increase the perceived satisfaction in a relationship (Roloff & Ifert, 2000). The communication strategies used to manage conflict can also affect partner perceptions of satisfaction. For example, ignoring or avoiding conflict can sometimes bring individuals greater satisfaction in their relationships (Rands, Levinger, & Mellinger, 1981; Sillers et al., 1983). In contrast, conflict management strategies such as “the silent treatment” and “stonewalling” are negatively associated with relational commitment (Wright & Roloff, 2009).

Romantic partners manage conflict in a variety of ways and use a handful of coping strategies to do so (Compas et al., 2001; Gunlicks-Stoessel & Powers, 2009; Skinner et al., 2003). For example, active coping includes attempts to actively address and modify the problem through techniques such as problem solving, planning, instrumental action, emotional processing, and emotional expression; support seeking involves seeking instrumental and emotional support from partners and social networks; distraction includes engaging in pleasurable activities to take one’s mind off of the conflict to reduce conflict stress; and disengagement involves attempts to evade the conflict stressor and associated emotions through techniques such as avoidance, withdrawal, and denial (Compas et al., 2001; Gunlicks-Stoessel & Powers, 2009; Skinner et al., 2003). The coping strategy selected is dependent on the personality traits of the individual and the topic that is being managed by the partners.
One factor that may affect how individuals in relationships manage conflict may be the perception of relationship seriousness. Perceptions of relationship seriousness have been associated with less hostility and anger perceived by relational partners (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007), and when females experience more mindfulness in a relationship, their male partners experience less hostility and anger post conflict (Barnes et al., 2007). Barnes and colleagues (2007) examined mindfulness in a longitudinal study and found higher trait mindfulness, or the awareness of demonstrated traits in interaction, predicted higher relationship satisfaction, lower emotional stress, and an easier ability to respond constructively to stress. Moreover, when females experienced more mindfulness in a relationship, their male partners experienced less hostility and anger post-conflict. Whereas trait mindfulness showed positive benefits for individuals post conflict, the researchers found baseline anxiety, hostility, and anger prior to conflict interactions to be predictors of post-conflict relational stress (Barnes et al., 2007).

**Relationship Characteristics that Predict Features of Conflict Communication**

Prior research has highlighted a variety of relationship characteristics that can influence communication between individuals. For instance, relationship satisfaction is associated with fewer negative communicative strategies during conflict interactions (Alberts & Driscoll, 1992; Miller & Bradbury, 1995). In addition, lacking commitment in a relationship corresponds with conversational avoidance (Baxter & Wilmot, 1985) and more indirect communication (Knobloch & Solomon, 2002a). Drawing on the logic of the relational turbulence model, I identify relational uncertainty and interference from partners as two relationship characteristics that may influence message features during conflict conversations.
Relational Uncertainty and Conflict Behavior

Recall from the previous chapter that relational uncertainty consists of self, partner, and relationship uncertainty and refers to a person’s degree of confidence he or she has in a relationship (Berger & Bradac, 1982; Knobloch & Solomon, 1999; 2002a). The presence of relational uncertainty impedes individuals’ ability to communicate effectively (see Knobloch & Satterlee, 2009 for a complete review). For instance, relational uncertainty may increase the potential for face threats (Knobloch & Satterlee, 2009), or when an individual’s image is contested or challenged (Brown & Levinsen, 1987). Face threats may result in damage to an individual’s image, a partner’s image, or the relationship itself (Knobloch & Carpenter-Theune, 2004; Knobloch, Satterlee, & DiDomenico, 2009), or may alter the status or perception of the relationship (Afifi & Burgoon, 1998). Relational uncertainty may also impede planning messages with a relational partner (Berger, 1995; Knobloch, 2006) and processing messages (Berger & Bradac, 1982; Knobloch & Solomon, 1999; 2002a). Relational uncertainty is also associated with increased negativity in relational messages (Knobloch 2007a; 2008), and decreased participant confidence in communicative ability (e.g., Knobloch, 2006; Murray, Holmes, MacDonald, & Ellsworth, 1998). Notably, topic avoidance (Knobloch & Carpenter-Theune, 2004) and indirectness (Knobloch, 2006; Theiss & Solomon, 2006a; 2006b) are among the few communicative outcomes of relational uncertainty explored by the relational turbulence model to date. To extend the model, I intend to investigate these and other message features that may be vulnerable to relational uncertainty.
Partner Interference and Conflict Behavior

Recall also from the previous chapter that interference from partners arises as individuals negotiate interdependence and it contributes to a variety of emotional and cognitive reactions to relationship events (Solomon & Knobloch, 2004). For instance, interference from partners is associated with a wide variety of emotional outcomes, such as anger, sadness, fear, and jealousy (Knobloch, 2008a; Knobloch et al., 2007). Other research documents the cognitive reactions individuals experience in the face of interference from partners including appraisals of irritations and increased jealousy (Theiss & Solomon, 2006a; 2006b). Relatively fewer studies have explored interference from partners and its associations with communicative outcomes. Less direct communication between relational partners (Theiss & Solomon, 2006a; 2006b), uncoordinated conversation and speech errors (Knobloch & Schmelzer, 2008), and less affiliative messages (Knobloch, 2008b) illustrate some communicative outcomes, but the empirical research is still nominal. Given the nature of interference from a partner, and the potential behavioral outcomes that might ensue from a relational partner’s interference of daily activities, it follows that communication patterns should be significantly affected. For this reason, in this study I extend the relational turbulence model to consider other important communication variables that may be affected by interference from a partner.

Message Features During Conflict Interaction

One goal of this research is to identify features of conflict interaction that are shaped by relational uncertainty and interference from partners. Specifically, topic avoidance, indirectness, criticism, demandingness, and withdrawal were explored as
features of conflict interaction that may reflect underlying characteristics of the relationship. In this section, I explicate each of the message features that were analyzed in this study and advance hypotheses linking them with the mechanisms in the relational turbulence model.

**Topic Avoidance**

Topic avoidance is the strategic decision not to disclose information on a particular issue (Afifi & Guerrero, 2000). Individuals will actively avoid *taboo topics*, or topics labeled as off-limits for discussion (Baxter & Wilmot, 1985), oftentimes as a strategy for relationship maintenance (Caughlin & Golish, 2002; Daily & Polamares, 2004). Topic avoidance is a pertinent relational issue for close relationships and has been reported in parent-child relationships, (Guerrero & Afifi, 1995a), cross-sex friendships (Afifi & Burgoon, 1998), and stepfamilies (Golish & Caughlin, 2002). By enacting topic avoidance individuals in relationships are making the active decision not to discuss certain issues with a partner, which may enhance the relationship (Roloff & Ifert, 2000) and protect social bonds (Afifi & Guerrero, 2000), or hinder relationship development and closeness (Donovan-Kicken & Caughlin, 2011).

Research has identified certain motivations that promote topic avoidance. Self-protection, or the act of saving face in a relationship, can prevent feelings of vulnerability or potential embarrassment (Afifi & Guererro, 2000; Guerrero & Afifi, 1995). People also engage in topic avoidance to protect their partner, especially when concerned about a partner’s response (Baxter & Wilmot, 1985) or about a lack of reaction from an unresponsive partner (Afifi & Guerrero, 2000; Guerrero & Afifi, 1995). Partners may
also avoid relationship-threatening topics as a way to protect the relationship or avoid conflict (Golish & Caughlin, 2002; Roloff & Ifert, 2000).

Prior research has consistently linked relational uncertainty with topic avoidance (e.g., Knobloch & Carpenter-Theune, 2004; Knobloch & Theiss, 2011; Theiss & Estlein, under review). Relational uncertainty, specifically partner uncertainty and relationship uncertainty, make it difficult to predict the outcomes of conversation and cause concern about losing the partner of the relationship. To date, there are no empirical findings linking interference from partners to topic avoidance. Recent research has begun to explore these connections. For instance, Theiss and Estlein (under review) predicted a mediated association between partner interference and sexual topic avoidance. Theiss and Nagy (under review) also explored the associations between interference from partners and topic avoidance in a cross-cultural study, although a significant association could not be identified. Although there is no empirical evidence to support interference from partners as a predictor of topic avoidance, there is theoretical support. According to the relational turbulence model, if a partner is interfering, a spouse might avoid certain topics because they represent another aspect of one’s life that cannot be easily coordinated with one’s partner. Certain topics may provide another opportunity for interference, and therefore avoiding those topics to avoid interference may be a conflict management tool for individuals. Following this logic, I advance the following hypotheses:

H7: Self, partner, and relationship uncertainty are positively associated with topic avoidance during conflict interactions.

H8: Interference from partners is positively associated with topic avoidance during conflict interactions.
Indirectness

Indirectness has been nominated as a reaction to harm or hurt from a partner and is characterized as either an acquiescent response (crying or apologizing) or invulnerable response (silence or ignoring the message) (Vangelisti & Crumley, 1998). Indirectness, or the physical and psychological evasion of the attacker represents an action or reaction an individual can exhibit in response to hurtful conversations (Bachman & Guererro, 2006; Fincham, 2000). Individuals may be fully engaged in a conversation, but not be direct in the way that they address certain issues.

Studies have found a positive connection between relational uncertainty and indirect communication behaviors. More specifically, tests of the relational turbulence model have linked relational uncertainty with indirect communication about irritations (Theiss & Solomon, 2006b), jealousy (Theiss & Solomon, 2006b), and sexual intimacy (Theiss, 2011); although, self uncertainty is sometimes associated with more directness, depending on the context. Previous research reveals that people will engage in indirect conversations about their relationship if there is doubt about the mutuality of the commitment to the relationship (Baxter & Wilmot, 1985), and that people will guard private information to prevent harm to the relationship (Afifi & Guerrero, 2000; Rosenfeld, 1979) or their partner (Vangelisti, Caughlin, & Timmerman, 2001). Empty-nest conflicts should be more indirect if spouses are questioning the relationship or have ambiguity surrounding involvement in the relationship of either the spouse’s or one’s own involvement in the relationship.

Interference from partners has also been found to correspond to more indirect communication about relationship events (Theiss & Solomon, 2006a; 2006b). Generally,
interference from a partner contributes to more heightened emotional states and increased reactivity to relationship events (Berscheid, 1983). Previous research indicates that as interference from a partner is increasingly present, individual perceptions of relationship problems are perceived as more negative (Solomon & Knobloch 2004). For empty-nest couples experiencing interference from their spouse it follows that there should be heightened emotional states and reactivity to relationship events. Empty-nest conflict should be more indirect if spouses are having difficulty coordinating daily routines or goals since the children have left the home. Thus, I propose the following two hypotheses:

H9: Self, partner, and relationship uncertainty are positively associated with communicative indirectness during conflict interactions.

H10: Interference from partners is positively associated with communicative indirectness during conflict interactions.

**Criticism**

Criticism is defined as complaining and blaming, or making extreme characterizations of a partner’s behavior, such as “You never” or “You always” (Gottman, 1994). In close relationships criticism emerges due to a variety of factors including unmet expectations (Afifi & Metts, 1998), rule violations (Baxter, 1986) or relational transgressions (Metts, 1994; Roloff & Cloven, 1994). Criticism is also identified as one of the features of conflict interaction that is predictive of later divorce (Gottman, 1994).

Criticism serves a variety of roles in close relationships. For instance, criticism is used to solicit behavioral compliance (Kowalski, 2003) and hold partners accountable for
their behaviors (Alberts, 1988; Kowalski, 1996) in close relationships. Criticism can also be used as a conversational tool to get revenge or to punish a partner (Stamp, Vangelisti, & Daly, 1992). More generally, criticism serves as an expressive function to make a partner aware of grievances (Kowalski, 1996). Criticism can also be influential in demand-withdraw interactions (Caughlin & Ramey, 2005), which are associated with relational dissatisfaction and dissolution (Caughlin & Huston, 2002; Gottman & Levinson, 2000).

Although previous research fails to highlight a connection between criticism and relational uncertainty or partner interference, the literature does suggest it to be a dysfunctional attribute of martial discourse for both husbands and wives (Gottman & Levinson, 1999). As ambiguity surrounds the romantic relationship or continued involvement in the relationship surface, negative rumination may occur. This *mulling* (Cloven & Roloff, 1995), or continued pattern of obsessive thinking, may enhance critical communication towards a partner. Moreover, if relational uncertainty generally makes it difficult to establish an effective plan for interaction, we might see people resorting to criticism because they are not sure how to behave more appropriately. In addition, as interference from a partner emerges, how one manages these intrusions may be initially critical, or if the pattern continues may result in aggravated communication. If a partner is perceived as interfering with a spouse’s goals and routines, the frustrations felt over the disruption might make the spouse more critical of their partner’s behavior. Therefore, the following hypotheses are proposed:

**H11:** Self, partner, and relationship uncertainty are positively associated with criticism during conflict interactions.
H12: Interference from partners is positively associated with criticism during conflict interactions.

Demandingness/Withdrawal

The Demand/Withdraw communication pattern (Chistensen, 1987) has been identified by researchers as a predominantly dysfunctional communication pattern (Caughlin & Huston, 2002; Denten et al., 2001). The pattern involves one partner pressing another for a request or demand, and the other partner retreating or withdrawing from the interaction. Demanding behaviors can include communication behaviors that assign blame or make threats targeted at a relationship partner (Caughlin & Huston, 2002). Wives usually enact more demands than husbands (Caughlin & Vangelisti, 1999; Gottmann & Levenson, 1988). The demands that are voiced by one partner are often followed by the other partner’s withdrawal from the interaction (Caughlin & Ramey, 2005). Though the demand/withdraw pattern is known to be negative for relationships, contributing to dissatisfaction and divorce (Caughlin & Huston, 2002; Heavey et al., 1995; Noller et al., 1994), the pattern is difficult for many couples to change (Jacobson et al., 1986).

Relational uncertainty should contribute to more intensified demand/withdraw patterns in empty-nest couples. Having ambiguity about the state of a relationship can increase one’s desire to reduce that ambiguity, possibly by making more demands on a relational partner. These demands may be in the form of behavioral requests, or communicative in nature. Relational uncertainty may also contribute to more withdraw in empty-nest relationships. For instance, if an individual is experiencing ambiguity about their relationship they might withdraw from demands or requests made by a partner as a
way to preserve the relationship. By withdrawing from a demanding partner, as opposed to responding in another more direct way, a spouse may be demonstrating concern for the relationship by trying to put conflict-provoking issues at bay. Alternatively, spouses who are experiencing relational uncertainty may withdraw from conflict interaction as an act of resistance. Following this logic, I propose the following hypotheses:

H13: Self, partner, and relationship uncertainty are positively associated with demandingness during conflict interactions.

H14: Self, partner, and relationship uncertainty are positively associated with withdrawal during conflict interactions.

Interference from partners may also predict demanding or withdrawing behaviors. People who are frustrated by a partner’s interference may make more demands in an effort to stop their partner’s disruptions in daily goals and routines. Demanding that a partner behave in a particular way is an unequivocal way of ensuring that he or she does not perform actions that are undesirable or uncoordinated. In contrast, coping with interference from a partner might prompt individuals to withdraw from conflict because past experience has shown that efforts to resolve conflicts and establish more coordinated actions are often thwarted by their partner’s interference. Particularly for couples at the empty-nest phase of marriage, withdrawal from conflict may be an indicator that after decades of trying to coordinate actions with their partner spouses are resigned to the fact that their partner is never going to change. When discussion seems futile, withdrawal may be the only option available to protect one’s self from the frustrations of an interfering partner. Following this logic, I propose two additional hypotheses:
H15: Interference from partners is positively associated with demandingness during conflict interactions.

H16: Interference from partners is positively associated with withdrawal during conflict interactions.

**Physiological Stress and Conflict**

The final goal of this study is to explore the ways in which relationship characteristics and message features correspond to increases in cortisol following conflict interaction. In previous laboratory testing, marital conflict has evoked a variety of physiological reactions. For example, Broadwell and Light (1999) found increases in blood pressure for both spouses when conflict was present in interactions. In contrast, spouses who perceived heightened social support during interaction experienced more cardiovascular benefits during interaction, especially for husbands (Broadwell & Light, 1999). Mayne and colleagues (1997) found conflict discussion to be associated with increases in depression, hostility, and blood pressure; although, these responses tended to be more dramatic for wives than husbands. Physiological reactions to conflict are predicted by both strained relationship characteristics and hostile behavior during conflict (Broadwell & Light, 1999; Heffner et al., 2006).

In this study, I examine both the spike in cortisol following stressful conflict interactions and the decay in cortisol over time as physiological markers of stress evoked by conflict. Cortisol spikes in response to stressful situations, giving the body the chemical momentum it needs to protect itself in real or perceived danger. After this initial spike, cortisol decays as the individual manages or resolves the stressful situation.
rate of cortisol decay should depend on the acute or chronic nature of stress and the level of perceived threat of the stressor.

**Relationship Characteristics Predicting Cortisol Spike and Decay**

Recall that relational uncertainty and interference from partners contribute to more intensified emotional, cognitive, and behavioral reactions in relationships (Solomon & Knobloch, 2004). A previously unexplored aspect of the relational turbulence model is whether the mechanisms in the model predict physiological reactivity to relationship circumstances. Earlier in this chapter, I predicted that relational uncertainty and interference from partners are positively associated with baseline cortisol levels as a marker of overall stress. In this section, I explore the potential association between the mechanisms in the relational turbulence model and the spike and decay of cortisol following conflict interaction.

Previous research indicates relational uncertainty is associated with distress in individuals (Knobloch & Knobloch-Fedders, 2010). An increase in relational ambiguity may cause an individual to feel unease about the status of the relationship. This cognitive rumination about the current state of affairs in the relationship may set the tone for increased volatility in a conflict interaction, which may lead to increased cortisol following the conversation. Conversely, because relational uncertainty may provide the impetus for more volatile conflict interactions, once the conversation ends spouses may still be holding on to the negative aspects of the communicative interaction. For instance, if a partner has ambiguity about the relationship, he or she may be extremely reactive to a conflict conversation, and may take a while to recover from that interaction, as well. Therefore,
H17: Self, partner, and relationship uncertainty are positively associated with a spike in cortisol following conflict interaction.

H18: Self, partner, and relationship uncertainty are negatively associated with the decay in cortisol following conflict interaction.

Interference from partners may also heighten stress in response to conflict. People who have chronic interference from a partner may be particularly stressed by conflict interaction, because it adds to the variety of disruptions that prevent coordinated actions in the relationship. Moreover, interference from partners might make it difficult for individuals to recover from a stressful encounter, because they are more likely to have continued rumination about the ways in which their partner continually thwarts efforts to establish interdependence and coordinate routines. Thus, I propose the following physiological reactions to conflict under conditions of partner interference:

H19: Interference from partners is positively associated with a spike in cortisol following conflict interaction.

H20: Interference from partners is negatively associated with the decay in cortisol following conflict interaction.

Message Features of Conflict Interaction Predicting Cortisol Spike and Decay

In addition to relationship characteristics, this study also examines features of conflict interaction as predictors of the spike and decay of cortisol. Studies have revealed a number of conversational features that are associated with physiological reactivity to interaction. For example, affectionate communication, such as displays of verbal affection, supportive affection, and nonverbal affection, are associated with decreased physiological responses to acute stressors (Flyod et al., 2007). Conversely, messages
characterized by hurt and relational devaluation correspond with an increased physiological response following interaction (Priem & Solomon, 2011). These studies suggest that the features of a conversation influence people’s physiological reaction to the event. Recent research also indicates that perceptions of demand/withdraw patterns in conflict interactions may influence stress and cortisol levels more significantly for women than for men (Heffner et al., 2006). How messages are constructed can also negatively affect parent-child relationships and child physiological reactions (cortisol), and prolonged negative interactions may inhibit developmental outcomes and functioning (Smeekens et al., 2007).

The message features that are the focus of this study should be associated with an increased spike in cortisol during conflict interaction and a slower decay in cortisol levels following conflict. Topic avoidance and indirectness are likely to contribute to an increased spike and a slower decay in cortisol, because individuals who engage in these behaviors fail to voice their complaints during interaction, which will prevent resolution and contribute to increased rumination about irritations that persist following the conflict. Similarly, people who withdraw in response to their partner’s demands do not have the opportunity to defend themselves from attack and are likely to experience stress as they ruminate about their partner’s aggression. Criticism and demandingness should contribute to more stress following conflict interaction because they are volatile communication behaviors that reflect underlying frustration, anger, aggression, and contempt, which are predominantly dysfunctional communication behaviors that contribute to stress and dissatisfaction. Thus, I propose the following hypotheses.
H21: The presence of topic avoidance, indirectness, criticism, demandingness, and withdrawal in a conflict interaction are associated with an increased spike in cortisol levels.

