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MAKING A TREATMENT DECISION FOR BREAST CANCER:
ASSOCIATIONS AMONG MARITAL QUALITIES, COUPLE COMMUNICATION,
AND BREAST CANCER TREATMENT DECISION OUTCOMES

A Dissertation in
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by

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The aim of this dissertation was to explain how marital qualities and couple communication influence treatment decision outcomes for a hypothetical diagnosis of breast cancer. I addressed this issue by integrating the relational turbulence model, functional theory, and literature on information exchange in small groups to develop specific predictions about the associations among relationship characteristics, couple communication, and treatment decision outcomes. Specifically, I hypothesized that decision-making quality would be positively associated with completing the fundamental tasks specified by functional theory (H1) and information sharing (H2), but negatively associated with information bolstering or discounting (H3b). Also, I predicted that information bolstering or discounting would be negatively associated with decision satisfaction (H3a). In addition, I reasoned that relational uncertainty (H4) would be negatively associated with fulfilling the functional theory tasks, information sharing, and information bolstering or discounting, but a partner’s interference in everyday activities (H5) would be positively associated with these behaviors.

This dissertation employed a cross-sectional, two-group observational study design to test my hypotheses. Specifically, I had 113 marital dyads and committed domestic partners (N = 226) respond individually to a number of communication and relationship measures. Then, couples were assigned to either the functional theory condition or the control condition and were to make a decision about a treatment for a hypothetical diagnosis of breast cancer. Finally, individuals reflected on their treatment selection interactions. This research design allowed me to examine how mechanisms identified by the relational turbulence model and functional theory shape dyadic decision making.
Although the findings for the associations among relational turbulence, communication functions, and information exchange between partners were not always consistent with my predictions, the results provided initial support for the use of marital qualities and couple communication as predictors for treatment decision outcomes. Results showed that couples who developed criteria generally perceived the quality of their decisions to be lower, but couples who assessed solutions perceived the quality of their decision to be higher. Although not statistically significant (.05 < \( p \) < .10), couples in which females shared more information were more likely to choose mastectomy surgery, rather than lumpectomy surgery. Also, individuals’ bolstering was positively associated with subjective decision quality, but only approached a significantly positive association with decision satisfaction. Couples in which males bolstered more tended to choose mastectomy surgery, rather than lumpectomy surgery. Female relationship uncertainty positively predicted developing criteria, whereas male relationship uncertainty negatively predicted developing solutions. When information sharing was the outcome, female relationship uncertainty positively predicted male information sharing. Finally, a male’s perceptions of partner interference negatively predicted female bolstering, and the path between male’s perceptions of partner interference and male bolstering approached significance.

This dissertation makes theoretical contributions to the relational turbulence model and functional theory by demonstrating how relationship characteristics and couple communication contribute to treatment decision outcomes. For example, because partners in this study role-played being diagnosed with breast cancer or having a partner who was diagnosed with breast cancer, I was able to explore how relational uncertainty or a partner’s interference might influence communication from different vantage points. In addition, this dissertation provides
preliminary evidence that suggests relationship circumstances among group members might shape if a group is able to address the fundamental tasks put forth by functional theory.
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CHAPTER 1

In the United States, breast cancer is the second leading cause of cancer-related deaths in women and the second most common cancer in women, after skin cancer (American Cancer Society, 2009). Currently, 1 in 8 women born in the United States will develop breast cancer at some point in their lives, compared with a 1 in 10 chance in the 1970s (Ries et al., 2006). Moreover, roughly 192,370 new cases of invasive breast cancer will be identified in 2009 in the United States alone, where it is estimated that there will be 40,170 breast cancer deaths this year. Not surprisingly, curing breast cancer and limiting both its physical and psychological effects has garnered substantial research attention. This dissertation follows in that tradition.