H22: The presence of topic avoidance, indirectness, criticism, demandingness, and withdrawal in a conflict interaction are associated with a decreased decay in cortisol levels.

**Summary**

There are three main sets of hypotheses in this study. First, *H1-H6* explore relational uncertainty and interference from partners as predictors of baseline cortisol, self-reported stress, and general turmoil in the empty-nest relationship. The second set of predictions examine relational uncertainty and interference from partners as predictors of message features in conflict interaction; specifically, topic avoidance (*H7; H8*), indirectness (*H9; H10*), criticism (*H11; H12*), demandingness (*H13; H15*), and withdrawal (*H14; H16*). The final set of predictions examines cortisol spike and decay following conflict interactions. First, relational uncertainty and interference from partners are predicted to have positive associations with cortisol spike (*H17; H19*) and negative associations with cortisol decay (*H18; H20*). The last two hypotheses examine message features of conflict communication and their associations to cortisol spike (*H21*) and cortisol decay (*H22*).
Chapter Four

Method

This study used the relational turbulence model to examine relationship characteristics that may make people more reactive to their interpersonal circumstances during the empty-nest phase of a marriage. This study extends the relational turbulence model to examine communicative and physiological manifestations of turbulence in empty-nest relationships. Thus, this dissertation expands the relational turbulence model to focus on previously overlooked manifestations of turbulence during under-researched transitions in marital relationships. All aspects of this study, including the pilot study, were approved by the Institutional Review Board at Rutgers, The State University of New Jersey (protocol #10-599M).

As a starting point, I conducted a pilot study in which I interviewed four empty-nest couples about their relationship experience during this transition. The empty-nesters had entered the empty-nest stage of marriage at varying ranges, from 1 year to 10 years prior to the interview. Participants were asked to sit down with the researcher and talk about their experiences as they transitioned to the empty-nest phase of their relationship, and how their relationship had changed since entering this new stage. The couples were asked a series of semi-structured, open-ended questions and all responses were voice recorded to be transcribed later. See Appendix A for a list of questions employed in the interview. The responses from the participants were used to identify measures for the larger portion of the study and to ensure the research was accurate and true to the transitional experiences of empty-nesters.
In the main study, three types of data were collected from married couples who were negotiating the transition to the empty-nest phase of their relationship. The first goal was to understand how relationship partners perceive their relationship during this transition, which was assessed by administering questionnaires about the relationship that measured variables such as relational uncertainty, partner interference, turmoil, stress, and conflict. The second goal was to examine how communication between the partners reflects underlying characteristics of the relationship, which was assessed by video-taping and coding interactions that occurs between the partners. The final goal was to explore physiological manifestations of relational turmoil by collecting salivary samples to measure levels of cortisol, which is an indicator of stress.

Sample

Participants in this study were 50 heterosexual married couples who had launched all of their children from the home within the past eighteen months. Participants ranged in age from 39 to 78 years old ($M = 54.83$, $SD = 6.61$). Couples were married for an average of 27.45 years (range 12-56 years) and had on average 2 children. On average, the last child had left the home 9 months prior to participating in the study (range = 1 month to 18 months). The majority of participants (n = 74%) were Caucasian, 9% were African American, 7% were Indian, 6% were Asian/Pacific Islander, 1% was Hispanic, and 3% reported “Other.”

Procedures

Undergraduate students enrolled in communication classes at Rutgers University were given extra course credit for recruiting eligible couples to participate in the study. Couples who were interested in participating in the study were instructed to email the
researcher to set up a time when they could come to the interaction lab in the School of Communication and Information at Rutgers University to complete all study elements. Due to daily fluctuations associated with cortisol (cortisol follows a diurnal rhythm, meaning that it peaks in the morning and declines throughout the day), and to accommodate the working schedules of the empty-nesters, all interactions occurred Monday-Friday between the hours of 5pm and 10pm. Participants were instructed not to eat, drink, smoke, or brush their teeth within half an hour of arriving at the interaction laboratory. Each individual was compensated $25 for participating in the study.

Upon arrival to the research lab, individuals were asked to provide their informed consent to participate in the study. Then, a ‘test’ saliva sample was obtained via the passive drool collection technique. This serves two purposes: a) to allow participants to get comfortable with the collection process, and b) as cortisol peaks 20 minutes post-stressor, this takes into consideration any stressors that may have been encountered on the way to the laboratory (i.e., rush hour traffic etc.) and allows for cortisol stabilization.

After the test saliva sample, participants individually completed a questionnaire on a variety of subjects asking about their relationship with their spouse. Subjects answered some open-ended questions about changes in their relationship, sources of relational uncertainty, and occasions of partner interference. These open-ended questions were coded to identify themes of relational uncertainty and partner interference during the empty-nest transition. Participants also completed a variety of closed-ended items about their relationship experiences including intimacy, relational satisfaction, partner interference, relational uncertainty, irritations and conflict, perceptions of turmoil, experiences of negative emotion, topic avoidance and communicative responsiveness.
The survey also asked the participants to identify five topics that are consistently a source of conflict in their relationship and to rate those topics in terms of their prominence in the relationship. The researcher used this question to identify the topic that creates the most conflict in the relationship and asked the couple to discuss this topic in one of the video-taped conversations that followed.

Immediately following the completion of the questionnaire each participant submitted a second saliva sample, which was used as the baseline comparison. Then, participants engaged in a 10-minute video-taped interaction in which they were asked to talk about how their relationship had changed since all of their children left the home. The purpose of this interaction was to allow the participants an opportunity to get used to the research environment and to feel comfortable discussing their relationship in front of the camera. While subjects were engaged in the first video-taped interaction, the researcher examined the list of conflict topics that each individual produced in their questionnaire and identified the topic that appeared to produce the most conflict for the couple. This topic was the focus of the second interaction. Following the first interaction, the individuals provided a third saliva sample and completed a brief survey about their perceptions of this interaction.

After both participants completed the brief survey about their initial interaction, they were escorted back to the interaction room and given instructions to discuss for 15 minutes the conflict-producing topic that was identified in their questionnaire. They were instructed that a timer outside of the room would beep at 15 minutes as an indication that they should be concluding their discussion. Participants were asked to discuss the researcher-identified conflict nominated by the spouses in the first questionnaire.
Once the conflict interaction was complete, participants were asked to produce a fourth saliva sample. This sample measured the levels of cortisol once participants began thinking critically about their relationship with their spouse (during the questionnaire). After the fourth sample was collected, participants were asked to complete a post-interaction questionnaire, evaluating their perceptions of the conflict interaction. After this, a fifth saliva sample was collected, which began to measure the cortisol levels from the conflict interaction.

After the fifth saliva sample was collected, participants were asked to enter the interaction room one final time for a final interaction that focused on something they have done together recently that made them feel happy or made them feel more in love. Because participants had spent a significant amount of time during the study thinking about and engaging in conflict with their partner, this final interaction was designed to allow participants to discuss a recent pleasant experience so that they left the research lab with more positive feelings toward one another. This conversation lasted 10 minutes. After the positive interaction a final saliva sample was collected to monitor the decay of cortisol after the passage of time and the experience of more pleasant communication between partners. Finally, participants were given compensation for their participation along with some parting refreshments, contact information for the researcher, and contact information for counseling services should they encounter any relational strain upon leaving the study.

**Survey Measures**

Three open-ended items that were adapted from Knobloch and Theiss (in press) were included in the study to address the research questions posed in Chapter 2. The first
question was coded to answer RQ1 and instructed participants to “Please describe any ways in which your marital relationship has changed now that all of your children have left the home.” The second question addressed relational uncertainty and was coded to answer RQ2: “It’s normal for people to have questions about their romantic relationships. People may experience uncertainty about their OWN thoughts, feelings, or behaviors; uncertainty about their PARTNER’S thoughts, feelings, or behaviors; or uncertainty about the NATURE OF THE RELATIONSHIP ITSELF. Please describe any questions or uncertainties you have experienced about yourself, your partner, or your relationship now that all of your children have left the home.” The final open-ended question was used to determine perceived interference from spouses and was coded to answer RQ3: “Sometimes relationship partners get in each other’s way and make it harder for one another to accomplish goals. Please describe ways that your partner has made it harder to complete your personal goals, activities, and routines now that all of your children have left the home.”

A variety of closed-ended Likert questions were used to operationalize the other variables used in this study. Confirmatory factor analyses were conducted on all multi-item scales to ensure that they meet the criteria of face validity, internal consistency, and parallelism (Hunter & Gerbing, 1982). The criteria for a good fitting factor structure were \( \chi^2/df < 3.0 \), CFI > .90, and RMSEA < .10 (Kline, 1998). After confirming the unidimensionality of the scales, composite scores were constructed by averaging the responses to the individual items.

**Relational uncertainty.** The variable relational uncertainty was operationalized using a measure developed by Knobloch (2008) to assess relational uncertainty in
marriage. A series of statements followed a stem that reads, “How certain are you about…?” and participants used a 6-point Likert scale to indicate their response (1 = completely or almost completely uncertain, 6 = completely or almost completely certain). Items were reverse coded so that higher values indicated uncertainty.

The self uncertainty scale consisted of seven items: (a) how you feel about your marriage; (b) your view of your marriage; (c) how important your marriage is to you; (d) your goals for the future of your marriage; (e) how much physical intimacy you should have with your spouse; (f) how best to communicate with your spouse; and (g) how to communicate effectively with your spouse (M = 1.79; SD = .94; α = .92; χ²/df = 1.55; CFI = .99; and RMSEA = .08). Partner uncertainty included five items: (a) how important your marriage is to your spouse; (b) your spouse’s loyalty to you; (c) your spouse’s faithfulness to you; (d) how much you can trust your spouse; and (e) your spouse’s fidelity to you (M = 1.55; SD = 1.05; α = .96; χ²/df = 1.62; CFI = .99; and RMSEA = .08). Relationship uncertainty included four items: (a) how you can or cannot behave around your spouse; (b) the current status of your marriage; (c) the definition of your marriage; and (d) the future of your marriage (M = 1.98; SD = 1.68; α = .92; χ²/df = .77; CFI = 1.00; and RMSEA = 0.00). The three sources of relational uncertainty are conceptually unique (Knobloch & Solomon, 1999), but they shared strong, positive, bivariate correlations (see Table 1). CFA results indicated that they were not unidimensional when the 16 items were assigned to a single factor. Accordingly, we were guided by both theoretical logic and empirical results in treating them as separate variables (as per Knobloch, 2006; 2007; 2010).
Interference from partners. A partner’s interference was measured by asking participants to indicate the extent to which their partner interferes with everyday activities (Solomon & Knobloch, 2001). Participants indicated their agreement with statements on a 6-point Likert scale (1 = strongly disagree, 6 = strongly agree) (M = 2.03; SD = 1.12; \( \alpha \) = .83). A partner’s interference was measured with five items: (a) my spouse interferes with whether I achieve the everyday goals I set for myself; (b) my spouse interferes with how much time I spend with my friends; (c) my spouse interferes with my ability to use my time well; (d) my spouse interferes with how much time I devote to my work; and (e) my spouse interferes with the things I need to do each day (\( \chi^2/df = .42; \) CFI = 1.00; and RMSEA = 0.00).

General turmoil. Self-report items developed by Knobloch (2007) were used to measure perceptions of turmoil. Respondents were asked to indicate how much they agree or disagree with a series of relationship characteristics prefaced by the stem “At the present time, this relationship is…” on a 6-point scale (1 = strongly disagree, 6 = strongly agree) (M = 2.21; SD = 1.10; \( \alpha \) = .78). General turmoil was measured with Participants were asked to rate the relationship as (a) chaotic; (b) tumultuous; (c) overwhelming; and (d) stressful (\( \chi^2/df = 1.65; \) CFI = .99; and RMSEA = .09).

Perceived stress. Self-report items developed by Cohen and colleagues (1983) as the Perceived Stress Scale (PSS) were used to measure self-perceived stress. A shortened version of the scale, the PSS-10 was specifically used here to measure perceived stress in response to situations in a person’s life. Respondents were asked to indicate the prevalence of an item within the last month on a 5-point scale (0 = never, 4 = very often) preceded by the stem, “In the last month how often have you…” (M = 1.74; SD = .68; \( \alpha \) =
Participants were asked to rate their stress on 7 dimensions: (a) been upset because of something that happened unexpectedly; (b) felt that you were unable to control important things in your life; (c) felt nervous and “stressed”; (d) felt confident about your ability to handle your problems; (e) found that you could not cope with all things you had to; (f) been able to control irritations in your life; and (g) been angered because of things that happened that were out of your control ($\chi^2/df = 1.76; \text{CFI} = .95; \text{and RMSEA} = .09$).

**Sources of conflict.** To determine sources of conflict, partners were asked to generate a list of five topics that are a consistent source of conflict in their marriage. Individuals were asked to focus on those conflict topics that occur frequently and to focus on the importance and salience of the conflict. Using the Marital Agendas Protocol (Notarius & Vanzetti, 1983) the researcher reviewed each spouse’s list to determine a conflict-inducing topic particular to each couple.

**Cortisol**

The salivary data was analyzed to test for cortisol. I was professionally trained in these laboratory techniques at the Salimetrics Laboratory at Pennsylvania State University. A laboratory facility in the endocrinology department at Rutgers University was secured that had the equipment necessary to test the saliva samples for cortisol. Typical cortisol levels for individuals in the age range for this population (average age of 55 years old) are ND (None Detected) to 0.228 for males and 0.022 to 0.254 for females (Aardal & Holm, 1995), and this is what the expected cortisol average outcome was for this study. Cortisol spike, or the increase in cortisol following the conflict interaction was
calculated by subtracting Time 2 from Time 5 for participants, and cortisol decay, or the recovery from the spike in cortisol was calculated by subtracting Time 6 from Time 5 for participants.
Chapter Five

Qualitative Results and Pilot Data

This chapter reports the results from the qualitative data collected in the pilot study and in the open-ended survey items completed by participants in the main study. The pilot study served to provide deeper insight to the empty-nest relationship and to confirm that the directions for the main study were appropriate. The open-ended responses from the questionnaire asked about three main aspects of the empty-nest transition: (a) changes to the spousal relationship since launching children \( (RQ1) \), (b) sources of relational uncertainty since launching children \( (RQ2) \), and (c) sources of partner interference since launching children \( (RQ3) \). First, I will present the results of the pilot study. Then, I will report the results of the open-ended survey data.

Pilot Study Findings

A small pilot study was conducted to ensure the appropriateness of the survey topics and questions and to gain further insight into the empty-nest relationship. Four couples were recruited via a convenience sample of empty-nest couples known by the author. All couples were at varying points in the transition to the empty-nest; Couple 1 had been empty-nesters for two years, Couple 2 had been empty-nesters for one year, Couple 3 had been empty-nesters for ten years, and Couple 4 had been empty-nesters for two years. Children left the home for a variety of reasons, with the most frequently reported reason being higher education, but also marriage and relocating for employment. Couples were interviewed together by the researcher either in person or over the phone. Participants were informed of the pilot study goals and procedures, as well as the larger study’s goals. After being informed of the research goals all individuals gave consent to
participate. Interviews were tape recorded and transcribed to preserve responses given by the participants. Interviews were semi-structured and ranged in length from 12 minutes to 24 minutes, with an average length of 16 minutes. See Appendix A for a list of interview questions, Appendix B for the informed consent, and Appendix C for the consent form to be audio taped. Interactions were inductively coded for major recurring themes across the couples. A research team consisting of two undergraduate research assistants went through typed transcriptions of the interviews three times. The first time the research team read the transcriptions to become familiar with the conversation and what was covered, the second time the research team read the transcriptions they identified topics or themes that either frequently arose or seemed to be of significant importance to the couple. The third time the research team read the transcriptions they identified any other recurring themes that may have been missed in the prior read-through. This logic of deriving themes inductively from the data follows the procedure set forth by Strauss and Corbin (1998), where the content of the conversations was identified and summarized objectively by the research team and then examined in a three-step process.

Pilot Themes

Four main themes emerged from the pilot data analysis: (a) preparation for the children to leave, (b) increased freedom and independence, (c) decreased worry, and (d) increased relational closeness. This section will present each theme and provide accompanying examples.

Preparation for the children to leave. The couples frequently reported on their acceptance of their new situation (having no children left in the home) because this stage of their lives had been something they expected and planned for. For these couples, the
high school years acted as a warning to begin preparation for this new stage of their life and when the actual launching of the children occurred many were prepared for what lay ahead. For example, the husband of Couple 1 lamented that “…it’s a fact of life” that children will eventually leave the home. Although the couples reported being prepared for the changes and their new life living as a dyad again, some spouses recalled poignant moments as the realization occurred that their children were not coming home. The husband in Couple 2 said that it was like the movie Father of the Bride, “…She will never sit in our kitchen with her pajamas on again you know. And that’s exactly how I felt. But after I mean we knew she was married and said good-bye and she was gonna be alright and all and so it was uh, it was bittersweet” Spouses also had an easier time accepting the transition to the empty-nest stage because many children would come back for visits or for a temporary place to live (termed “boomerang children,” see Mitchell & Gee, 1996). As the wife from Couple 2 recalls, “…I have kind of always been preparing for it. Um, and at the same time they don’t all leave at one time because they do come back and forth…it’s not like totally empty-nest at least for us and I think for a lot of parents with adult children that we find they do come back in between jobs maybe or apartment rentals or having troubles in there. So, uh, I think all of mine aren’t always gone forever.” For these couples, the launching of their children did not seem to be a permanent act and was easier to accept because of this realization.

**Increased freedom and independence.** Couples noted an increase in freedom, or more specifically time, to engage in individual activities and also activities as a couple since their children had moved out. Couples felt their responsibilities had been lifted. For instance, the wife of Couple 4 said, “I raised him and he is on his own and it was my time
again.” Couples also reported that life in general was significantly less demanding without having to coordinate individual and spousal commitments with the commitments the children held, as the wife of Couple 1 said, “We just don’t have any demands on our time. We’ve always both been very independent persona and we can’t have completely different schedule but I’m not a morning persona and he is, I’m a night person and he’s not. And that’s the way it was before children. And it was kind of that way with children. And we’re still that way. So it seems like we have more alone time for ourselves because now we don’t have that, he had his mornings and I have my nights but the kids aren’t there in the middle anymore.” This newfound freedom the couples experienced quickly translated to more time for the couple to engage in activities they preferred and seemed to mitigate a fair amount of stressors on their spousal relationship. Unscheduled and less hectic dinners were also a common theme among all couples in the pilot study. The wife from Couple 2 said, “…I find that we did that, have more of those dinners where okay, I’m busy anyway so let’s keep moving along and then I’d wait for him.” Overall, couples found their relationship to be filled with more time for preferred activities and tasks as opposed to necessary ones.

**Decreased worry.** Spouses reported less worry in their lives now that the children have left the home. Specifically, decreased worry was related to worry about the children. Spouses reported there was a noteworthy decrease in the amount of worry they felt for their children. Many felt confident in their abilities to prepare their children for the “real world” and this was reflected in their responses. For instance, the wife of Couple 2 said, “…I felt that he was prepared to go out and I felt that I wasn’t gonna get phone calls that he was gonna get lonely.” The husband for Couple 3 also addressed decreased worry over
scheduling and finances, “Where they had to be, you know, what was going on and…you
know, what monies had to [be] put out for them, and the whole bit.” No longer did the
couples have to wait up for the children to come home, couples had confidence in their
child’s ability to adapt to being away from home, and there was less scheduling and
financial drain on mom and dad’s wallets for the day-to-day activities engaged in by the
children.

**Increased relational closeness.** Spouses reported increased feelings of closeness
with one another. Closeness was identified by spouses in three primary ways: shared
activities, emotional connection, and sexual contact. With regard to physical closeness,
the wife of Couple 2 reflected on how she and her husband could now spend time
engaging in mutually enjoyed activities: “I’ll run with him or we’ll exercise once a week
or so together.” Couples also reported more emotional closeness. Emotional closeness
was identified by the empty-nest couples as having more time to “get to know” the other
spouse, or to cultivate the dating paradigm the couples had “BC, you know Before
Children,” (Couple 1, Husband). Spouses expressed, although indirectly, the concept of
going to know a spouse better now that they have gone through the empty-nest
transition, as opposed to getting to know a spouse as a continuation from their child-
rearing years. In other words, couples did not see this emotional closeness development
as a continuation of their relationship, but rather as something that was left off when they
had children, and now had to be reexamined and picked up again now that the children
were gone. The wife from couple 4 explains, “We were just able to get a lot closer as a
couple, I would think, as empty-nesters,” indicating a renewed sense of closeness in her
relationship. Lastly, the couples identified sexual closeness as an aspect of their
relationship that increased with the absence of children. Whether it was from the physical absence of children in the home making it easier to be intimate without the children being aware, or if was a result of having more time to spend with one another, couples identified this as a freeing activity that could be engaged in without worry and at their convenience. The husband from couple 4 drives this point home by saying, “And we could have sex when we wanted sex.”