Social scientific research involving breast cancer experiences has emphasized the distress associated having the disease (Compas et al., 1994; Given & Given, 1993; Keitel, Zevon, Rounds, Petrelli, & Karakousis, 1990; Northouse, Laten, & Reddy, 1995b; Northouse & Swain, 1987; Omne-Ponten, Holmberg, Bergstrom, Sjoden, & Burns, 1993). Specific lines of research have identified stress associated with how women come to terms with the diagnosis (Hilton, 1988; Ohaeri, Campbell, Ilesanmil, & Ohaeri, 1998), understand treatment options (Ashing, Padilla, Tejero, & Kagawa-Singer, 2003; Hilton, 1988), and experience changes to their body and their health (Ashing et al., 2003; Ohaeri et al., 1998). In addition, patients express concern about their life in general (Ashing et al., 2003; Hilton, 1988; Ohaeri et al., 1998), and they encounter changes in patterns of interdependence within their household (Sormanti & Kayser, 2000), to work, family, and social roles (Coristine, Crooks, Grunfeld, Stonebridge, & Christie, 2003; Northouse, Templin, & Mood, 2001; Vickberg, 2003), and their identity (Weber & Solomon, 2008). This body of work suggests that breast cancer patients, their partners, family members, and friends encounter a variety of difficulties over the course of their diagnosis.
One particular stressor that breast cancer patients encounter at different points throughout their illness is associated with making medical decisions (Hilton, 1988; Pierce, 1993). Medical decisions can include activities such as choosing a doctor or medical facility, acquiring a second opinion, selecting a specific treatment option, or revising a treatment regimen due to health changes or other life circumstances. Frequently, patients make medical decisions based on their disease status, the treatments they are most comfortable undergoing, and the impact that both the disease and the treatments will have on their life (Halkett, Arbon, Scutter, & Borg, 2005). For example, different medical facilities have different types of treatment available (Nattinger, Gottlieb, Veum, Yahnke, & Goodwin, 1992; Schroen, Brenin, Kelly, Knaus, & Slingluff Jr, 2005), which can be confounded with insurance restrictions (Taira, Safran, Seto, Rogers, & Tarlov, 1997). Getting a second opinion exposes patients to the expertise of multiple doctors or different types of doctors (e.g., surgeon, oncologist, radiologist), and findings show that roughly 20% of patients who seek a second opinion change their treatment plan (Clauson, Hsieh, Acharya, Rademaker, & Morrow, 2002). The magnitude of these decisions is reflected in the fact that differential mortality and survival rates are associated with different treatment options (Martin, Meyricke, O'Neill, & Roberts, 2007). Although making medical decisions can be a difficult task, patients must make these consequential selections throughout the trajectory of a disease.

The process that patients undergo when making a treatment decision is associated with various non-disease related outcomes. For example, aspects of the decision-making process have been associated with general patient satisfaction (Smith, Polis, & Hadac, 1981), satisfaction with the treatment (Lantz et al., 2005), and satisfaction with the treatment process (Bruera, Willey, Palmer, & Marguerite, 2002; Davey et al., 2002; Davison, Parker, & Goldenberg, 2004; Keating,
Guadagnoli, Landrum, Borbas, & Weeks, 2002; Mazur & Hickam, 1997). In addition, different communication patterns with medical personnel have been associated with increased behavioral compliance (Stewart et al., 1999), and have been shown to facilitate primary (i.e., reduction in symptoms) and secondary (i.e., patient recall of information) medical outcomes. For example, clinicians’ engagement in interactive informational support was associated with greater breast cancer knowledge and less treatment delay (Maly, Leake, & Silliman, 2003). Clarifying how patients make treatment selections and other medical judgments can help in identifying effective and efficient decision-making patterns for future patients.