**Relationship Changes in Empty-Nest Couples**

Three open-ended items were included in the main study. These open-ended questions were used to (a) evaluate changes to the marital relationship since becoming empty-nesters (RQ1), (b) assess the degree of relational uncertainty spouses were experiencing during the transition (RQ2), and (c) assess the degree of partner interference spouses were experiencing during the transition (RQ3). Answers were solicited from each spouse separately and privately from his or her partner. Open and axial coding was then used by the research team to identify dominant categories (as per Strauss & Corbin, 1998) across the responses. Open coding is an interpretive process designed to break down, examine, compare, conceptualize, and categorize data (Strauss & Corbin, 1990). Here concepts and topics were identified by the research team, and then combined to create overarching topics or concepts that applied and were relevant to the data (axial coding). The researcher and two members from the research team reviewed the responses from each participant. First, the research team read through the responses to become familiar with the material and the conversations. The second time the research team read through the responses topics were identified that either frequently occurred or that seemed to be of significance to the individual. On the final read-through, the research
team searched for additional topics that may have been missed on the second pass through the data. On the fourth review, the research team was instructed to review the themes that emerged to determine if they could be combined into more inclusive categories. Next, we unitized each participant’s response to a question into thematic units that conveyed a single idea (Krippendorff, 2004). Responses that referenced multiple ideas were divided into separate thematic units. Participants wrote an average of 1.12 thematic units per question (*range* = 1 to 3 thematic units, *Mdn* = 1 thematic unit). We then trained three independent judges who were blind to the research questions to code the data into mutually exclusive and exhaustive categories. Krippendorff’s (2004) $\alpha$ was calculated to evaluate reliability with $\alpha > .67$ denoting marginal reliability and $\alpha > .80$ representing satisfactory reliability (Krippendorff, 2004). Disagreements were resolved by selecting the category endorsed by the majority of judges.

**Changes in the Marital Relationship**

The first open-ended question asked participants to “Please describe any ways in which your marital relationship has changed now that all of your children have left the home” (*RQ1*). Five themes were pertinent to the relationship changes empty-nest couples experienced (Krippendorff’s $\alpha = .84$): (a) increased couple time, (b) reduced structure and increased freedom, (c) increased communication, (d) increased privacy, and (e) new beginnings (see Table 1).

**Increased couple time.** The first theme referenced the increased amount of time spouses spent together after the children had left the home (46.6% of thematic units). Individuals often mentioned the pleasure received from engaging in joint activities with their spouse, especially in comparison to when the children were living at home. Couples
frequently mentioned the time together was spent participating in ‘routine’ activities, most notably shopping and errands. For example, one husband (age 58, married 24 years, 2 children, empty-nester for 2 months) stated, “We are doing more things together on weekends and during the week at nights – I actually feel we enjoy the things we do more than before.” Similarly, another husband (age 53, married 28 years, 2 children, empty-nester for 2 months) stated, “Sometimes I feel like the house is kind of empty. But I also feel like we have more time to be alone and enjoy each other. We get along better.” One wife (age 57, married 28 years, 2 children, empty-nester for 2 months) said, “We cook less but then we go out more often. We feel lonely but in the same time we look for things to do together,” and another wife (age 59, married 38 years, 3 children, empty-nester for 18 months) added, “We have more time to do things as a couple, without all the schedules of the children to work around.” Thus, the empty-nest couples in this study found that the absence of children provided opportunities for them to spend more time engaged in activities together.

**Reduced structure and increased freedom.** A second theme to emerge from the data referenced the lack of structure in couples’ day-to-day routines (26.7% of thematic units). Whereas children’s schedules may have dictated daily routines prior to emptying the nest, now that the children have left the home spouses were pleased to be able to structure their time around their own personal goals. One notable routine that couples frequently mentioned was the new lack of structure around orchestrating dinners. For example, “We have more time to do things that we enjoy. Dinner is easier/easier to make plans,” (wife, age 45, married 25 years, 2 children, empty-nester for 12 months). A husband similarly reported, “Seems easier as far as the normal routines goes. No need to
take the kids needs into consideration for things such as meal planning, going to their sporting events etc.,” (husband, age 50, married 23 years, 2 children, empty-nester for 2 months). As a corollary to the reduced structure in activities and meals, couples also identified the freedom they now experience as a dyadic unit. For example, one wife said, “We do what we want, when we want- eat, sleep, sex, go out etc.,” (age 54, married 36 years, 3 children, empty-nester for 12 months), and, “More time one on one with spouse. Also more alone time. Scheduling is easier with only two schedules; less juggling,” (husband, age 54, married 30 years, 2 children, empty-nester for 7 months). Generally, the increased freedom that accompanied the empty-nest relationship was seen as a positive change for the relationship.

**Increased communication.** The amount of time couples spent talking with one another was also a theme for the empty-nest couples (12.2% of thematic units). Specifically, couples noted the ability to talk with one another regarding “heavy” topics or topics that could not be openly discussed around the children. For example, one wife (age 49, married 26 years, 2 children, empty-nester for 9 months) stated, “We are able to talk about family matters (money, work, sex, and activities) more frequently without considering being overheard.” In addition to being able to discuss topics of importance with one another, overall conversations were easier to have simply by having the distraction of children no longer in the home. One wife (age 49, married 22 years, 1 child, empty-nester for 1 month) addressed this, saying, “We speak more to each other and there are no distractions.” Another couple shared this sentiment: “We have to entertain ourselves and talk to each other about us.” (wife, age 55, married 26 years, 3 children, empty-nester for 3 months), and “We have to talk to each other. We need each other
By having the distraction of children removed from the home, and the inconvenience of over-hearing ears, empty-nest couples enjoyed increased quality and quantity of interpersonal communication.

**Increased privacy.** Couples highlighted increased privacy as another theme in their relationships since the departure of the children (8.7% of thematic units). Privacy issues were primarily related to sexual intimacy and peacefulness. For instance, one wife (age 45, married 25 years, 2 children, empty-nester for 12 months) stated, “We have more privacy and leave the BR [bedroom] door open…,” and another wife (age 54, married 21 years, 2 children, empty-nester for 2 months) adds, “More sex, more nudity, smoke pot openly, less stress.” Couples also reported more peacefulness resulting from their newfound privacy, for instance, “It’s much calmer, less stressful. More time for ourselves,” (husband, age 53, married 28 years, 2 children, empty-nester for 2 months). Thus, empty-nest couples enjoyed more privacy to engage in activities that they would not have done around their children and enjoyed a more peaceful and relaxing home life without their children.

**New beginnings.** The final theme empty-nesters identified was the realization of a new beginning for the relationship (5.8% of thematic units). For example, “It is good and enjoyable. It is like dating,” (wife, age 47, married 24 years, 2 children, empty-nester for 1 month). Couples identified this freedom as giving them more time to begin a new chapter in life with their spouse, “…We are now building our life together. [emphasis added],” (wife, age 49, married 26 years, 2 children, empty-nester for 9 months), and “…I actually feel we enjoy the things we do more than before,” (husband, age 58, married 24 years, 2 children, empty-nester for 15 months). For these couples, the
opportunity to reframe the relationship and move forward seemed to be a positive manifestation of the empty-nest period. In fact, at least one couple viewed the rejuvenation of their relationship as a sort of jointly-created mission statement, stating, “…We have made some important commitments regarding how we will fill our ‘empty-nest’ – things we are working on together,” (wife, age 63, married 43 years, 2 children, empty-nester for 5 months). Thus, many couples saw the empty-nest period as a fresh start for their relationship and were committed to making the transition a positive one.

**Relational Uncertainty**

The second open-ended question was adapted from Knobloch (2008) to address sources of relational uncertainty during the empty-nest transition (RQ2). Instructions for this question stated: “It’s normal for people to have questions about their romantic relationships. People may experience uncertainty about their own thoughts, feelings, or behaviors; uncertainty about their partner’s thoughts, feelings, or behaviors; or uncertainty about the nature of the relationship itself. Please describe any questions or uncertainties you have experienced about yourself, your partner, or your relationship now that all of your children have left the home.” For this question coders identified four themes pertinent to the relational uncertainties experienced by empty-nest couples (Krippendorf’s α = .82): (a) new roles and identities, (b) dependency anxiety, (c) love and intimacy, and (d) growing older (see Table 2).

**New roles and identities.** Some couples reported concern over shifting roles in their relationships since the children left home (34.5% of thematic units). Partners experienced concern over being able to reclaim their original roles with their spouse and worried if they would be able to shift from parental caregiver to spouse without incident.
For instance, one wife (age 49, married 22 years, 2 children, empty-nester for 13 months) indicated, “After having children live at home for so long, when they leave you really wonder what your role is toward each other. So much time was spent raising them, it feels like you are starting a new relationship all over again.” Another wife (age 47, married 21 years, 2 children, empty-nester for 2 months) said, “Uncertainty about new role as only partner and no one else to focus my attention as caregiver.” The perceived anxiety over the shifting of roles and role obligations appeared to raise questions for the spouses about how to give up their roles as parents and return to their roles as husband and wife. The loss of the parental identity was particularly salient for some couples. For example, one husband (age 50, married 23 years, 2 children, empty-nester for 2 months) stated, “I worried that having no kids at home would leave a very big void in mp’s [my partner’s] life as if her entire purpose that she devoted so much energy towards is suddenly gone. I worried how she would react to that.” This man’s wife (age 49) said, “Myself – as the ‘mom’ my identity has changed as I am no longer a full time mom which is a strange change for me. I have felt better about this. I had lots of anxiety all spring and summer, but that is gone now. But I do find that I don’t sleep as well when my children are not home.” Spouses also expressed concern over how their spouse would now see them. One husband (age 54, married 12 years, 6 children, empty-nester for 18 months) said, “[I worry about] being enough for my wife,” and another husband (age 51, married 27 years, 4 children, empty-nester for 2 months) shares this feeling saying, “I wonder if my wife looks at me more as a husband or father now that the kids are gone.” This negotiation of identity can be a source of concern for the individual’s redefining their own roles and for spouses observing their partner’s identity shift.
Dependency anxiety. Some couples expressed a concern about feeling bored or lonely and wondered if their relationship was strong enough to survive with the central focus of day-to-day operations not being the children (34.5% of thematic units). Couples were mostly concerned that their need for their partner would create an environment of overwhelming neediness for their spouse. Anxiety over the change in routine for the couple resulted in concern for the relationship in the future. For example, one husband (age 49, married 25 years, 2 children, empty-nester for 12 months) stated, “So far it has been okay, later on we may have to figure out more to do independently so that we don’t rub off on each other constantly. It is also a little boring and lonely sometimes as there are no kid related chores.” Similarly, one wife (age 55, married 26 years, 3 children, empty-nester for 3 months) asked, “What do we have in common, what common interests do we still have, how do I relate to him anymore? Do we still have the same goals in life?” Others expressed concern that nerves would rise as a result of increased time spent together. Couples were expressed concern for future activities together and connection they would have, or the connection that would be lacking, with their spouse. For instance, one wife (age 49, married 27 years, 4 children, empty-nester for 2 months) said, “[I] have been nervous about what we will have in common…As it always was the kids.” Another wife (age 58, married 24 years, 3 children, empty-nester for 2 months) shared this concern, “I don’t think my spouse feels the loneliness and emptiness in the house as much as I do – when he gets home from work, usually late, he just wants to go to bed, and usually falls asleep when I’m talking.” Although couples questioned if they would have enough to do as a unit, there was also a concern over having too much of a presence in one another’s life.
Love and intimacy. Questions about the nature of the romantic relationship were also a prevalent theme throughout the empty-nester’s responses (17.2% of thematic units). Now that the children were absent from the home, couples were uncertain about changes to the quantity or quality of their sexual intimacy, whether they would return to their “original” relationship, and whether the relationship would continue in the future. Both spouses in one couple referenced sexual closeness and intimacy concerns: “Being postmenopausal, my sex drive seems to be very little. I never initiate, but I am willing to have sex with [him] and enjoy it.” (wife, age 54, married 27 years, 1 child, empty-nesters for 1 month), and, “What can we do to have more enjoyment together? How can we have a better sexual relationship? How can we grow together and also as individuals?” (husband, age 55). Another husband (age 76, married 38 years, 1 child, empty-nester for 3 months) indicated, “I wonder if and when we’re going to have sex again; we’ve become more romantic, but less physically involved.” Regarding concerns over the future stability of the marriage, one husband (age 41, married 14 years, 1 child, has been an empty-nester for 1 month) stated, “I wondered would we stay together, would the relationship be stronger.” These concerns reflect uncertainty about the degree of intimacy in the relationship and the viability of the relationship moving forward.

Growing older. Empty-nesters also reported concern about getting older during this phase of their marriage (13.8% of thematic units). More specifically, many recognized the empty-nest transition as a benchmark that indicated they were entering a final stage of life, which spurred reflection on many other later-life issues. For example, one wife (age 53, married 23 years, 2 children, empty-nester for 3 months) stated, “With my children leaving home, I feel my own mortality more – getting older time passing
quickly.” Retirement and financial concerns were also mentioned as sources of concern in later life. For example, one wife (age 53, married 24 years, 1 child, has been an empty-nester for 18 months) wondered, “What will we do in our retirement years? Where will we live in the next 10 years? Where will we live in the next 5 years?” A husband (age 53, married 26 years, 2 children, empty-nester for 2 months) also shared these concerns: “Uncertainties are more about job status, changes in financial situation, how can we support each other during changes in family issues.” Thus, couples were more aware of their place in life during the empty-nest transition, which contributed to worry about aging, retirement, and finances.

**Interference from Partners**

The final open-ended question assessed the spouses’ perceived interference from partners ($RQ_3$). The instructions for this question stated: “Sometimes relationship partners get in each other’s way and make it harder for one another to accomplish goals. Please describe ways that your partner has made it harder to complete your personal goals, activities, and routines now that all of your children have left the home.” Four themes emerged pertinent to the interference from partners that empty-nest couples experienced (Krippendorf’s $\alpha = .74$): (a) relationship facilitation, (b) guilt, (c) forced activity, and (d) household chores (see Table 3).

**Relationship facilitation.** An overwhelming number of the empty-nesters reported that their partner makes it easier, rather than harder, to accomplish personal goals and routines (70.8% of thematic units). Spouses indicated that their routines and goals were often thwarted by the children’s needs when they were living at home, but that their partner seemed to have more time to help them accomplish goals now that the
children had left the home. One wife mentioned, “He has been very supportive in many, if not all ways. One personal goal I have is to learn and read Hebrew fluently so I can lead service…He comes with me at times,” (wife, age 63, married 43 years, 2 children, empty-nester for 5 months). Wives felt they had more time to focus on their activities, “…It’s just a time when, if you actually have a project or goal you want to attain you really have time to start it and do it. No excuses,” (wife, age 49, married 22 years, 2 children, empty-nester for 13 months). Husbands felt that wives had more time to focus on them, “Most of my goals/activities revolve around work. My wife contributes to this more now that our children are not at home. So I feel it’s easier instead of harder,” (husband, age 49, married 22 years, 2 children, empty-nester for 13 months), and, “She has actually made it easier now that her focus is not on the children,” (husband, age 49, married 19 years, 2 children, empty-nester for 1 month). Thus, spouses indicated that that their partner made it easier to accomplish personal goals, rather than interfering in those goals. Husbands in particular appreciated the extra time their wives now had to devote to them and help them in their personal goals. The presence of relationship facilitation may be a result of empty-nesters having spent the majority of their lives together. At this point in their relationship they likely have constructed coordinated patterns of communication and behaviors, and it is likely that each spouse knows the other very well. Hence, it would follow that when more time is available for the couple that each spouse would know how to focus that time on their partner.

**Guilt for pursuing individual goals.** Spouses also reported feelings of guilt as a source of interference from partners (11.2% of thematic units). Individuals experienced guilt when work or individual activities precluded “together time.” Moreover, spouses
felt guilt when concern over their partner’s loneliness might be a factor. For instance, one
husband (age 53, married 27 years, 2 children, empty-nester for 1 month) stated, “I need
to work a lot, so I feel guilty for not spending more time with my spouse.” Similarly, one
wife (age 53, married 24 years, 2 children, empty-nester for 15 months) indicated, “I
personally look to do more activities on my own…feeling sometimes guilty that my
partner would feel left out or slighted…He asks many times where I’m going.” Guilt also
emerged when individuals sacrificed personal activities because they worried their spouse
might feel lonely. For example, “…Sometimes I do not plan activities if he plans on
being home,” (wife, age 58, married 28 years, 2 children, empty-nester for 2 months),
and, “…Sometimes I may want to hang out with friends but don’t want to leave him
home alone so I won’t go out,” (wife, age 66, married 38 years, 1 child, empty-nester for
2 months). Thus, now that the children are absent, partners report guilt when they are not
present for their spouse, and feel guilty doing activities on their own because of the
concern for their partner’s need for interaction.

**Forced activity.** Husbands, in particular, lamented about having to participate in
certain activities that they had no interest in (10.3% of thematic units). For instance,
“[she] wants me to go more places together such as Target, food shopping. Drive her
around more” (husband, age 50, married 23 years, 1 child, empty-nester for 13 months).
Husbands reported that they felt their wives expected them to sacrifice their own interests
in order to engage in more joint activities, “…things such as thinking that I should pass
up personal activities (e.g. golf) because she won’t be tied up with the kids things,”
(husband, age 50, married 23 years, 2 children, empty-nester for 2 months), and,
“Sometimes she makes me feel that she wants me to do what she likes…” (husband, age
58, married 24 years, 2 children, empty-nester for 15 months). Without children in the home, wives in particular seemed to require their husband’s participation in activities that she used to perform independently or with the children. Thus, husbands were often forced to participate in undesirable activities with their spouse.

**Household chores.** One final theme referenced tasks and obligations around the home (7.7% of thematic units). Wives felt they had the same household chore responsibilities as before, but now with the added chore of taking care of their husband. For example, “He is around all the time and by him being there I cannot get as much done around the house” (age 49, married 22 years, 1 child, empty-nester for 1 month), and “My spouse thinks I have more time to do things for him,” (wife, age 54, married 27 years, 2 children, empty-nester for 1 month). Husbands reported that they were now expected to participate and help out around the house. For example, “…more time spent on household chores,” (husband, age 57, married 31 years, 2 children, empty-nester for 18 months), and “My partner seems to have gotten more bossy. More often she tells me what to do. Seems to give me more assignments,” (husband, age 62, married 24 years, 1 child, empty-nester for 18 months). Thus, spouses reported increased attention to household activities.

**Conclusion**

The fourteen themes identified here illustrate many of the barriers and successes empty-nest couples experience during the transition to this new stage of their relational life. Although many of these themes mimic previous findings in the empty-nest literature (see, for instance, Borland, 1982; Crowley, Hayslip, & Hobdy, 2003; Raup & Myers, 1989), it is important to note the overall positive experiences that the empty-nest couples
in this study reported. Although there are mentions of feeling guilty and activity constraints, many find they have more time to spend with their spouse communicating and engaging in activities vital to a healthy romantic relationship (activities such as engaging in intimacy, routine tasks etc.). These findings are encouraging because it appears the problems empty-nest couples self-report are minimal and focused primarily on tasks and activities, as opposed to more deeply rooted relationship issues. In the next chapter, I report the results of the quantitative data, as well as the physiological reactions of the empty-nest spouses when ruminating on relationship issues in conversation with their spouse.
Chapter Six

Quantitative Results

As I previously described, participants in this study completed a series of three questionnaires about their relationship since becoming empty-nesters, participated in three video-taped interactions in which conversation characteristics were analyzed, and provided six saliva samples which tested the physiological reactions individuals experienced as a result of reflection on their relationship with their spouse. The resulting data allowed me to test my hypotheses and research questions in a three-pronged approach: (a) salivary cortisol analysis was conducted to measure the fluctuation in individual cortisol levels during the data collection process; (b) research assistants coded the conflict interactions for the presence of topic avoidance, indirectness, criticism, demandingness, and withdrawal; and (c) hierarchical linear modeling (HLM) was employed to test the predicted associations among the couples.