Given the implications of medical decisions for both disease and non-disease related outcomes, the medical literature has focused on factors that affect decision-making processes. Research has revealed that patients experience cognitive information processing limitations when making decisions (Johnson, 1990; Meyer, Russo, & Talbot, 1995; Walsh & Hershey, 1993). For example, patients are often limited in their ability to manipulate and synthesize information (Brown & Park, 2002), to recall information (Kemper & Kemtes, 1999), to overcome restricted medical literacy (Teutsch, 2003), to understand technical language comprehension (Korsch, Gozzi, & Francis, 1968), and to interpret statistics (Lobb, Butow, Kenny, & Tattersall, 1999). Similarly, emotion reportedly modifies the ways in which information is processed and conceptualized (Carstensen & Fredrickson, 1998; Carstensen, Isaacowitz, & Charles, 1999; Mather & Carstensen, 2005). For instance, older adults tend to seek out and recall more positive information than their younger counterparts (Löckenhoff & Carstensen, 2007). Additionally, researchers have noted that patients vary in how involved they want to be in a treatment decision (Janz et al., 2004; Keating et al., 2002). In a similar vein, scholars over the past two decades have characterized interactions between providers and patients as moments in which medical
decisions can be either facilitated (Bertakis, Roter, & Putman, 1991; Ley, 1982; Ley, Bradshaw, Kincey, & Atherton, 1976; Siminoff & Step, 2005; Stewart, 1995; Willems, De Maesschalck, Deveugele, & De Measeneer, 2005) or hindered (Beckman & Frankel, 1984; Perloff, Bonder, Ray, Ray, & Simminoff, 2006; Sweeney & Bruera, 2002).

Although the medical literature has made relevant contributions to describing how decisions are made, this body of work focuses on decision making as an individual experience that affects treatment. Most patients are part of social networks that can include an intimate partner, children, parents, siblings, and extended relatives. These social networks are able to shape the patient’s medical experiences; for example, these networks can help one gather and organize information or they can leave such tasks up to the patient. In addition, family members will be shaped by the medical experiences; for instance, the demands of a particular treatment regimen may require people to modify their work schedule in order to travel with the patient to appointments. Given the consequential nature of decisions for the patient, their intimate partner, and their family members, research needs to contextualize decision making within the social network in which decisions are being made.

Research centering on the marital dyad highlights how this relationship shapes and is shaped by a diagnosis of breast cancer. For example, Northouse (1988) explored the ways in which social support between marital dyads encouraged psychosocial adjustment to a breast cancer diagnosis for both partners. Other researchers have investigated the effects a breast cancer diagnosis has on sexual intimacy, relationship satisfaction, and physical functioning (Andersen, Carpenter, Yang, & Shapiro, 2007). Weber and Solomon (2007) found that relational uncertainty and a partner’s interference were positively associated with negative feelings about stressors associated with breast cancer and the directness of communication about those stressors, and
negatively associated with the positivity of communication about those stressors. By comparison, there is a dearth of research that explores the ways in which marital interactions facilitate or hinder medical decision making. In short, research has revealed how the social context within which a cancer diagnosis is experienced has implications for the patient and their loved ones, in general, but research on the contributions that significant others make to medical decision making is limited.

The goal of this dissertation is to document how the social context shapes medical decision making. Specifically, this dissertation details the ways in which a treatment decision for breast cancer is influenced by marital communication and relationship characteristics. In particular, I hope to gain insight into how communication can be used to emphasize or trivialize information that is being used to make a treatment decision for breast cancer. Moreover, I intend to document how these communicative acts map onto satisfaction with the decision-making process and quality of the decision itself.

Conceptualizing Decision Making as a Process

Looking to the scholarly literature on marital decision making reveals that both the task and the outcomes are altered when multiple persons contribute to a decision. Most research in this area has focused on the matter to be decided (e.g., purchasing items, Brown & Miller, 2002; Burns & Granbois, 1977; Davis, 1970; moving, Challiol & Mignonac, 2005, entertainment activities, Bonds-Raacke, 2006; division of labor, Parkman, 2004). A related body of research concerning marital decision making focuses on how characteristics of individuals or partners’ associations affect decision-making behavior (e.g., power, Babcock, Waltz, Jacobson, & Gottman, 1993; Bonds-Raacke, 2006; control, Rabin, 1997; dominance, Munsinger, Weber, & Hansen, 1975; agreement orientation, Hsu, Tseng, Ashton, McDermott, & Char, 1985; Godwin
& Scanzoni, 1989; involvement, Burns & Granbois, 1977; gender roles, Davis, 1970; Davis & Rigaux, 1974). Minimal work, however, has concentrated on understanding decision making among marital couples as a process. Exceptions include Scanzoni and Godwin (1990), who determined that negotiation and consensus behavior predict effective and acceptable outcomes, and Gottman and Krokoff (1989), who identified interaction patterns, such as anger exchanges, that lead to marital deterioration. Although these studies aim to understand the process of making marital decisions, the former manuscript involved a unique focus for the authors and the latter body of literature focuses primarily on conflict behavior, with a secondary interest in decision-making activities. Thus, whereas the marital decision-making literature has made strides toward understanding how couples negotiate resolutions, this body of literature fails to document decision-making processes.