Cortisol Analysis

Saliva samples were collected from the participants through the duration of the experiment. Saliva was collected using the passive drool technique and was collected in plastic Cryovials. Samples were then stored at -20 degrees Celsius to maintain the samples’ integrity. Prior to analysis, the samples were thawed and centrifuged to prepare the samples for the procedure. Salivary cortisol was analyzed using a high sensitivity salivary cortisol enzyme immunoassay (EIA) kit. The EIA kit contained all chemicals necessary for analysis as well as a 96-well plate coated with antibodies to cortisol. Standards, or known amounts of cortisol levels, were added to the plate to serve as control levels to test the sample against. Next, the saliva samples were added to the plate
(3 couples per plate). Each sample was tested in duplicate to ensure the reliability of the results. After the samples were added to the plate they were incubated for a period of 60 minutes at which time the cortisol competed with the antibodies to bind to the plate. After incubation the plate was thoroughly washed to remove the unbound cortisol and surplus sample, leaving trace amounts of cortisol bound to each well wall in the plate. Next, a substrate was added to react with the enzyme-linked cortisol. A second incubation period of 30 minutes was then used to allow the substrate to interact with the cortisol sample, changing the color of the sample to blue (a dark blue indicated high cortisol and light blue indicated low cortisol). A stop solution was then added to inhibit the interaction of the substrate and the cortisol, changing the color to yellow. Samples were then tested by using a plate reader to analyze the optical density of the sample to determine the presence of cortisol.

Some samples (44/600, or 7.3%) that were tested did not result in a readable cortisol level. Samples that were not identifiable were re-run to account for researcher error. After re-testing these samples, some (32/600, or 5.3%) still did not result in an observed cortisol level. There are two possible explanations for this. First, cortisol follows a diurnal rhythm, where the highest levels are observed approximately 30 minutes after awaking, and then followed by a continuous decrease as the day progresses. These samples were collected between the hours of 6pm and 8pm to accommodate the empty-nesters working schedules, which is also the time of day cortisol levels are the lowest. Second, as individuals increase in age cortisol levels decrease. The average age of the empty-nest sample was approximately 55 years old. Typical cortisol levels for individuals in this age range are ND (None Detected) to 0.228 for males and 0.022 to
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0.254 for females (Aardal & Holm, 1995). It is possible the cortisol levels for these individuals were so low the optical density plate reader could not identify a cortisol level.

The average cortisol for each participant at time points 1 through 6 (T1-T6) are presented in Table 4 (recall that cortisol peaks 20 minutes post-stressor). T1 represents the “practice” sample collection used to familiarize participants with the collection process and to control for any stressors that may have caused an increase in cortisol as participants traveled to the research facility (e.g., traffic etc.). T2 was collected after the participants completed the first questionnaire and represents their baseline level of cortisol. T3 was collected after the first interaction and reflects cortisol levels as participants completed the first questionnaire. T4 was collected after the second interaction (the conflict interaction) and reflects cortisol levels from the first interaction. T5 was collected after the third questionnaire was completed and prior to the third interaction, representing the cortisol levels demonstrated by participants as they interacted with their spouse during the conflict interaction (interaction 2). T6 was collected after the final interaction and after participants were debriefed and compensated, and indicates cortisol decay from T5. The change in cortisol levels from T2 (baseline sample) to T5 (conflict sample) was calculated for each individual to reflect the potential spike in cortisol as they communicated about conflict in their relationship. The change in cortisol levels from T5 (conflict sample) to T6 (decay sample) were calculated to reflect the decay in cortisol levels following the conflict interaction. These variables are also represented in Table 4.
Video-Taped Interactions

Video-taped interactions were coded by a team of trained coders. Coders were given a coding scheme tailored to each of the five conversational message features examined in this study (topic avoidance, indirectness, criticism, demandingness, and withdrawal). Coders were given the following instructions, “For each one-minute interval of the conversation, please rate the interaction on a five-point scale with regard to the male’s and the female’s directness or indirectness in their conversation.” The instructions then provided a five-point Likert scale for each of the message features with Completely Direct and Completely Indirect on the poles of the scale (Note: the poles and instructions were tailored to the specific conversational message feature). Reliability of the coders was determined using Cronbach’s Alpha. Topic avoidance ($\alpha = .80; M = 1.62; SD = .50$), indirectness ($\alpha = .72; M = 1.55; SD = .45$), criticism ($\alpha = .73; M = 3.11; SD = .40$), demandingness ($\alpha = .68; M = 2.36; SD = .60$), and withdrawal ($\alpha = .82; M = 1.71; SD = .59$) were coded.

Preliminary Statistical Analyses

As a starting point, I began my analyses by conducting paired-sample t-tests to evaluate each of the variables in the relational turbulence model for husbands and wives. Significant statistical differences were not found for the variables tested in this research for men and women.

Next, bivariate correlations were calculated to assess the relationships among all of the variables (see Table 5). Results indicated that self uncertainty was positively associated with partner uncertainty, relationship uncertainty, turmoil, stress, topic avoidance, and indirectness. Partner uncertainty was also positively associated with
relationship uncertainty, turmoil, and topic avoidance. Relationship uncertainty was positively associated with turmoil, stress, topic avoidance, indirectness, and criticism. Interference from partners was positively associated with turmoil, stress, withdrawal, indirectness, and criticism. These findings are consistent with the logic of the relational turbulence model. Table 5 also summarizes the associations among cortisol and the conversation features. Results indicated a moderate amount of significant findings. Baseline cortisol was negatively associated with cortisol spike, cortisol spike was negatively associated with topic avoidance, and cortisol decay was positively associated with withdrawal, and negatively associated with demandingness and criticism. Topic avoidance was positively associated with self, partner, and relationship uncertainty, and negatively associated with cortisol spike. Indirectness was positively associated with self uncertainty, relationship uncertainty, interference from partners, and cortisol decay. Criticism was positively associated with interference from partners and negatively associated with cortisol decay. Demandingness was negatively associated with cortisol decay. Withdrawal was positively associated with self uncertainty, interference from partners, and cortisol decay.

**Relational Turbulence Model Predicting Stress and Turmoil**

Hierarchical Linear Modeling (HLM) software version 6.8 was used to evaluate hypotheses because it is designed to accommodate nonindependent or nested data. I constructed a two-level model using maximum likelihood estimation with individual characteristics (e.g., cortisol levels, self-reported variables, message features) at Level 1 and dyadic characteristics (e.g., length of marriage, time since launching children) at Level 2. In the models that follow, the subscript $i$ refers to the individual (level 1) and the
subscript $j$ refers to the dyad (level 2). Variables were entered into the model as either grand-mean centered variables (i.e., centered around the sample mean) or group-mean centered variables (i.e., centered around the mean for the dyad). Grand-mean centered variables are represented in the models that follow as fully capitalized and group-mean centered variables are represented in the models as lowercase and italicized. Given that degrees of freedom were limited due the fact that Level 2 units were dyadic and therefore only contained two Level 1 units, all slopes were estimated as fixed effects and the intercept was estimated as a random effect.

**Baseline Cortisol**

Recall that $H1$ and $H2$ predicted that relational uncertainty and interference from partners are positively associated with baseline cortisol levels. To test these hypotheses, I constructed a multi-level model in which baseline cortisol (measured at T2) was the outcome variable. The sources of relational uncertainty and interference from partners were entered in separate models as grand-mean centered predictors on Level 1. Length of marriage and the number of months since launching the last child from the home were entered as grand-mean centered predictors on Level 2. The following equations represent the model when self uncertainty was the substantive predictor. Identical models were constructed for partner uncertainty, relationship uncertainty, and interference from partners.
Model 1: Relational Uncertainty and Partner Interference Predicting Baseline Cortisol

Level 1 Equation

\[ Y_{(ij)} = \pi_{o_j} + \pi_{1j}(SU_{ij}) + r_{ij} \]

Level 2 Equation

\[ \pi_{o_j} = \beta_{00} + \beta_{01}(MYEAR_{.j}) + \beta_{02}(MONTHS_{.j}) + u_{0j} \]

\[ \pi_{1j} = \beta_{10} \]

In the Level 1 model, \( \pi_o \) represents the intercept for the model, \( \pi_1 \) represents the linear effect for self uncertainty, and \( r \) represents the random effect. In the Level 2 equation for the intercept, \( \beta_{01} \) represents the between-groups differences in the intercept based on years a couple has been married, and \( \beta_{02} \) controls for months since the last child left the home.

Results of this analysis indicated that length of marriage and the number of months since launching children did not significantly alter the value of the intercept (see Table 6). Moreover, relational uncertainty and interference from partners were not significantly associated with baseline cortisol. The residuals indicated that there was no significant variability left to be explained in the intercept. Thus, \( H1 \) and \( H2 \) were not supported.

Perceived Stress

\( H3 \) and \( H4 \) predicted that relational uncertainty and interference from partners are positively associated with self-reported levels of stress for spouses. I constructed a model identical to Model 1, except that self-reported stress was the outcome variable. Results indicated that the number of months since becoming empty-nesters significantly
decreased the value of the intercept, such that couples who had been empty-nesters longer reported less stress than those who had become empty-nesters more recently (see Table 7). With regard to the hypotheses, self uncertainty, relationship uncertainty, and interference from partners were all positively associated with self-reported stress. In addition, partner uncertainty also provided a positive, but nonsignificant, association. Thus, H3 was partially supported and H4 was fully supported. The residuals indicated that there was no significant variability left to be explained in the intercept.

**Turmoil**

An identical model was constructed to test H5 and H6, except that perceptions of turmoil was the outcome variable. Results indicated that neither length of marriage nor time since launching children altered the value of the intercept (see Table 8). With regard to the slopes for the model, all three sources of relational uncertainty and interference from partners were positively associated with perceptions of turmoil. Thus, H5 and H6 were supported. The residuals for the model revealed significant variability left to be explained in the intercept.

**Relational Turbulence Model Predicting Features of Conflict Interaction**

As a next step in the analyses, the mechanisms of the relational turbulence model were tested as predictors of the message features examined during conflict interaction. Recall that the message features tested in this study were topic avoidance, indirectness, criticism, demandingness, and withdrawal. For these analyses, I again constructed a model identical to Model 1, except that each of the message features was treated as independent variables.
**Topic Avoidance**

Recall that $H7$ and $H8$ predicted that relational uncertainty and interference from partners are positively associated with topic avoidance. Results for the intercept revealed that length of marriage and time since launching children did not significantly alter the value of the intercept for topic avoidance (see Table 9). The slopes for the model revealed that self uncertainty and partner interference were positively associated with topic avoidance during the conflict interactions. Thus, $H7$ was partially supported and $H8$ was fully supported. The residuals for the model revealed that there was no significant variability left to be explained in the intercept.

**Indirectness**

Recall that $H9$ and $H10$ predicted relational uncertainty and interference from partners are positively associated with communicative indirectness during conflict. The slopes for the model revealed that self uncertainty, relationship uncertainty, and interference from partners were positively associated with indirectness during the conflict interactions. The slope for partner uncertainty also revealed a slight positive association with indirectness, although it only approached significance. Thus, there is partial support for $H9$. Interference from partners was also positively associated with communicative indirectness in conflict interaction; thus, $H10$ was supported. The residuals for the model revealed that there was no significant variability left to be explained in the intercept.

**Criticism**

Relational uncertainty ($H11$) and interference from partners ($H12$) were also expected to share positive associations with criticism (Table 11). The slopes for the model revealed that partner uncertainty and interference from partners approached
significance and were positively associated with criticism during the conflict interactions. Although the mechanisms did not result in significant findings, partner uncertainty and partner interference did approach significance. Thus, both $H11$ and $H12$ and unsupported. The residuals for the model revealed significant variability left to be explained in the intercept.

**Demandingness**

I also predicted positive associations between relational uncertainty ($H13$) and partner interference ($H15$) and demandingness in conflict interaction. The slopes for the model revealed that the effects were in the predicted direction, but only the effect for partner uncertainty approached significance (Table 12). Thus $H13$ and $H15$ are unsupported. The residuals for the model revealed no significant variability left to be explained in the intercept.

**Withdrawal**

Relational uncertainty ($H14$) and interference from partners ($H16$) were predicted to share a positive association with withdrawal in conflict communication. The slopes for the model indicate that self uncertainty, relationship uncertainty, and partner interference were positively associated with withdrawal during conflict interaction, and that partner uncertainty approached significance as well. Thus, $H14$ was partially supported and $H16$ was fully supported (Table 13). The residuals for the model revealed some variability left to be explained in the intercept.

**Predicting Cortisol Spike and Decay**

The next set of analyses evaluated the mechanisms in the relational turbulence model and the features of conflict interaction as predictors of the spike and decay of
cortisol following a conversation about marital conflict. As previously described, a spike in cortisol was calculated as the difference between cortisol at T5 and baseline cortisol at T2 (i.e., T5 cortisol – T2 cortisol). The decay of cortisol was calculated as the difference between cortisol at T5 and T6 (i.e., T5 cortisol – T6 cortisol).

**Mechanisms of Relational Turbulence Predicting Cortisol Spike and Decay**

To evaluate the impact of relational uncertainty and interference from partners on cortisol spike and decay, I constructed a model that was identical to Model 1, except that cortisol spike or decay were treated as the outcome variable. For the model predicting cortisol spike, results for the intercept revealed that length of marriage and time since launching children did not significantly alter the value of the intercept (see Table 14). The slopes revealed that relational uncertainty and interference from partners were not significantly associated with a spike in cortisol. Thus, $H_{17}$ and $H_{19}$ were not supported. The residuals also revealed no significant variability left to be explained in the intercept.

With regard to cortisol decay, the results for the intercept revealed that length of marriage and time since launching children did not alter the intercept (see Table 15). For the slopes, the sources of relational uncertainty were not significantly associated with cortisol decay; hence, $H_{18}$ was not supported. Interference from partners, however, was positively associated with a more substantial decay in cortisol. In other words, people who were experiencing interference from their spouse had a more rapid decline in cortisol levels following the conflict interaction. Thus, $H_{20}$ was also unsupported, because the association was in the opposite direction of what was predicted. The residuals revealed no significant variability left to be explained in the intercept.
Conflict Message Features Predicting Cortisol Spike and Decay

In addition to testing the mechanisms of the relational turbulence model as predictors of cortisol spike and decay, I also evaluated the features of the conflict interaction as a predictor of cortisol fluctuations. For these analyses, I constructed multi-level models in which cortisol spike and decay were the outcome variables and each of the message features were entered as grand-mean centered predictors in separate models. Again, length of marriage and the number of months since the children left home were included as Level 2 covariates on the intercept. Model 2 shows the equations that were used when criticism was a predictor. Identical models were constructed for topic avoidance, indirectness, demandingness, and withdrawal.

Model 2: Message Features Predicting Cortisol Fluctuation

Level 1 Equation

\[ Y_{(ij)} = \pi_{oj} + \pi_{1j} \text{CRITICISM}_{ij} + r_{ij} \]

Level 2 Equation

\[ \pi_{oj} = \beta_{00} + \beta_{01} \text{MYEAR}_{.j} + \beta_{02} \text{MONTHS}_{.j} + u_{0j} \]

\[ \pi_{1j} = \beta_{10} \]

Recall that H21 predicted that topic avoidance, indirectness, criticism, demandingness, and withdrawal are all positively associated with a spike in cortisol during conflict interaction. In the models predicting cortisol spike, length of marriage and time since launching children did not significantly alter the value of the intercept (see Table 16). Turning to the slopes, the effects for topic avoidance and withdrawal were in the predicted direction and approached significance (p < .10). Although support cannot be claimed for H21 based on this result, it is promising to see these associations in the
predicted direction. The residuals revealed no significant variability left to be explained in the intercept.

Finally, \( H22 \) predicted that criticism, topic avoidance, indirectness, demandingness, and withdrawal are negatively associated with cortisol decay. To test this hypothesis, I constructed a multi-level model that was identical to Model 2, except that cortisol decay was the outcome variable. Results for the intercept, again, revealed that length of marriage and time since launching children did not significantly alter the value of the intercept. Results for the slopes revealed that topic avoidance, indirectness and withdrawal were positively associated with cortisol decay, and criticism and demandingness were negatively associated with cortisol decay. In other words, individuals who were avoidant, indirect, and withdrawn during conversation recovered more quickly from the stressful interaction, and individuals who were more confrontational actually saw a continued increase in their cortisol levels following conflict. Thus, \( H22 \) received partial support. Results indicated that there was no significant variability left to be explained in the intercept.

**Summary**

The first set of hypotheses explored relational uncertainty and interference from partners and the associations to baseline cortisol, self-reported stress, and general turmoil. The results indicated that relational uncertainty and partner interference were not significantly associated with baseline cortisol for the empty-nesters (\( H1, H2 \), not supported). \( H3 \) and \( H4 \) explored relational uncertainty and interference from partners’ effect on self-perceived stress. Here, \( H3 \) was partially supported, indicating self uncertainty and relationship uncertainty contribute to more self-perceived stress, whereas
partner uncertainty did not. $H4$ was supported indicating partner interference did have a positive association with self-perceived stress. Last, relational uncertainty ($H5$) and interference from partners ($H6$) were tested for associations with general turmoil in the empty-nest relationship. Both hypotheses were supported, indicating the mechanisms of the relational turbulence model do predict turmoil in empty-nest relationships.

The second set of analyses explored the mechanisms of the relational turbulence model as indicators of conversational message features, namely topic avoidance ($H7; H8$), indirectness ($H9; H10$), criticism ($H11; H12$); demandingness ($H13; H15$), and withdrawal ($H14; H16$). Self uncertainty and partner uncertainty were positively associated with topic avoidance, providing partial support for $H7$. Interference from partners was positively associated with topic avoidance providing full support for $H8$. Self uncertainty and relationship uncertainty were positively associated with indirectness ($H9$), although partner uncertainty only approached significance disallowing this hypothesis to be fully supported. Interference from partners was positively associated with indirectness, thus providing full support for $H10$. There were no significant findings for relational uncertainty or partner interference predicting criticism ($H11, H12$) or demandingness ($H13, H15$); thus, these hypotheses were unsupported. The three sources of relational uncertainty and partner interference were all positively associated with withdrawal during conflict; thus, $H14$ and $H16$ were fully supported.

The final set of analyses tested the associations for cortisol spike and decay. $H17$ predicted relational uncertainty would be associated with a spike in cortisol post conflict interaction and $H19$ predicted interference from a partner would be associated with a spike in cortisol post conflict interaction. Unfortunately, both $H17$ and $H19$ were
unsupported. I also predicted that relational uncertainty (H18) and interference from partners (H20) are positively associated with cortisol decay, but neither hypothesis was supported. The final two hypotheses predicted message features would be associated with cortisol spike (H21) and cortisol decay (H22). Although there was no significant finding for H21, I did find partial support for H22. Topic avoidance, indirectness, and withdrawal were positively associated with cortisol decay, and criticism and demandingness were negatively associated with cortisol decay.
Chapter 7

Discussion

This dissertation explored the empty-nest relationship and the communicative and physiological reactions spouses experience during the transition to this new stage. The relational turbulence model provided a framework for exploring the dynamics of the empty-nest relationship and a theoretical foundation for advancing hypotheses that predicted communicative and physiological outcomes for empty-nest couples. The findings of this study suggest common themes of relational uncertainty and interference from partners that arise for many empty-nest couples during the transition to this phase of marriage. Findings also revealed associations between the mechanisms of the relational turbulence model and various personal and relational outcomes, including self-reported stress, perceived relational turmoil, and conversational features of conflict interaction.

Although relational uncertainty and interference from partners did not predict fluctuations in cortisol, some promising results emerged linking communication behavior and cortisol.

This study extended the relational turbulence model in a trio of ways. First, this dissertation broadened the scope of the relational turbulence model by applying its tenets to identify sources of turmoil during the empty-nest phase of marriage. Second, my project evaluates message features during conversations between spouses, which highlights communicative markers of relational turbulence beyond self-reported directness and topic avoidance that have been the norm in previous tests of the model (e.g., Knobloch & Theiss, 2011; Theiss & Solomon, 2006a, 2006b; Theiss et al., 2009). Third, this study extends the model to consider physiological manifestations of relational
turbulence in the form of the stress hormone cortisol. Thus, this dissertation makes significant contributions to the continued development of the relational turbulence model.

This study also adds to the literature on the transition to the empty–nest phase of marriage. With the exception of Erikson (1959) and Levinson and colleagues (1976), much of the literature on the empty-nest phase of marriage is empirical in nature but lacking a theoretical foundation (e.g., Barnett & Baruch, 1978). By applying the relational turbulence model to this context, my dissertation theorizes about the sources and manifestations of turmoil during this life transition. The individual and relational outcomes that were the focus of this study are also significant for extending the literature on the empty-nest transition. In addition, given that stress is related to a number of negative health outcomes for aging adults (take for example Baker et al., 2000; Burman & Margolin, 1992; Coyne et al., 2001; Gallo et al., 2003; Matthews & Gump, 2002; Ortho-Gomer et al., 2000), evaluating the relational factors that heighten stress can be helpful for promoting individual well-being. Finally, by exploring the conversation features couples employ during conflict, this study addresses the potential ramifications of negative conflict interactions between empty-nest couples. In this chapter, I discuss the implications of my research for extending the relational turbulence model and the literature on the empty-nest phase of marriage, as well as the strengths and limitations of this study and suggestions for future research.

**Implications for the Relational Turbulence Model**

As previously discussed, the relational turbulence model identifies relational uncertainty and interference from partners as two mechanisms responsible for heightened reactivity to relationship circumstances. Initially, the relational turbulence model
explored developing romantic relationships as primary contexts in which turbulence would manifest (Solomon & Knobloch, 2001; 2004), but more recent tests of the model have explored relational turbulence during transitions in more committed relationships (Knobloch, 2008; Theiss & Nagy, 2010). Given the promising extension of the relational turbulence model to more established relationships, this was the framework employed to examine the impact of relational uncertainty and partner interference in empty-nest couples.

**Sources of Relational Uncertainty and Partner Interference in Empty-Nest Couples**

Recall that the empty-nest lifecycle stage has been described as both the empty-nest experience and the empty-nest syndrome, indicating couples transitioning to this new phase can experience both positively and/or negatively valenced reactions to their relationship. As couples enter a new and unfamiliar stage in their life it may be overwhelmingly ambiguous and provide new opportunities for couples to disrupt one another’s routines.

Couples indicated their relationship had changed in a variety of ways since becoming empty-nesters (*RQ1*): (a) increased couple time, (b) reduced structure and increased freedom, (c) increased communication, (d) increased privacy, and (e) new beginnings. Notably, all of the themes that emerged from this question reflect positive changes to the empty-nest relationship. Thus, the participants in this study saw the empty-nest phase of marriage as an exciting and enjoyable moment in their relationship. The first two themes, increased couple time and reduced structure and increased freedom, however, may lay the groundwork for potential problems in the relationship. As couples negotiate newfound time for one another, certain behaviors enacted by a partner may
cause unexpected strife for the relationship. Increased communication, though commonly viewed as positive by empty-nesters, also provides the opportunity for misunderstandings, conflicts, and negative communicative outcomes. The message features studied in this research suggest the communication, though perceived as beneficial by the couples, does not necessarily always take that shape, and could fuel additional problems. Increased privacy and new beginnings reflect the benefits of launching children from the home, but may present a stumbling block as spouses have to renegotiate new relationship expectations. Although I was heartened to see the couples in this study viewed the empty-nest transition in a positive light, some of the themes that emerged have the potential to be a double-edged sword.

Next the empty-nesters were also asked about the uncertainties they experienced as they made their transition (RQ2) from which four themes emerged: (a) new roles and identities, (b) dependency anxiety, (c) love and intimacy, and (d) growing older. Couples reported having confusion or ambiguity over what role they now served for the family and for their spouse. Many questioned if they were still viewed as a parent by their spouse, or now just as a marital partner. Whereas other relationship transitions call for the adoption of an additional role (e.g., becoming a parent in addition to being a spouse), the empty-nest transition involves a loss of a role (parent) and the return to a role that may be a little out of practice (spouse), which may explain the heightened uncertainty at this time. Dependency anxiety was referenced by spouses in two ways, both as a concern for being too clingy with the other spouse, and also having concern over the spouse being too clingy with them. Again, this may be a result of the concern over new identities and roles, where the original ambiguity is “What do I do now?” which in turn leads to “Will my
new behavior be bothersome for my spouse?” Seeing these two themes as potentially interrelated is a possibility. Lastly, concern over growing older and issues of one’s own mortality were raised as areas of ambiguity for empty-nest couples. Specifically, couples reported concern over where to live, when to retire, and finances. Notably, death was not a specific mention for this category, but rather tangible issues that needed to be dealt with. Buying or selling a home, leaving one’s job, and money, although stressful events, are not pessimistic views of the future. In fact, these stressors elicit hopes and plans for the future as opposed to worry and dread. Again, this theme suggests the empty-nesters studied here were experiencing the transition positively.

The final research question (RQ3) explored issues of interference from a partner during the transition to the empty-nest phase, and four themes were identified: (a) relationship facilitation, (b) guilt, (c) forced activity, and (d) household chores. One pleasant finding was the identification of the spouse as a person who makes life easier, or who facilitates the achievement of daily goals. This may be because the relationship is now couple-centered as opposed to children-centered. With the children out of the home there is a need to become highly interdependent with one another. Related to this heightened interdependence, many spouses reported that they had to engage in more forced activity with their spouse than they would like. Husbands were asked to go grocery shopping with wives, wives were expected to watch television with husbands. Spouses were not particularly bothered by these new demands, but were not prepared for the change that launching children would bring.

These findings have important implications for extending the relational turbulence model. The majority of research using the model has tended to focus on the dark side of
relational transitions. For example, studies have examined relational outcomes such as jealousy (Theiss & Solomon, 2006a), conflict (Solomon & Knobloch, 2004; Theiss & Solomon, 2006b), negative emotion (Knobloch & Theiss, 2010), and hurt (Theiss et al., 2009). In addition, the model has traditionally been applied to relational conditions defined by hardship and strife, such as diagnoses of breast cancer (Weber & Solomon, 2008), infertility (Steuber & Solomon, 2008), and depression (Knobloch & Knobloch-Fedders, 2010). Notably, the relational turbulence model does not suggest that relational turbulence is manifest in negative relationship experiences; rather, the model defines turbulence as polarized reactions to interpersonal events. In other words, partners who are grappling with relational uncertainty and partner interference are just as likely to have extreme positive reactions to constructive relational events as they are to have extreme negative reactions to destructive relational events. For example, just as a husband may be more hurt by his wife’s criticism during a period of turbulence than during more tranquil times in the relationship, he might also be more encouraged by his wife’s compliment during this tumultuous transition than during more stable periods of relationship involvement. The fact that many of the themes that were identified by spouses reflected a positive outlook on the relationship suggests that the relational turbulence model has utility for explaining positive change and well as negative change during relationship transitions.

**Physiological Manifestations of Relational Turbulence**

This study advanced the relational turbulence model by adding a fourth dimension of reactivity to previously explored emotional, cognitive, and communicative outcomes: physiological reactivity. As a starting point relational uncertainty and interference from
partners were examined as contributing factors that may impact spouses’ baseline cortisol levels ($H_1$, $H_2$). The results of this study did not find any significant associations between relational uncertainty or partner interference and the baseline cortisol measure; thus, $H_1$ and $H_2$ were not supported.

One possible reason for the lack of association between the mechanisms in the relational turbulence model and baseline levels of cortisol may reside in the age of the participants for this study. Because this research explored empty-nest relationships, notably older participants, the cortisol ranges were effectively low. As cortisol in older populations tends to be lower than that of the cortisol levels found in younger populations, it follows that that an effect for cortisol spike was unobtainable from the baseline measure. In addition, the time of day may have contributed to the lack of significant findings, as cortisol follows a diurnal rhythm and decreases throughout the day. The study recruited participants to come to the Rutgers University Interaction Lab between the hours of 5pm and 7pm, when cortisol levels are generally at their lowest levels.

Another explanation for the lack of association is related to the global nature of assessments of relational uncertainty and interference from partners. The survey items asked participants to rate how certain they were about their relationship in general and how much their partner typically interfered in their daily goals. In contrast, cortisol is a hormone that is released to cope with specific threats to one’s well-being that subsides once a threat is resolved (Kirschbaum & Hellhammer, 1989). Thus, cortisol may not be responsive to such global features of the relationship. Had participants responded on episodic relational uncertainty or instances of interference they had encountered during
that day, then perhaps an association with cortisol would have emerged; however, global relational uncertainty and partner interference are not likely to be chronic stressors in a relationship that would elevate cortisol at the most basic level.

I also predicted that relational uncertainty and interference from partners would predict the spike and decay in cortisol levels following a conflict interaction ($H17$-$H20$). Results indicated that relational uncertainty was not significantly associated with either cortisol spike or decay; thus, $H17$ and $H18$ were unsupported. Interference from partners did not predict cortisol spike ($H19$), but it was positively associated with cortisol decay ($H20$). In other words, people who experienced a great deal of interference from their partner had a more rapid decay of cortisol following the conflict interaction. This outcome is counter to expectations, but makes a good deal of intuitive sense. People who experience heightened interference from their partner are likely accustomed to the frustrations that their partner presents; thus, the aggravation of a marital conflict is a normative experience that spouses have learned to cope with over time. In other words, cortisol dissipates quickly for individuals who experience partner interference because they are used to dealing with regular frustrations from their spouse.

Two explanations exist for the lack of association for the other mechanisms and the spike and decay of cortisol. One explanation is related to the possibility of dysregulated cortisol. One possible reason for the lack of association between the mechanisms in the relational turbulence model and fluctuations in cortisol may reside in the literature surrounding dysregulated cortisol. Recall that cortisol follows a diurnal rhythm meaning cortisol is highest in the morning and, absent acute stressors, decreases throughout the day and is lowest in the evening (Kirschbaum & Hellhammer, 1989).
Healthy diurnal curves, found in individuals whose cortisol follows this expected trajectory, experience highly differentiated levels of cortisol from morning until evening. When the curve is less pronounced and fluctuations are less elaborated the resulting effect is identified as dysregulated cortisol (Giese et al., 2004). Research has found dysregulated cortisol to be an early indicator of *allostatic load*, or the physiological accumulation of the effects of chronic stressors (Chrousos & Gold, 1998; Turner-Cobb et al., 2008; Gunnar & Vazquez, 2001). In other words, people with chronic life stressors (e.g., health concerns, financial hardship, relational conflicts) have a high accumulation of cortisol in their body and, therefore, experience fewer fluctuations in their cortisol throughout the day. It is also widely believed that chronic stress response can give way to hypercortisolism as the HPA axis loses its resilience (McEwen, 1998), suggesting that over time the stress response becomes itself stressed and tired, thus being unable to fluctuate as actively as it once had. Thus, one possible explanation for the lack of association between the mechanisms in the relational turbulence model and baseline levels of cortisol is that the empty-nest couples who participated in this study may have had dysregulated cortisol and allostatic load due to chronic stressors in their life.

A second explanation is that global evaluations of relationship characteristics are too abstract to predict physiological reactions to a specific interaction. As the results indicate, the features of the conversation are more proximal predictors of cortisol reactivity than broad relationship qualities. As previously argued, given that cortisol is triggered to help respond to threatening episodes, it is not surprising that message features of the conflict interaction predicted cortisol decay, but global assessments of relational uncertainty and partner interference did not.
This study attempted to extend the relational turbulence model by exploring cortisol as a physiological manifestation of turbulence. Unfortunately, results did not support this effort. To observe a physiological reaction in a future study, slight variations could be made to the protocol that might enhance the markers of psychological turbulence. First, by following the diurnal rhythm and testing salivary cortisol over multiple time points during the day we could ascertain the basal levels of cortisol for empty-nest couples. By obtaining the basal levels of cortisol we could then have a better understanding of these couples and whether the cortisol reactions to conflict interaction with a spouse are indeed significantly higher than the basal level of cortisol. By design, this would also allow for cortisol analyses at differing points in the day, which would alleviate the problem of collecting samples in the evening when the cortisol levels are generally at their lowest. Further, an increase in the sample size may help to detect physiological outcomes of turbulence in empty-nest relationships. Lastly, other means of observing physiological turbulence may be explored through less invasive measures, for instance by monitoring heart rate and employing skin conductance tests. Other means of examining stress reaction may occur neurologically and perhaps a partnership with colleagues in the neurological sciences could produce research actually observing stress reaction in individuals.

**Cognitive Manifestations of Relational Turbulence**

Given the exploratory nature of this study’s focus on cortisol as a physiological marker of turbulence, I also evaluated self-reported stress and turmoil as two cognitive manifestations of turbulence. As a starting point, self-reported stress was examined as a cognitive outcome of relational uncertainty \((H3)\) and partner interference \((H4)\). Self
uncertainty and relationship uncertainty were positively related to self-reported stress, but the effect of partner uncertainty was nonsignificant; thus, H3 was partially supported. In addition, interference from partners was positively associated with self-reported stress, thereby providing support for H4.

With regard to relational uncertainty, why would self and relationship uncertainty be significant predictors of stress, but not partner uncertainty? Perhaps the answer lies in the locus of control for each source of relational uncertainty. People may be more stressed when they are uncertain about something over which they feel they have some control. For example, if a spouse is doubting his or her involvement or if is not sure about the future of the relationship in general, he or she might be stressed by that because they may be feeling ashamed for having these thoughts or feel compelled to do something to fix it. If a spouse is not sure how his partner is feeling, he may react as though there is nothing that can be done, and that it is out of his control. If a wife is experiencing partner uncertainty she may feel as though she cannot control how she feels and that her partner is going to have to resolve his issues on his own. Realizing this, she may actively decide not to get upset over uncertainties she has about her partner, because there is nothing she can really do about it.

The results also indicated that interference from partners is associated with increased stress. These findings are consistent with the logic of the relational turbulence model, which suggests that people are frustrated by frequent partner-related interruptions to their goals and routines (Solomon & Knobloch, 2004). Given the amount of uninterrupted time spouses are likely to spend together during the empty-nest phase, it is not surprising that they would have more opportunities to disrupt one another’s routines.
Moreover, couples who had grown accustomed to a well-established routine when their children were around may be particularly stressed by their inability to establish a coordinated routine with their spouse now that the children are gone. Spouses may expect that life will be less chaotic without children in the house, but perhaps the confusion of establishing a new routine is an unexpected event that promotes cognitive stress.

Relational uncertainty \((H5)\) and interference from partners \((H6)\) were also tested as predictors of general turmoil in empty-nest relationships. Strong support was found for both hypotheses. These positive associations between the mechanisms of the relational turbulence model and perceived turmoil are consistent with previous research findings (e.g., Knobloch & Theiss, 2010; Theiss & Nagy, under review). Although previous studies have examined appraisals of turmoil primarily in dating relationships (but see Theiss & Knobloch, under review), the current investigation confirms that turmoil is a relevant variable beyond courtship. The transition to the empty-nest creates upheaval in a marriage that requires spouses to re-evaluate their roles, re-establish routines, and re-consider their romance, so it is not surprising that the relational uncertainty and partner interference that accompany these changes are associated with perceptions of increased turmoil. These results highlight the utility of the relational turbulence model for examining various transitions during the course of a romantic relationship.

**Features of Conflict Interaction as Markers of Turbulence**

This study also advanced the relational turbulence model by exploring new communicative markers of relational turbulence. Specifically, features of conflict interactions were examined as outcomes of relational uncertainty and interference from partners. I predicted that the mechanisms of the relational turbulence model would
predict increased topic avoidance, indirectness, criticism, demandingness, and withdrawal during conflict interactions.

**Topic avoidance.** Results for topic avoidance revealed that self uncertainty and partner interference increased topic avoidance, providing partial support for $H_7$ and full support for $H_8$. In some ways, these results are consistent with previous research (Knobloch & Carpenter-Theune, 2004; Knobloch & Theiss, 2011), but past research has typically shown associations between topic avoidance and both partner uncertainty and relationship uncertainty. Why are these associations nonsignificant among empty-nesters? One explanation may be related to the small sample size in this study, as the coefficients were in the predicted direction but nonsignificant. Perhaps the study was too underpowered to detect significant associations in these instances. Another explanation may be related to the focus of self uncertainty versus partner and relationship uncertainty. People who are unsure of their own commitment may avoid topics to prevent the relationship from moving forward or to avoid talking about topics that would terminate the relationship if they have not yet decided what they want.

**Indirectness.** Indirectness was also tested as an outcome of relational uncertainty ($H_9$) and interference from partners ($H_{10}$). Self uncertainty, relationship uncertainty, and interference from partners were all significantly associated with indirectness, thereby partially supporting $H_9$ and fully supporting $H_{10}$. Although the results were in the predicted direction, the findings for self uncertainty and partner interference are counter to those in other studies that have documented negative associations with indirectness in the context of irritations and conflict (e.g., Theiss & Solomon, 2006b). Self uncertainty may be explained by the conflict itself, for instance if I have self uncertainty then I can be
direct about irritations because I have nothing to lose. Directness may arise as a result of partner interference when I feel I must be direct in order to resolve the issue. Although one could imagine these reactions in romantic relationships across the lifespan, these issues may be more relevant to empty-nest couples. Perhaps for the couples the only ambiguity that sparks direct conversations stem from my questions, which I need answers to, and my partner’s interfering behaviors, which I want to stop. It may be that empty-nesters have experienced their relationship for such an extended period of time that they know what issues need to be specifically addressed and which ones to put on the shelf. Although an interfering spouse may be perceived as highly irritating (Theiss & Solomon, 2006b), empty-nest spouses may have learned over the years of their relationship to expect or ignore certain interfering behaviors from their partner.

**Criticism.** Criticism was also explored as an outcome of relational uncertainty (H11) and partner interference (H12) in empty-nest couples. Although neither of these predictions were fully supported by the data, the effects for partner uncertainty and interference from partners did approach significance. Notably, the two variables that emerged as near-significant predictors of criticism reflect partner focused concerns about the relationship. Thus, it appears that individuals are likely to be more critical when their partner is behaving badly. When people doubt their partner’s involvement in a relationship, their aggravation over this uncertainty may contribute to more critical communication in conflict interactions. Similarly, dealing with a partner’s interference in the relationship can give rise to pent-up frustrations about a partner or the relationship that are released through criticism during conflicts. Criticism can be used to raise
relational transgressions (Metts, 1994; Roloff & Cloven, 1994), unmet expectations (Afifi & Metts, 1998), or a variety of other partner-centered relational issues.

**Demandingness.** The next set of hypotheses predicted that relational uncertainty \((H13)\) and interference from partners \((H15)\) predict more demanding communication during conflict. These hypotheses were not supported, but the effect for partner uncertainty approached significance. Although prior research has suggested that people may be more tentative in their communication with a partner when they doubt that person’s commitment to the relationship (Theiss & Solomon, 2006b), the results of this study suggest that people are emboldened to make demands on a partner when they question his or her relational involvement. Notably, past studies have explored the associations between partner uncertainty and indirectness or topic avoidance among dating partners (e.g., Knobloch & Carpenter-Theune, 2004; Knobloch & Theiss, 2011; Theiss & Solomon, 2006b). Perhaps empty-nest couples perceive less risk in open and assertive communication because they have an established relationship and a long history with their partner; thus, spouses may feel more comfortable making demands on a spouse who appears to lack involvement in the marriage, perhaps as a way to force the partner to become more involved in the relationship. This interpretation is speculative, but future research should consider the differences in communication between dating partners and married partners under similar relationship conditions.

**Withdrawal.** Finally, I predicted that relational uncertainty \((H14)\) and interference from partners \((H16)\) are positively associated with withdrawal during conflict interactions. Results generally supported these predictions, with the exception of partner uncertainty that only approached significance. These results suggest that as
people experience relational uncertainty their reaction is to withdraw from conflict interaction. It may be that individuals choose to steer clear of conflict with their partner because they view the topic or the surrounding relational factors as too ambiguous. Or, spouses may lack the motivation to resolve disputes in a relationship that they may no longer desire. Relationship uncertainty may promote withdrawal because partners may be paralyzed by doubts about how to behave in a conflict interaction with their spouse. Although past research has suggested that interference from partners should promote more active communication behavior to resolve disruptions and establish more coordinated actions (e.g., Theiss & Solomon, 2006b), perhaps empty-nest couples have exhausted their efforts to change a spouse’s behavior and withdraw from conflicts when they sense their involvement is futile.

Topic avoidance, indirectness, criticism, demandingness, and withdrawal are all important areas of communication behaviors to examine for extending the relational turbulence model. The presence and amount of relational uncertainty and interference from partners perceived can lead to these more intensified reactions. Specifically, these message features add to the model by exploring more communicative outcomes of conflict, an area of relation turbulence model research that would benefit from future empirical tests.

**Predicting Cortisol Spike and Decay**

My final goal was to explore how features of conflict interaction were associated with the spike and decay of cortisol. Recall that cortisol spike was unaffected by relational uncertainty (H17) and interference from partners (H19), although partner interference did predict cortisol decay. This may suggest that the more interference
perceived from a spouse may result in a more drastic change in physiological stress reduction. In other words, if a spouse is cognitively concerned or irritated by a partner’s interference, this cognitive stress may manifest in more physiological extremes. I wanted to expand this understanding of spike and decay in conflict communication by exploring the specific message features that manifested during the actual conflict.

The features of conflict interaction were examined as predictors of cortisol spike ($H_{21}$) and decay ($H_{22}$) for empty-nesters. With regard to a spike in cortisol during conflict, two features of conflict interaction approached significance: topic avoidance and withdrawal. Specifically, topic avoidance and withdrawal during conflict were associated with a more significant increase in cortisol following the interaction. Individuals who employ topic avoidance and withdrawal as a means of suppressing argument, may experience the unexpected effect of an increased cognitive and emotional load during conflict. In other words, increased rumination, reflection, and emotion that are unexpressed during conflict are manifest in physiological reactivity to the event. This finding is supported by Selye’s work (1975) indicating persistent stress that is not resolved through coping or adaptation may lead to anxiety or withdrawal behaviors. Thus, keeping complaints and thoughts to one’s self can be toxic in terms of the physical stress that result from these seemingly harmless behaviors.

The findings for message features predicting cortisol decay proved to be the most promising and unexpected ($H_{22}$). Topic avoidance, withdrawal, and indirectness were positively associated with cortisol decay for the empty-nest couples, indicating that as these message features were increasingly present in conflict communication the decay of cortisol was more pronounced. These effects were in the opposite direction of what was
predicted, but the direction of the effect may be due to the nature of these particular message features. For example, topic avoidance, withdrawal, and indirectness are communication strategies used by individuals to mitigate potentially unpleasant conversations and to prevent embarrassment, serious conflict, or undesirable outcomes. Individuals who employed these communication strategies became less involved in the conflict and evaded negativity during the interaction; thus, they were able to recover more quickly from the stress evoked by the conversation.

On the other hand, demandingness and criticism were negatively associated with cortisol decay, indicating that when these message features were present during conflict cortisol levels actually continued to increase beyond the expected peak, or spike, in cortisol following the interaction. One possible explanation for the continued increase in cortisol may be due to the topic of the conflict interaction. Spouses self-identified the most frequent sources of conflict they experience in their relationships and one of these topics was then selected to be the focus of the conflict interaction. Given the chronic nature of these conflicts, individuals who are overly critical and demanding during the interaction may be particularly frustrated by the continued lack of action or responsiveness on the part of their spouse. Moreover, they may ruminate beyond the end of the conflict about the things they said during the conversation and about their partner’s failure to help resolve the conflict. In this case, the combination of a chronic stressor in the relationship and increased rumination sparked by criticism and demands may have provided a delayed stress reaction as opposed to an acute stress reaction. Standard laboratory stress-inducing tests include acute stress tests, for instance asking participants to submerge their arms in an ice-water bath (cold pressor test) for a prolonged amount of
time to elicit a cortisol reaction (Floyd et al., 2007; Riozzi et al., 1987). This test, as opposed to the conflict interaction used in the current study, may provide a quicker increase in cortisol levels. Thus, one possibility is that the conflict interaction served as more of a latent stress induced test for individuals, thereby inciting a prolonged cortisol reaction.

Another possible explanation for these effects lies in the content of demanding and critical messages. Demanding messages, although not always derogatory, are usually aimed at a partner’s behaviors or actions and are considered generally dysfunctional (Caughlin & Huston, 2002; Denten et al., 2001). Requests for behavioral change for instance can contribute to dissatisfaction in relationships (Caughlin & Huston, 2002; Heavey et al., 1995; Noller et al., 1994). Criticism is also considered a generally dysfunctional attribute of conflict communication (Gottmann, 1994). Therefore, it is possible that the overarching negative tone to the interaction left spouses feeling stressed for a prolonged period of time.

**Implications for Empty-Nest Couples**

The findings from this research study can be helpful for couples experiencing the empty-nest transition. For many couples this is a time of change and new experiences, which oftentimes can be thought of as scary or unnerving. By shedding light on this transition for empty-nest couples, especially as the baby-boomers approach and manage this period of their life, allows couples to examine their relationship in a new light.

This research suggests relational uncertainty and interference from partners may be salient issues for empty-nest couples. As couples begin to shift the focus away from their children and begin to focus more on the marital relationship questions of self,
partner, or relationship uncertainty are likely to arise. As partners begin to integrate more wholly into one another’s lives without the schedules of children to abide by, it follows that some spouses may get in the other’s way. Irritating behaviors, thoughtless action, or simple misunderstandings could lead to the perception of an interfering partner. The relational turbulence model might help empty-nesters prepare for these and other changes they may experience.

The findings in this study suggest conflict-related stress is a physiological concern for empty-nesters. How a couple engages in conflict with one another may produce elevated cortisol levels, which in turn can have health related implications. Health concerns are a growing issue for the aging empty-nest population. Increased stress is related to disruptions in immune system functioning (Kiecolt-Glaser et al., 1996), increased rate of illness and morbidity (Burman & Margolin, 1992; Hu & Goldman, 1990), increased rates of cardiovascular disease (Coyne et al., 2001; Matthews & Gump, 2002; Ortho-Gomer et al., 2000), atherosclerosis (Gallo et al., 2003), and hypertensive complications (Baker et al., 2000). The results of this study highlight features of conflict interaction that may increase stress and consequently contribute to health problems. Future research should consider the broader health implications that may arise when aging couples engage in destructive conflict interactions.

The findings of this study are also useful for marriage counselors and therapists who want to help empty-nest couples strengthen their relationships. Specifically, this research highlights two issues that may be salient for empty-nest couples seeking counseling. First, this study suggests therapists can help couples in the empty-nest phase of marriage by encouraging them to be vigilant about identifying sources of relational
uncertainty and interference from partners. The results of this study revealed that these two features of relationships are related to more self-reported stress, perceptions of turmoil, and more destructive communication behaviors during conflict. By helping couples recognize sources of relational uncertainty and partner interference, counselors can help to mitigate relationship problems. Second, this study points features of conflict interaction that contribute to physiological stress. Marriage counselors who are armed with this information can provide guidance for empty-nest couples to engage in more constructive and less stressful communication behaviors during interpersonal conflict.

As is the case for all close, personal relationships, managing conflict through constructive communicative behaviors is paramount. This practice contributes to the well-being of the relationship, but also for individual health and wellness. Because stressors can negatively affect the relationship and physical health of individuals, it is important that the empty-nest population specifically find ways to address issues of concern so as to not put themselves at greater risk for health complications, an issue this age group may be currently struggling with or will be soon.

**Strengths and Limitations**

This research study through design, implementation, and analysis has several strengths and some limitations. This study contributes to the field of communication and the literature surrounding close, personal relationships by extending the relational turbulence model. The relational turbulence model is a widely used theoretical perspective that incorporates relational uncertainty and interference from partners as mechanisms that contribute to more polarized emotional, cognitive, and communicative reactions in relationship events. Early research focused on developing romantic
relationships as the content for this analysis, but more recent research has extended the theoretical model to more committed relationships. This research contributes to the understanding of the model by employing dyadic data from empty-nest couples, a previously untested context for the relational turbulence model. Further, previous tests of the relational turbulence model focused on the emotional, cognitive, and communicative effects elicited by relationship events, but this research adds cortisol as a potential physiological marker of turbulence and investigates specific features of conflict communication to broaden the scope of communicative markers of turbulence. Moreover, the benefits of the inductive and deductive approaches taken in this research aid in understanding the transition to the empty-nest stage, through both open-ended accounts of the transition and theoretically supported hypotheses.

Although this research has strengths and contributes greatly to the communication literature, there are some limitations. First, the sample size was limited to 50 empty-nest couples (100 individuals) due to the limited availability of resources. Although this is an adequate number of participants for conducting a multi-level model, the sample likely lacked sufficient power to detect small and medium effects. With specific regard to the cortisol, there were some additional limitations. First, recall that cortisol typically follows a diurnal rhythm, indicating that as the day progresses cortisol levels decline and are at their lowest in the evening. Due to the schedules of empty-nesters, participants arrived at the Interaction Lab between 5pm and 7pm in the evening (after work). One reason cortisol levels were low in this study may be attributable to the generally low levels of cortisol during this time of day. Another factor limiting the cortisol levels obtained in this study is related to the age of the participants. Prior results indicate that healthy adults in
this age range have average cortisol levels ranging from ND (None Detected) to .254, which is much lower than the average cortisol levels for healthy individuals in their early twenties through forties (ranging ND - 3.08 for males aged 21-30 to ND – 3.59 for males 31-50 years of age) (Aardal & Holm, 1995). The lower levels of cortisol in this population may have impacted the results of this study’s cortisol findings. One final limitation this research encountered is with regard to the sample itself. It is worth noting that the members of this study self-selected to participate and may have been more comfortable discussing relationship issues than other empty-nest couples who chose not to participate. This recruitment strategy was unlikely to attract couples who were experiencing a great deal of turmoil and strife during the empty-nest transition.

**Future Directions**

Future research should continue to examine the transitions that later life couples experience in their relationship trajectory. Much research to date has focused on developing relationships and the convenient sampling of college-aged students. Although this research is important and has provided countless learning experiences for the field of communication, it does leave the larger segment of the population underrepresented. Future research should also continue to examine the physiological effects of communicative behaviors with significant others both in negative and positive communication experiences. Specifically, future research should examine conflict communication behaviors that increase stress and may negatively affect the outcome of these interactions, as well as the personal health and wellbeing of relationship partners. Issues of failing health and failing marriages are salient and timely in the United States
and current research to understand, explain, or predict outcomes is a necessary move for today’s communication scholars.

**Conclusion**

This research has examined empty-nest couples and the communicative and physiological effects they experience following the transition to the empty-nest stage of their relationship. This research has advanced the discipline in three important ways. First, the relational turbulence model has been applied and extended here. Second, implications for conflict communication in marital relationships has been closely examined. And finally, implications for empty-nest couples have been identified.

I tested the relational turbulence model in a new context for this study and having done so am able to extend its theoretical reach. First, relational uncertainty and interference from partners were found to not have an impact on trait cortisol levels (T2). This is an important consideration for the relational turbulence model as this suggests heightened relational uncertainty and interference from a partner do not physiologically affect individual’s overall cortisol levels, thus indicating there are no stress-related health repercussions resulting from the major mechanisms of the relational turbulence model. The relational uncertainty and interference from partners were also significant predictors of self-reported stress and turmoil in empty-nest couples, and the presence of these features also was significantly related to specific features on conflict conversation including topic avoidance, indirectness, and withdrawal.

Although examining the message features of conflict communication between empty-nesters did not identify any significant associations with a spike in state cortisol, individuals who were avoidant, indirect, and withdrawn during conversation recovered
more quickly from the stressful interaction, and individuals who were more
confrontational actually saw a continued increase in their cortisol levels following
conflict. These findings suggest that empty-nesters’ interaction during conflict can have
physiological implications. Overtime, managing conflict well with one’s spouse may
decrease cortisol levels and may put empty-nesters at a lower risk for a variety of health
issues.

Lastly, I draw upon the implications this research has for empty-nest couples.
Managing conflict in a healthy way is an ongoing challenge for individuals in any
relationship. Although conflict is present for empty-nesters, it is worth mentioning that
these couples have developed conversational techniques to lower cortisol after a conflict,
specifically through topic avoidance, indirectness, and withdrawal. These conversational
behaviors can help to lower cortisol following a particularly stressful event, which
practiced consistently in one’s romantic relationship may have long-reaching health
benefits.
Table 1

Changes to the Relationship

1. *Increased Couple Time*

“We are doing more things together on weekends and during the week at nights – I actually feel we enjoy the things we do more than before.”

“Sometimes I feel like the house is kind of empty. But I also feel like we have more time to be alone and enjoy each other. We get along better.”

“We cook less but then we go out more often. We feel lonely but in the same time we look for things to do together.”

“We have more time to do things as a couple, without all the schedules of the children to work around.”

2. *Reduced Structure and Increased Freedom*

“We have more time to do things that we enjoy. Dinner is easier/easier to make plans.”

“Seems easier as far as the normal routines goes. No need to take the kids needs into consideration for things such as meal planning, going to their sporting events etc..”

“We do what we want, when we want- eat, sleep, sex, go out etc..”

“More time one on one with spouse. Also more alone time. Scheduling is easier with only two schedules; less juggling.”

3. *Increased Communication*

“We are able to talk about family matters (Money, work, sex, and activities) more frequently without considering being overheard.”

“We speak more to each other and there are no distractions.”

“We have to entertain ourselves and talk to each other about us. There is no dinner hour, no sport events to go to after work or on weekends.”

“We have to talk to each other. We need each other more.”

4. *Increased Privacy*

“We are able to talk about family matters (money, work, sex, activities) more freely without considering being overheard.”

“We have more privacy and leave the BR [bedroom] door open…”

“More sex, more nudity, smoke pot openly, less stress.”

“It’s much calmer, less stressful. More time for ourselves.”

5. *New Beginnings*

“It is good and enjoyable. It is like dating.”

“…We are now building our life together. [emphasis added].”
Table 1, continued

“…I actually feel we enjoy the things we do more than before.”
“We have made some important commitments regarding how we will fill our ‘empty nest’ – things we are working on together.”
Table 2

Relational Uncertainty

1. New Roles and Identities

“After having children live at home for so long, when they leave you really wonder what your role is toward each other. So much time was spent raising them, it feels like you are starting a new relationship all over again.”

“Uncertainty about new role as only partner & no one else to focus my attention as caregiver.”

“I worried that having no kids at home would leave a very big void in mp’s [my partner’s] life as if her entire purpose that she devoted so much energy towards is suddenly gone. I worried how she would react to that.”

“Myself – as the ‘mom’ my identity has changed as I am no longer a full time mom which is a strange change for me. I have felt better about this. I had lots of anxiety all spring and summer, but that is gone now.”

“I wonder if my wife looks at me more as a husband or father now that the kids are gone.”

2. Dependency Anxiety

“So far it has been okay, later on we may have to figure out more to do independently so that we don’t rub off on each other constantly. It is also a little boring and lonely sometimes as there are no kid related chores.”

“What do we have in common, what common interests do we still have, how do I relate to him anymore? Do we still have the same goals in life?”

“I don’t think my spouse feels the loneliness and emptiness in the house as much as I do – when he gets home from work, usually late, he just wants to go to bed, and usually falls asleep when I’m talking.”

3. Love and Intimacy

“Being postmenopausal, my sex drive seems to be very little. I never initiate, but I am willing to have sex with [him] and enjoy it.”

“What can we do to have more enjoyment together? How can we have a better sexual relationship? How can we grow together and also as individuals?”

“I wondered would we stay together, would the relationship be stronger.”

“I wonder if and when we’re going to have sex again; we’ve become more romantic, but less physically involved.”
Table 2, continued

4. *Growing Older*

“With my children leaving home, I feel my own mortality more – getting older time passing quickly.”

“Uncertainties are more about job status, changes in financial situation, how can we support each other during changes in family issues.”

“What will we do in our retirement years? Where will we live in the next 10 years? Where will we live in the next 5 years?”
Interference from Partners

1. **Relationship Facilitation**

“He has been very supportive is many, if not all ways. One personal goal I have is to learn and read Hebrew fluently so I can lead service…He comes with me at times,”

“…It’s just a time when, if you actually have a project or goal you want to attain you really have time to start it and do it. No excuses.”

“Most of my goals/activities revolve around work. My wife contributes to this more now that our children are not at home. So I feel it’s easier instead of harder.”

“She has actually made it easier now that her focus is not on the children,”

2. **Guilt for Pursuing Individual Goals**

“I need to work a lot, so I feel guilty for not spending more time with my spouse.”

“I personally look to do more activities on my own…feeling sometimes guilty that my partner would feel left out or slighted…He asks many times where I’m going…”

“…Sometimes I do not plan activities if he plans on being home.”

“…Sometimes I may want to hang out with friends but don’t want to leave him home alone so I won’t go out.”

3. **Forced Activity**

“[She] wants me to go more places together such as Target, food shopping. Drive her around more.”

“…things such as thinking that I should pass up personal activities (e.g. golf) because she won’t be tied up with the kids things.”

“Sometimes she makes me feel that she wants me to do what she likes…”

4. **Household Chores**

“He is around all the time and by him being there I cannot get as much done around the house.”

“My spouse thinks I have more time to do things for him.”

“…more time spent on household chores.”

“My partner seems to have gotten more bossy. More often she tells me what to do. Seems to give me more assignments.”
Table 4

*Average Cortisol Per Time Period Taken and Average Cortisol Spike and Decay*

<table>
<thead>
<tr>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
<th>Time 4</th>
<th>Time 5</th>
<th>Time 6</th>
<th>Δ Spike</th>
<th>Δ Decay</th>
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</table>

*Note.* The averages presented here are combined for husbands and wives. The spike in cortisol (Δ Spike) was calculated by subtracting Time 2 from Time 5 for participants. The decay in cortisol (Δ Decay) was calculated by subtracting Time 6 from Time 5 for participants.
Table 5

**Bivariate Correlations between Relationship Characteristics and Variable Measured**

<table>
<thead>
<tr>
<th></th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>V4</th>
<th>V5</th>
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<th>V12</th>
<th>V13</th>
<th>V14</th>
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<tr>
<td>V1: Self Uncert.</td>
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<td>V2: Partner Uncert.</td>
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<td>V3: Relation. Uncert.</td>
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<td>-.05</td>
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<td>V6: Δ Spike</td>
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<tr>
<td>V7: Δ Decay</td>
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<tr>
<td>V8: Turmoil</td>
<td>.37*** .31** .38*** .46*** -.12</td>
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<td>V9: Stress</td>
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<td>V10: Topic Avoid.</td>
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<td>.36***</td>
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<td>V11: Indirectness</td>
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<td>.81**</td>
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Table 5, continued

| V12: Criticism | .06 | .13 | .07 | .25* | -.07 | -.04 | -.25* | .22* | .16 | -.08 | -.11 |
| V13: Demandingness | .07 | .11 | .06 | .11 | -.02 | -.05 | -.22* | .08 | .10 | -.21* | -.23* | .78 |
| V14: Withdrawal | .23* | .16 | .20 | .32*** | -.14 | .16 | .31** | .25* | -.02 | .72* | .73** | -.02 | -.11 |

*** p < .001. ** p < .01. * p < .05, two-tailed
Table 6  
*Relational Uncertainty and Interference from Partners Predicting Baseline Cortisol (T2)*

<table>
<thead>
<tr>
<th></th>
<th>Self Uncertainty</th>
<th>Partner Uncertainty</th>
<th>Relationship Uncertainty</th>
<th>Partner Interference</th>
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Slope

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*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are t and represent the remaining unexplained variation in that variable.

*** p < .001.
Table 7

*Relational Uncertainty and Interference from Partners Predicting Self-Reported Stress*

<table>
<thead>
<tr>
<th></th>
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<td>Time Post Launch</td>
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<td>-.03*</td>
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Slope

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<tbody>
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<td>Partner Interference</td>
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<td>.15**</td>
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Table 7, continued

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* p < .05. ** p < .01. *** p < .001.
Table 8

*Relational Uncertainty and Interference from Partners Predicting Turmoil*

<table>
<thead>
<tr>
<th></th>
<th>Self Uncertainty</th>
<th>Partner Uncertainty</th>
<th>Relationship Uncertainty</th>
<th>Partner Interference</th>
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<td>Time Post Launch</td>
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Slope

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<td>Relationship Uncertainty</td>
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<td>.37***</td>
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<tr>
<td>Partner Interference</td>
<td></td>
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<td></td>
<td>.41***</td>
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</table>
Table 8, continued

| Residual (t) | .46*** | .46*** | .44*** | .27*** |

*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are $t$ and represent the remaining unexplained variation in that variable.

** $p < .01$. *** $p < .001$. 

Table 9

*Relational Uncertainty and Interference from Partners Predicting Topic Avoidance*

<table>
<thead>
<tr>
<th></th>
<th>Self Uncertainty</th>
<th>Partner Uncertainty</th>
<th>Relationship Uncertainty</th>
<th>Partner Interference</th>
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</thead>
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<td>1.63***</td>
<td>1.63***</td>
<td>1.63***</td>
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<td>.00</td>
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<tr>
<td>Time Post Launch</td>
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**Slope**

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<tbody>
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<td>.09*</td>
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<td>Relationship Uncertainty</td>
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Table 9, continued

<table>
<thead>
<tr>
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</table>

*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are $t$ and represent the remaining unexplained variation in that variable.

* $p < .05$. *** $p < .001$. 
Table 10

*Relational Uncertainty and Interference from Partners Predicting Indirectness*

<table>
<thead>
<tr>
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Slope

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*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are t and represent the remaining unexplained variation in that variable.

* p < .05. ** p < .01. *** p < .001. † p < .10.
Table 11

*Relational Uncertainty and Interference from Partners Predicting Criticism*

<table>
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<tr>
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<td>-.01</td>
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**Slope**

- Self Uncertainty: .01
- Partner Uncertainty: .05†
- Relationship Uncertainty: .02
- Partner Interference: .07†
Table 11, continued

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*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are $t$ and represent the remaining unexplained variation in that variable.

** $p < .01$. *** $p < .001$. † $p < .10$. 
Table 12

*Relational Uncertainty and Interference from Partners Predicting Demandingness*

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**Slope**

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<tr>
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<tr>
<td>Partner Interference</td>
<td>.07</td>
</tr>
<tr>
<td>Residual (t)</td>
<td>.02</td>
</tr>
<tr>
<td>-------------</td>
<td>-----</td>
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</tbody>
</table>

*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are t and represent the remaining unexplained variation in that variable.

*** p < .001. † p < .10.
Table 13

*Relational Uncertainty and Interference from Partners Predicting Withdrawal*

<table>
<thead>
<tr>
<th></th>
<th>Self Uncertainty</th>
<th>Partner Uncertainty</th>
<th>Relationship Uncertainty</th>
<th>Partner Interference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
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<td>1.72***</td>
<td>1.72***</td>
<td>1.72***</td>
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<tr>
<td>Length of Marriage</td>
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<td>.01</td>
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<tr>
<td>Time Post Launch</td>
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<td>.00</td>
<td>.00</td>
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</table>

Slope

- **Self Uncertainty**
  - .14**

- **Partner Uncertainty**
  - .08†

- **Relationship Uncertainty**
  - .11*

- **Partner Interference**
  - .17**
Table 13, continued

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<th>0.03</th>
<th>0.02</th>
<th>0.05*</th>
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*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are t and represent the remaining unexplained variation in that variable.

* p < .05. ** p < .01. *** p < .001. † p < .10.
Table 14

*Relational Uncertainty and Interference from Partners Predicting Cortisol Spike*

<table>
<thead>
<tr>
<th></th>
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<th>Partner Uncertainty</th>
<th>Relationship Uncertainty</th>
<th>Partner Interference</th>
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</thead>
<tbody>
<tr>
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<td>-.02</td>
<td>-.02</td>
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<tr>
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Slope

<table>
<thead>
<tr>
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<th>Relationship Uncertainty</th>
<th>Partner Interference</th>
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<tbody>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner Uncertainty</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Uncertainty</td>
<td></td>
<td></td>
<td>.01</td>
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<tr>
<td>Partner Interference</td>
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<td></td>
<td></td>
<td>.01</td>
</tr>
</tbody>
</table>
Table 14, continued

| Residual (t) | .00 | .00 | .00 | .00 |

*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are t and represent the remaining unexplained variation in that variable. No values are significant.
Table 15

*Relational Uncertainty and Interference from Partners Predicting Cortisol Decay*

<table>
<thead>
<tr>
<th></th>
<th>Self Uncertainty</th>
<th>Partner Uncertainty</th>
<th>Relationship Uncertainty</th>
<th>Partner Interference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
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<td>.01**</td>
<td>.01**</td>
<td>.01**</td>
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<td>.00</td>
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</tr>
<tr>
<td>Time Post Launch</td>
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<td>.00</td>
<td>.00</td>
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**Slope**

<table>
<thead>
<tr>
<th></th>
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<th>Partner Uncertainty</th>
<th>Relationship Uncertainty</th>
<th>Partner Interference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.01*</td>
</tr>
</tbody>
</table>
Table 15, continued

<table>
<thead>
<tr>
<th>Residual (t)</th>
<th>.00</th>
<th>.00</th>
<th>.00</th>
<th>.00</th>
</tr>
</thead>
</table>

*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are t and represent the remaining unexplained variation in that variable.

* p < .05. ** p < .01.
Table 16  
*Message Features Predicting Cortisol Spike*

<table>
<thead>
<tr>
<th></th>
<th>Topic Avoidance</th>
<th>Indirectness</th>
<th>Criticism</th>
<th>Demandingness</th>
<th>Withdrawal</th>
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<tbody>
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<td>-.12</td>
<td>-.12</td>
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<tr>
<td>Length of Marriage</td>
<td>-.00</td>
<td>-.00</td>
<td>-.00</td>
<td>-.00</td>
<td>-.00</td>
</tr>
<tr>
<td>Time Post Launch</td>
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<td>.00</td>
<td>.00</td>
<td>.00</td>
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</tr>
</tbody>
</table>

Slope

<table>
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<tr>
<th></th>
<th>Topic Avoidance</th>
<th>Indirectness</th>
<th>Criticism</th>
<th>Demandingness</th>
<th>Withdrawal</th>
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<td></td>
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<tr>
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<tr>
<td>Criticism</td>
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<td></td>
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<td>Demandingness</td>
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<tr>
<td>Withdrawal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.04†</td>
</tr>
</tbody>
</table>
Table 16, continued

| Residual (t) | .00 | .00† | .00 | .00 | .00 | .00 |

*Note.* Cell entries in the intercept category are the change in the intercept attributable to the within-person mean, which represents the between-person effect on that variable. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the random effects category are $t$ and represent the remaining unexplained variation in that variable.

† $p < .10$. 
Table 17

Message Features Predicting Cortisol Decay

<table>
<thead>
<tr>
<th></th>
<th>Cortisol Decay</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Topic Avoidance</td>
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<tr>
<td>Intercept</td>
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</tr>
<tr>
<td>Length of Marriage</td>
<td>-.00</td>
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<tr>
<td>Time Post Launch</td>
<td>-.00</td>
</tr>
</tbody>
</table>

Slope

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic Avoidance</td>
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</tr>
<tr>
<td>Indirectness</td>
<td>.01*</td>
</tr>
<tr>
<td>Criticism</td>
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<td>Withdrawal</td>
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Table 17, continued

<table>
<thead>
<tr>
<th>Residual (t)</th>
<th>.00</th>
<th>.00</th>
<th>.00</th>
<th>.00</th>
<th>.00</th>
<th>.00</th>
</tr>
</thead>
</table>

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* p < .05. ** p < .01.
Appendix A

Pilot Study Questions for Discussion:

<<Thanks; Informed Consent; Informed Consent for Audio-Taping>>

1. How many children do you have? (probe a little here: sons/daughters, ages)

2. How long ago did your last child ‘leave the house’? (You might probe about this a little: did they go to college? Where? How often do they come home? Just as a way to break the ice a little bit.)

3. Many parents anticipate the day when their children leave. How did you feel about this transition as it got closer? How did you prepare for this new phase of your life?

4. How did you feel during those first few days after your child left? What was it like coming home to an empty house?

5. I would like to learn a little bit about your relationship with your spouse since your last child left the house. How have you and your spouse adjusted to being alone in the house again?

6. Tell me about your experiences as a couple as you transitioned to the empty-nest phase of your relationship. In any relationship, it’s normal to have questions, doubts, or uncertainties from time to time, especially during times of flux. We can have doubts about our own desires and behaviors in the relationship, our partner’s desires and behaviors, and about the relationship as a whole. As you transitioned to being an empty-nester, what elements of your relationship did you feel uncertain or unsure about? How?
7. One of the challenges of being in a relationship is that you have to coordinate your life with your spouse. Sometimes our partners don’t always make that easy. In my relationship, I like to work out in the morning so that I get it out of the way, but my boyfriend always wants to sleep in. It’s so hard to force myself to get out of bed to go exercise when he keeps calling me back to bed. I end up skipping my workout at least twice a week because of him! Especially when our relationship changes, our efforts to coordinate a new routine can be difficult. You might remember how much your relationship changed after you gave birth to your first child. The things you used to accomplish easily on your own, you now needed help and input from your spouse. Now as you return back to being married without children in the home, how have you gone about coordinating your actions again? Has your spouse done anything that made it particularly hard to coordinate a smooth routine?

8. As you transitioned to being an empty-nester, did you experience any conflict with your spouse? What kinds of things did you fight about during this transition? Where they the same conflicts you had before your child left home?

9. What else can you tell me about this transition, looking back on it now?

<<Thanks; Debrief>>
Appendix B

Consent Form to Participate in Research

Title of Study: The Communicative and Physiological Manifestations of Relational Turbulence during the Empty-Nest Phase of Marital Relationships

Principal Investigator: Mary E. Nagy, ABD
4 Huntington St., New Brunswick, NJ 08901
Email: marynagy@eden.rutgers.edu
Phone: 609-610-7436

Faculty Advisor: Jennifer A. Theiss, Ph.D.
4 Huntington St., New Brunswick, NJ 08901
Email: jtheiss@rutgers.edu
Phone: 732-932-7500 ext. 8143

You are invited to participate in a research study that is being conducted by Mary E. Nagy who is a doctoral candidate in the Department of Communication at Rutgers University. Before you agree to participate in this study, you should know enough about it to make an informed decision. If you have any questions, ask the investigator. You should be satisfied with the answers before you agree to be in the study.

The purpose of this research is to understand the relationship characteristics that affect people’s perception of their marriage during the transition to the empty-nest phase of their relationship. You are asked to participate in a small study that will help to understand the experiences you have encountered recently in your relationship. Specifically, you will be asked about your interaction with your spouse since your children have left home. Approximately 3 couples, or 6 individuals, who are in the empty-nest phase of their relationship will participate in the study. The study will last approximately 30 minutes. The study procedure includes an interview by the Principal Investigator. Although you will not be compensated for this study, your valuable input will help the researchers to better understand the transition many couples face as they enter the empty nest phase of their relationship.

Your participation in this study is voluntary. Although answering every question is preferable, you have the right to skip any questions that you do not want to answer. You also have the right to stop participating at any time prior to the completion of the study. If you withdraw from the study before data collection is completed your responses will be removed from the data set and destroyed.

This research is confidential. Confidential means that the research records will include some information about you. This information is kept confidential by limiting individual’s access to the research data and keeping it in a secure location. If you agree to take part in the study, your name will only appear on this consent form, which will be stored separately from your interview responses. Your responses will be kept in a locked filing cabinet in the office of the principal investigator. There
Appendix B, continued

will be no way to link your responses back to you once your consent forms have been removed; therefore, data collection is confidential. The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated, unless you have agreed otherwise.

Risks associated with participation in this study are limited, but might include nervousness, embarrassment, or self-consciousness, or potential emotional distress resulting from increased reflection on your marriage. There may not be any specific benefits that you will gain by participating in this research; however, this study will be beneficial to the community as a whole by providing insight into the empty-nest phase of marriage.

If you experience emotional distress or increased stress and anxiety about your relationship following your participation in this study, you are encouraged to seek counseling services. You can find a certified counselor in your area by searching the counseling directory of the American Counseling Association at the following web address: http://www.counseling.org/Resources/CounselorDirectory/TP/Home/CT2.aspx

If you have any questions about the study procedures, you may contact the researcher, Mary E. Nagy at (609) 610-7436, or marynagy@rutgers.edu, or the faculty advisor on this project, Jennifer A. Theiss at (732) 932-7500 x8143, or at jtheiss@rutgers.edu. If you have any questions about your rights as a research subject, you may contact the Sponsored Programs Administrator at Rutgers University at:

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 732-932-0150 ext. 2104
Email: humansubjects@orsp.rutgers.edu

Sign below if you agree to participate in this research study.

Subject’s Signature: _____________________________ Date: _______________

Investigator’s Signature: ___________________________ Date: ______________

Please give one signed copy of this form to the researcher conducting the study, and keep one for your records.
Appendix B, continued

*This informed consent form and research protocol was approved by the Institutional Review Board for the Protection of Human Subjects at Rutgers University on 07/16/10 and expires on 07/16/11.*
Appendix C

Consent Form to be Audio Taped

Title of Study: The Communicative and Physiological Manifestations of Relational Turbulence during the Empty-Nest Phase of Marital Relationships

Principal Investigator: Mary E. Nagy, ABD
4 Huntington St., New Brunswick, NJ 08901
Email: marynagy@eden.rutgers.edu
Phone: 609-610-7436

Faculty Advisor: Jennifer A. Theiss, Ph.D.
4 Huntington St., New Brunswick, NJ 08901
Email: jitheiss@rutgers.edu
Phone: 732-932-7500 ext. 8143

You have already agreed to participate in a research study entitled: The Communicative and Physiological Manifestations of Relational Turbulence during the Empty-Nest Phase of Marital Relationships conducted by Mary E. Nagy and Dr. Jennifer Theiss. We are asking for your permission to allow us to audiotape your interview with the researcher as part of that research study.

The recording(s) will primarily be used for analysis by the research team. Some interactions in some instances may be used for academic purposes at professional conferences. The recording(s) will include no personal identifying information other than your voice. Your name will not appear in the audio recording.

During data collection, the recording(s) will be stored in a locked filing cabinet in the Principal Investigator’s locked office with no link to your identifying information. Only members of the research team will have access to listen to the recordings. The audiotapes will be retained for a period of three years, at which point they will be destroyed.

Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

Name (Print) ______________________________________
Participant Signature __________________________ Date ________________
Principal Investigator Signature _________________ Date ________________
Appendix D

Consent Form to Participate in Research

Title of Study: The Communicative and Physiological Manifestations of Relational Turbulence during the Empty-Nest Phase of Marital Relationships

Principal Investigator: Mary E. Nagy, ABD
4 Huntington St., New Brunswick, NJ 08901
Email: marynagy@eden.rutgers.edu
Phone: 609-610-7436

Faculty Advisor: Jennifer A. Theiss, Ph.D.
4 Huntington St., New Brunswick, NJ 08901
Email: jtheiss@rutgers.edu
Phone: 732-932-7500 ext. 8143

You are invited to participate in a research study that is being conducted by Mary E. Nagy who is a doctoral candidate in the Department of Communication at Rutgers University. Before you agree to participate in this study, you should know enough about it to make an informed decision. If you have any questions, ask the investigator. You should be satisfied with the answers before you agree to be in the study.

The purpose of this research is to understand the relationship characteristics that affect people’s perception of their marriage during the transition to the empty-nest phase of their relationship. Approximately 50 couples, or 100 individuals who are in the empty-nest phase of their relationship will participate in the study. The study will last approximately 2 hours. The study procedure includes completing a series of questionnaires, engaging in videotaped interactions, and providing saliva samples. The questionnaires ask you to provide demographic information and to indicate your feelings about your relationship with your spouse during the transition to the empty-nest phase of your relationship. The videotaped interactions ask you to reflect with your spouse on this transition, to discuss some times of conflict during this transition, and to reflect on your happiest moments since this transition. You will also be asked to provide a total of six saliva samples that will be tested for cortisol, a hormone that measures stress. You will receive a $25 gift card to a national retailer as compensation for your participation in this study.

Your participation in this study is voluntary. Although answering every question is preferable, you have the right to skip any questions that you do not want to answer. You also have the right to stop participating at any time prior to the completion of the study. If you withdraw from the study before data collection is completed your data will be removed from the data set and destroyed. If you withdraw from the study before data collection is completed, you will still receive compensation for your involvement in the study.
Appendix D, continued

This research is confidential. Confidential means that the research records will include some information about you. This information is kept confidential by limiting individual's access to the research data and keeping it in a secure location. If you agree to take part in the study, your name will only appear on this consent form, which will be stored separately from your questionnaires and other data. Questionnaires will be kept in a locked filing cabinet in the office of the principal investigator. There will be no way to link your responses back to you once your consent forms have been removed; therefore, data collection is confidential. Your interactions will be videotaped and even though your name will not be included in any of the videos, it might be possible for someone to identify you from your video image. To prevent this breach of confidentiality from occurring, the videos will be stored on a secure server accessible only to members of the research team. Thus, to the extent possible, your identity will be kept confidential. Any illegal activity reported in the questionnaires or recorded on video will not be transcribed, coded, or preserved in any way. The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated, unless you have agreed otherwise.

Sign below if you agree to being videotaped for this research study.

Subject’s Signature: _____________________________________     Date: ________________

Risks associated with participation in this study are limited, but might include nervousness, embarrassment, or self-consciousness stemming from being videotaped, or potential emotional distress resulting from increased reflection on your romantic relationship. There may not be any specific benefits that you will gain by participating in this research; however, this study will be beneficial to the community as a whole by providing insight into the empty-nest phase of marriage.

If you experience emotional distress or increased stress and anxiety about your relationship following your participation in this study, you are encouraged to seek counseling services. You can find a certified counselor in your area by searching the counseling directory of the American Counseling Association at the following web address:
http://www.counseling.org/Resources/CounselorDirectory/TP/Home/CT2.aspx

If you have any questions about the study procedures, you may contact the researcher, Mary E. Nagy at (609) 610-7436, or marynagy@rutgers.edu, or the faculty advisor on this project, Jennifer A. Theiss at (732) 932-7500 x8143, or at jtheiss@rutgers.edu. If you have any questions about your rights as a research subject, you may contact the Sponsored Programs Administrator at Rutgers University at:

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
Appendix D, continued

3 Rutgers Plaza

New Brunswick, NJ 08901-8559
Tel: 732-932-0150 ext. 2104
Email: humansubjects@orsp.rutgers.edu

Sign below if you agree to participate in this research study. Please give one signed copy of this form to the researcher conducting the study, and keep one for your records.

Subject’s Signature: ___________________________ Date: ______________

Investigator’s Signature: ___________________________ Date: ______________

This informed consent form and research protocol was approved by the Institutional Review Board for the Protection of Human Subjects at Rutgers University on XXXXXX and expires on XXXXXX.
Appendix E

Consent Form to be Video Taped

Title of Study: The Communicative and Physiological Manifestations of Relational Turbulence during the Empty-Nest Phase of Marital Relationships

Principal Investigator: Mary E. Nagy, ABD
4 Huntington St., New Brunswick, NJ 08901
Email: marynagy@eden.rutgers.edu
Phone: 609-610-7436

Faculty Advisor: Jennifer A. Theiss, Ph.D.
4 Huntington St., New Brunswick, NJ 08901
Email: jtheiss@rutgers.edu
Phone: 732-932-7500 ext. 8143

You have already agreed to participate in a research study entitled: The Communicative and Physiological Manifestations of Relational Turbulence during the Empty-Nest Phase of Marital Relationships conducted by Mary E. Nagy and Dr. Jennifer Theiss. We are asking for your permission to allow us to videotape your interactions with your spouse as part of that research study.

The recording(s) will primarily be used for analysis by the research team. Some interactions in some instances may be used for academic purposes at professional conferences. The recording(s) will include no personal identifying information other than your facial image. Your name will not appear in the video.

During data collection, the recording(s) will be stored in a locked filing cabinet in the Principal Investigator’s locked office with no link to your identifying information. When data collection is complete, all videos will be converted to an electronic format and stored on a secure server that is password protected. Only members of the research team will have the password necessary to view the videos. The videos will be retained for a period of three years, at which point they will be destroyed.

Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

Name (Print) ____________________________________________
Participant Signature ___________________________ Date __________________________
Principal Investigator Signature __________________________ Date __________________________
This questionnaire is designed to assess your thoughts and feelings about your marriage since your children have left home. You will be asked a number of questions about how you think and feel about your relationship with your spouse.

As you complete the questions in this survey, keep in mind that there are no right or wrong answers. Just try to answer the questions as honestly as possible. If you have any questions or difficulties, please talk to the researcher conducting this study:

YOUR ANSWERS ON THIS QUESTIONNAIRE ARE STRICTLY CONFIDENTIAL.

YOUR SPOUSE WILL NOT SEE YOUR RESPONSES TO THIS QUESTIONNAIRE.
To begin, we would like to obtain some background information and learn more about your relationship history. Please answer the following questions to best of your ability.

1. What is your sex? *Please mark one:* Male Female

2. What was your age on your last birthday in years? ______________

3. What is your ethnicity? *Please mark all that apply:*
   - ___ African American
   - ___ Asian / Pacific Islander
   - ___ Caucasian / White
   - ___ Hispanic
   - ___ Indian
   - ___ Native American
   - ___ Middle Eastern
   - ___ Other _________________

4. Are you currently employed?  
   - ___ Yes  ___ No
   *If YES: How many hours do you work in an average week? ___ Hours per week*

For the remainder of the questions in this survey, please answer each question with regard to your relationship with your current spouse. Please write your spouse’s initials in the box provided.
The remainder of this questionnaire should be completed in reference to this individual, whom we will refer to as your “spouse.”

5. How long have you and your spouse been legally married? _____ Years

6. Do you and your spouse have children together? _____ Yes _____ No
   
   If YES: How many children do you have?: _____ Children
   
   How many are currently living in your home?: _____ Children
   
   How many are NOT currently living in your home?: _____ Children
   
   Please indicate the age(s) and gender(s) of the children not living with you:
   
  ________________________________________________________
   
   _________________________________________________________
   
   _________________________________________________________
   
   _________________________________________________________
   
   How long ago in months did your last child leave home? _____ months
Please describe any ways in which your marital relationship has changed now that all of your children have left the home.

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

It’s normal for people to have questions about their romantic relationships. People may experience uncertainty about their OWN thoughts, feelings, or behaviors; uncertainty about their PARTNER’S thoughts, feelings, or behaviors; or uncertainty about the NATURE OF THEIR RELATIONSHIP ITSELF. Please describe any questions or uncertainties you have experienced about yourself, your partner, or your relationship now that all of your children have left the home.

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
Sometimes relationship partners get in each other’s way and make it harder for one another to accomplish each other’s goals. Please describe ways that your partner has made it harder to complete your personal goals, activities, and routines now that all of your children have left the home.

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________
Please circle the number that best indicates your agreement with each statement.

1. My spouse interferes with whether I achieve the everyday goals I set for myself ................................................. 1 2 3 4 5 6
2. My spouse helps me in my efforts to make plans .................................................. 1 2 3 4 5 6
3. My spouse interferes with the amount of time I spend with my friends.......... 1 2 3 4 5 6
4. My spouse helps me to do the things I need to do each day .................... 1 2 3 4 5 6
5. My spouse interferes with my ability to use my time well ......................... 1 2 3 4 5 6
6. My spouse helps me in my efforts to spend time with my friends ............. 1 2 3 4 5 6
7. My spouse interferes with how much time I devote to my work ............... 1 2 3 4 5 6
8. My spouse helps me to achieve the everyday goals I set for myself ............ 1 2 3 4 5 6
9. My spouse interferes with the things I need to do each day .......................... 1 2 3 4 5 6
10. My spouse helps me to use my time well .......................................................... 1 2 3 4 5 6
Please circle the number that indicates how you feel about each statement as a representation of how you feel about your spouse.

1  2  3  4  5  6  7  8  9
Not at all true   Moderately true
Definitely true

1. I feel that I could confide in my spouse about virtually everything ..................1 2 3 4 5 6 7 8 9
2. I would do anything for my spouse.................................................1 2 3 4 5 6 7 8 9
3. If I couldn’t be with my spouse, I would feel miserable .........................1 2 3 4 5 6 7 8 9
4. If I am lonely, my first thought is to seek out my spouse........................1 2 3 4 5 6 7 8 9
5. One of my primary concerns is my spouse’s welfare................................1 2 3 4 5 6 7 8 9
6. I would forgive my spouse for practically anything ................................1 2 3 4 5 6 7 8 9
7. I feel responsible for my spouse’s well being.....................................1 2 3 4 5 6 7 8 9
8. I would enjoy being confided in by my spouse ....................................1 2 3 4 5 6 7 8 9
9. It would be hard for me to get along without my spouse......................1 2 3 4 5 6 7 8 9
Please CIRCLE the number to indicate your response to each item.

1  2  3  4  5  6  7
NOT AT ALL EXTREMELY

Not at All       Extremely

1. How satisfied are you with your marriage? .............................................................1 2 3 4 5 6 7
2. How committed are you to your marriage? .............................................................1 2 3 4 5 6 7
3. How pleased are you with your marriage? .............................................................1 2 3 4 5 6 7
4. How passionate is your marriage? .............................................................1 2 3 4 5 6 7
5. How willing are you to maintain your marriage? .............................................................1 2 3 4 5 6 7
6. How content are you with your marriage? .............................................................1 2 3 4 5 6 7
7. How dedicated are you to your marriage? .............................................................1 2 3 4 5 6 7
8. How much physical intimacy is in your marriage? ........................................1 2 3 4 5
   6 7

9. How much passion is in your marriage? .....................................................1 2 3 4 5
   6 7

10. How happy are you with your marriage? ..................................................1 2 3 4 5
    6 7

11. How devoted are you to your marriage? ..................................................1 2 3 4 5
    6 7

12. How sexually intense is your marriage? ..................................................1 2 3 4 5
    6 7
Please tell me how often you have felt this way during the past week.

<table>
<thead>
<tr>
<th></th>
<th>1 RARELY OR NONE</th>
<th>2 SOME OR A LITTLE</th>
<th>3 OCCASIONALLY</th>
<th>4 MOST OR ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OF THE TIME</td>
<td>OF THE TIME</td>
<td>OR A MODERATE AMOUNT</td>
<td>OF THE TIME</td>
</tr>
<tr>
<td></td>
<td>(LESS THAN 1 DAY)</td>
<td>(1-2 DAYS)</td>
<td>(3-4 DAYS)</td>
<td>(5-7 DAYS)</td>
</tr>
</tbody>
</table>

1. I was bothered by things that usually don’t bother me ........................................ 1 2 3
4
2. I did not feel like eating; my appetite was poor ................................................... 1 2 3
4
3. I felt like I could not shake off the blues, even with help from my family or friends ........................................ 1 2 3
4
4. I felt I was just as good as other people ................................................................. 1 2 3
4
5. I had trouble keeping my mind on what I was doing ................................................. 1 2 3
4
6. I felt depressed ........................................................................................................... 1 2 3
4
7. I felt that everything I did was an effort ....................................................................... 1 2 3
4
8. I felt hopeful about the future ...................................................................................... 1 2 3
4
9. I thought my life had been a failure ............................................................................... 1 2 3
4
10. I felt fearful .......................................................... 1 2 3
4
11. My sleep was restless.......................................................... 1 2 3
4
12. I was happy .............................................................. 1 2 3
4
13. I talked less than usual ..................................................... 1 2 3
4
14. I felt lonely ................................................................. 1 2 3
4
15. People were unfriendly .................................................... 1 2 3
4
16. I enjoyed life ............................................................... 1 2 3
4
17. I had crying spells .......................................................... 1 2 3
4
18. I felt sad................................................................. 1 2 3
4
19. I felt that people dislike me.......................................... 1 2 3
4
20. I could not get “going”................................................ 1 2 3
4
It’s normal for spouses to have questions about different aspects of their marriage. The items on this page ask how certain you are about aspects of your marriage. Please CIRCLE your answer using the following scale:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPLETELY</td>
<td>MOSTLY</td>
<td>SLIGHTLY</td>
<td>SLIGHTLY</td>
<td>MOSTLY</td>
<td>COMPLETELY</td>
</tr>
<tr>
<td>OR ALMOST</td>
<td>UNCERTAIN</td>
<td>MORE</td>
<td>MORE</td>
<td>CERTAIN</td>
<td>OR</td>
</tr>
<tr>
<td>COMPLETELY</td>
<td>UNCERTAIN</td>
<td>THAN</td>
<td>THAN</td>
<td>ALMOST</td>
<td>COMPLETELY</td>
</tr>
<tr>
<td>UNCERTAIN</td>
<td>THAN</td>
<td>CERTAIN</td>
<td>ALMOST</td>
<td>COMPLETELY</td>
<td>CERTAIN</td>
</tr>
</tbody>
</table>

**HOW CERTAIN ARE YOU ABOUT . . .**

Uncertain

**Certain**

1. how you feel about your marriage? ................................1 2 3 4 5 6
2. your goals for the future of your marriage? .............................1 2 3 4 5 6
3. your view of your marriage? ...........................................1 2 3 4 5 6
4. how important your marriage is to you? ..............................1 2 3 4 5 6
5. your spouse’s view of your marriage? ................................1 2 3 4 5 6
6. how important your marriage is to your spouse? ........................1 2 3 4 5 6
7. your spouse’s goals for the future of your marriage? ................1 2 3 4 5 6
8. how your spouse feels about your marriage? ..........................1 2 3 4 5 6
9. the current status of your marriage? ...................................1 2 3 4 5 6
10. how you can or cannot behave around your spouse? ..................1 2 3 4 5
11. the definition of your marriage? ..............................................................1 2 3 4 5

12. the future of your marriage? .................................................................1 2 3 4 5

13. your spouse’s loyalty to you? .................................................................1 2 3 4 5

14. your spouse’s faithfulness to you? ...........................................................1 2 3 4 5

15. how much you can trust your spouse? .....................................................1 2 3 4 5

16. your spouse’s fidelity to you? .................................................................1 2 3 4 5

17. how much physical intimacy you should have your spouse? ...............1 2 3 4 5

18. how to communicate well with your spouse? .........................................1 2 3 4 5

19. how to communicate effectively with your spouse? ..............................1 2 3 4 5

20. how to best communicate with your spouse? .........................................1 2 3 4 5

21. how often you and your spouse should have sex? ................................1 2 3 4 5

22. how to have a satisfying sexual relationship? ........................................1 2 3 4 5

23. how to please your partner sexually......................................................1 2 3 4 5
Please circle the number that best corresponds with how much you **DISAGREE OR AGREE**

with the following items as descriptions of your relationship today.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRONGLY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DISAGREE</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>STRONGLY</strong></td>
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</tr>
<tr>
<td><strong>AGREE</strong></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**AT THE PRESENT TIME, THIS RELATIONSHIP IS . . .**

Disagree ↔ Agree

1. exciting ................................................................. 1 2 3 4 5 6
2. chaotic ................................................................. 1 2 3 4 5 6
3. turbulent .............................................................. 1 2 3 4 5 6
4. in turmoil ............................................................. 1 2 3 4 5 6
5. exhilarating ........................................................... 1 2 3 4 5 6
6. tumultuous .............................................................. 1 2 3 4 5 6
7. hectic ................................................................. 1 2 3 4 5 6
8. frenzied ................................................................. 1 2 3 4 5 6
9. thrilling ................................................................. 1 2 3 4 5 6
10. overwhelming .......................................................... 1 2 3 4 5 6
11. stressful .............................................................. 1 2 3 4 5 6
The following items ask you to reflect on your feelings since becoming empty-nesters (since your children have moved out of your home). Please circle the number that best indicates how much you experienced each of these emotions in the past week. Use the following scale:

Please mark the number that corresponds with HOW MUCH you felt these emotions in your relationship during the PAST WEEK.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOT AT ALL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A LOT</td>
</tr>
</tbody>
</table>

*I FELT.*

- 1. scared ........................................................................... 1 2 3 4 5 6
- 2. sad .............................................................................. 1 2 3 4 5 6
- 3. happy ........................................................................... 1 2 3 4 5 6
- 4. mad .............................................................................. 1 2 3 4 5 6
- 5. excited .......................................................................... 1 2 3 4 5 6
- 6. gloomy ........................................................................... 1 2 3 4 5 6
- 7. frustrated ...................................................................... 1 2 3 4 5 6
- 8. afraid ............................................................................ 1 2 3 4 5 6
- 9. depressed ...................................................................... 1 2 3 4 5 6
- 10. angry ........................................................................... 1 2 3 4 5 6
- 11. glad ............................................................................. 1 2 3 4 5 6
- 12. frightened .................................................................... 1 2 3 4 5 6
On the following pages we will ask you to identify and describe five (5) behaviors or personality characteristics of your partner that cause you to feel irritated or annoyed, or that cause conflict in your relationship. Following your description of each irritation you will be asked two questions regarding your perceptions of the behavior or characteristic.

1. In the space provided below, please describe one behavior or personality characteristic of your spouse that causes you to feel irritated or annoyed, or that causes conflict in your relationship.

___________________________________________________________________________
_______________________________________________

With this irritation in mind, for each of the following statements please circle the number that best indicates the degree to which you agree with the statement provided.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRONGLY DISAGREE</td>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

1a. This behavior or characteristic is a problem ........................................
1b. This behavior or characteristic threatens our relationship .................

2. In the space provided below, please describe one behavior or personality characteristic of your spouse that causes you to feel irritated or annoyed, or that causes conflict in your relationship. Then, using the same scale as above, please circle the number that best indicates the degree to which you agree with the statement provided.

___________________________________________________________________________
_______________________________________________

Disagree ↔ Agree

2a. This behavior or characteristic is a problem ........................................
2b. This behavior or characteristic threatens our relationship .................
3. In the space provided below, please describe one behavior or personality characteristic of your spouse that causes you to feel irritated or annoyed, or that causes conflict in your relationship. Then, using the same scale as above, please circle the number that best indicates the degree to which you agree with the statement provided.

________________________________________________________________________

Disagree ↔ Agree

3a. This behavior or characteristic is a problem ....................................... 1 2 3 4 5 6 7
3b. This behavior or characteristic threatens our relationship .................... 1 2 3 4 5 6 7

4. In the space provided below, please describe one behavior or personality characteristic of your spouse that causes you to feel irritated or annoyed, or that causes conflict in your relationship. Then, using the same scale as above, please circle the number that best indicates the degree to which you agree with the statement provided.

________________________________________________________________________

Disagree ↔ Agree

4a. This behavior or characteristic is a problem ....................................... 1 2 3 4 5 6 7
4b. This behavior or characteristic threatens our relationship .................... 1 2 3 4 5 6 7

5. In the space provided below, please describe one behavior or personality characteristic of your spouse that causes you to feel irritated or annoyed, or that causes conflict in your relationship. Then, using the same scale as above, please circle the number that best indicates the degree to which you agree with the statement provided.

________________________________________________________________________
Disagree ↔ Agree

5a. This behavior or characteristic is a problem ........................................1 2 3 4 5 6 7
5b. This behavior or characteristic threatens our relationship ...................1 2 3 4 5 6 7
On this page, we would like you to reflect on the degree to which you communicate with your spouse about relationship issues. For each of the following statements, please circle the number that best indicates your level of agreement using the scale below.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRONGLY DISAGREE</td>
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<td></td>
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<tr>
<td>STRONGLY AGREE</td>
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</tbody>
</table>

1. I have explicitly told my partner about behaviors that irritate me……..1 2 3 4 5 6
2. I am usually explicit about my uncertainty in this relationship………1 2 3 4 5 6
3. I feel that I could openly discuss any topic with my partner…………1 2 3 4 5 6
4. I would be comfortable approaching my partner to talk about anything…………………………………………………………1 2 3 4 5 6
5. Uncertainty in the relationship is not a topic that my partner and I discuss openly…………………………………………………………1 2 3 4 5 6
6. My partner and I always communicate directly with one another……1 2 3 4 5 6
7. I have had a direct conversation with my partner about my irritations….1 2 3 4 5 6
8. I have never openly told my partner about things that annoy me………1 2 3 4 5 6
9. I communicate openly with my partner about things that bother me……1 2 3 4 5 6
10. My partner and I have never directly discussed our uncertainty about this relationship……………………………………………………………1 2 3 4 5 6
11. I can openly talk about my uncertainty with my partner………………1 2 3 4 5 6
12. My partner and I are quite explicit in our communication with one another……………………………………………………………1 2 3 4 5 6
Conflict is a natural feature of romantic relationships. In the space below please identify up to 5 conflict-inducing topics between you and your spouse. Focus on those conflict topics that occur frequently and focus on the importance of the conflict to you and to your marriage.

1. __________________________________________________________

2. __________________________________________________________

3. __________________________________________________________

4. __________________________________________________________

5. __________________________________________________________

Reflecting on these conflicts, put an asterisk (*) next to the 1 or 2 topics that occur most frequently.
We would like to know how much you have ACTIVELY AVOIDED or ACTIVELY DISCUSSED various topics with your spouse DURING THE PAST WEEK.

<table>
<thead>
<tr>
<th>Actively Avoided</th>
<th>Actively Discussed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

DURING THE PAST WEEK, WE HAVE ACTIVELY AVOIDED OR ACTIVELY DISCUSSED:

1. our view of this relationship ............................................................. 1 2 3 4 5 6
2. our sexual desires ................................................................................ 1 2 3 4 5 6
3. our feelings for each other ................................................................... 1 2 3 4 5 6
4. the future of this relationship .............................................................. 1 2 3 4 5 6
5. our satisfaction with our relationship ...................................................... 1 2 3 4 5 6

Now, we would like to know how much you WANTED TO TALK ABOUT various topics with your partner DURING THE PAST WEEK.

<table>
<thead>
<tr>
<th>Not at All</th>
<th>A Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>

DURING THE PAST WEEK, I HAVE WANTED TO TALK WITH MY SPOUSE ABOUT . . .

<table>
<thead>
<tr>
<th>Not at All</th>
<th>A Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>

1. our view of this relationship ............................................................. 1 2 3 4 5 6
2. our sexual desires ................................................................................ 1 2 3 4 5 6
3. our feelings for each other ................................................................... 1 2 3 4 5 6
4. the future of this relationship .............................................................. 1 2 3 4 5 6
5. our satisfaction with our relationship ...................................................... 1 2 3 4 5 6
On this page, we would like to know what you EXPECT the OUTCOMES MIGHT BE if you had a conversation with your spouse about the nature of your relationship. In other words, we would like to know what you think would happen if you discussed your relationship with your spouse.

Having a conversation about the nature of our relationship would...

<table>
<thead>
<tr>
<th>Disagree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. threaten the relationship</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>2. be embarrassing for me</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>3. be good for the relationship</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>4. be threatening to me</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>5. make me feel vulnerable</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>6. have a positive effect on the relationship</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>7. damage my image</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>8. make me feel embarrassed</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>9. have a negative effect on the relationship</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>10. make the relationship better</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>11. make me feel threatened</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>12. damage the relationship</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>
We would like you to reflect on how responsive your partner typically is during conversations about difficult topics. For each of the following statements, please circle the number that best indicates your level of agreement using the scale below.

1. My partner doesn’t really understand my wants and needs…...
   1    2    3    4    5     6    7    8   9
2. My partner really listens to me………………………………
   1    2    3    4    5     6    7    8   9
3. My partner encourages me to pursue my goals………………
   1    2    3    4    5     6    7    8   9
4. My partner is willing to work toward my goals and aspirations..
   1    2    3    4    5     6    7    8   9
5. My partner shows interest in what I am thinking and feeling…..
   1    2    3    4    5     6    7    8   9
6. My partner never puts my needs before his/her own…………
   1    2    3    4    5     6    7    8   9
7. My partner seems to ignore the things that are most important to me...
   1    2    3    4    5     6    7    8   9
8. My partner is responsive to my needs……………………..
The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NEVER</td>
<td>ALMOST</td>
<td>SOMETIMES</td>
<td>FAIRLY</td>
<td>VERY</td>
</tr>
<tr>
<td></td>
<td>NEVER</td>
<td></td>
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<tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>IN THE LAST MONTH, HOW OFTEN HAVE YOU...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. been upset because of something that happened unexpectedly? 0 1 2 3 4
2. felt that you were unable to control the important things in your life? 0 1 2 3 4
3. felt nervous and “stressed”? 0 1 2 3 4
4. felt confident about your ability to handle your personal problems? 0 1 2 3 4
5. felt that things were going your way? 0 1 2 3 4
6. found that you could not cope with all the things that you had to do? 0 1 2 3 4
7. been able to control irritations in your life? 0 1 2 3 4
8. felt that you were on top of things? 0 1 2 3 4
9. been angered because of things that were outside of your control? 0 1 2 3 4
10. felt difficulties were piling up so high that you could not overcome them? 0 1 2 3 4

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

PLEASE GIVE YOUR QUESTIONNAIRE TO THE RESEARCHER.
References


CURRICULUM VITAE

Mary E. Nagy

Education

B. A.  2004  Rutgers, The State University of New Jersey
        New Brunswick, NJ
M. S.  2005  Shippensburg University
        Shippensburg, PA
Ph. D. 2011  Rutgers, The State University of New Jersey
        New Brunswick, NJ

Teaching Experience

Rutgers University, 2011-Present.
Middlesex County College, 2007.

Courses Taught Include:
- Introduction to Communication
- Communication Theory
- Interpersonal Communication Processes
- Fundamentals of Public Speaking
- Communication Research
- Mediated Communication Theory
- Persuasive Communication
- Public Speaking
- Independent Study in Communication
- Introduction to Human Communication

Publications

relationship characteristics and reactions to marital sexual intimacy. *Journal of Social
and Personal Relationships*, 27, 1089-1109.