Because research on medical and marital decision-making processes, per se, is limited, I turned to the small group literature to formulate a more sophisticated conception of decision making. This body of literature includes an array of theories aimed at understanding how small groups negotiate decisions. For example, research endeavors include efforts to document the ways in which input variables shape decision-making processes and decision outcomes (Pavitt & Curtis, 1994; Von Bertalanffy, 1950). Other scholars have explored the rules that are created and recreated within a group, which influence interaction patterns and facilitate adaptation to change within the group (Poole & DeSanctis, 1990). In addition, some research efforts have detailed how group functions and interactions influence decision-making behavior (Beebe & Masterson, 1997). The abundance of process theory in the small group literature aids in understanding the ways in which medical decision making is negotiated within marital dyads.
One theory from the small group literature that is particularly relevant to decision-making processes is Gouran and Hirokawa’s functional theory (1996). Functional theory proposes that “the likelihood of a group’s making an appropriate choice is at a maximum under conditions in which members” fulfill a number of conditions (1996, p. 76). One such condition includes the need to satisfy the following fundamental task requirements: (a) develop a sound understanding of the problem during the problem analysis, (b) establish evaluation criteria by which possible decisions will be evaluated, (c) generate realistic and acceptable alternative solutions, (d) evaluate the alternatives relative to their acceptability criteria as previously established, and (e) select the alternative most likely to have the desired characteristics. Functional theory asserts that the probability of selecting the most appropriate or most effective choice is guided by the group’s ability to achieve these aims. Moreover, communication is thought to be the conduit by which these tasks can be achieved. In this way, functional theory identifies the requisite conditions for effective decision making and suggests that communication contributes to those conditions.

The small group literature also identifies two specific ways that communication can be indexed: information bolstering or discounting and information sharing. Bolstering is understood as communicative acts that privilege information brought forth by another group member (Cruz, Boster, & Rodríguez, 1997). In other words, bolstering information places more value on that piece of information. Conversely, discounting occurs when other group members discredit information presented to the group (Cruz et al., 1997). For example, information that is discounted is devalued in comparison to other pieces of information that the group encounters. Information sharing behavior, which includes the quantity and the quality of information exchange, has received the most research attention, and it has been associated with member
expertise (Franz & Larson, 2002; Stewart & Stasser, 1995; Stasser, Vaughan, & Stewart, 2000), member status (Wittenbaum, 1998, 2000), information load (Stasser & Titus, 1987), the extent to which information is common knowledge (Stasser, Taylor, & Hanna, 1989), task instructions (Stasser & Stewart, 1992), and group size (Stasser et al., 1989). This research suggests that the composition of the group influences the group’s ability to stay on task and, therefore, meet the operations set forth by functional theory. In sum, bolstering or discounting and information sharing can be used conversationally to facilitate or inhibit decision-making negotiations.

In this dissertation, I adopt a functional perspective on medical decision making within marital dyads, and I consider how information sharing and bolstering or discounting contribute to decision outcomes. Functional theory highlights a process that can be used to facilitate effective decision making. By taking a process understanding of decision making, I emphasize the role communication plays in the conversational negotiation of choices. Additionally, the small group literature more generally identifies two broad communication behaviors that can be used to meet these requisite conditions: information sharing and bolstering or discounting. Together then, functional theory and the small group literature highlight the ways communication can facilitate or hinder medical decision making.

Predicting Decision-Making Communication

Although bolstering or discounting and information sharing have the potential to modify the decision-making process as posed by functional theory, this body of research lacks a strong theoretical lens to explain when or why these specific behaviors may arise. Turning to literature on couple communication provides a framework for understanding the conditions under which we would expect communicative bolstering or discounting, or information sharing between romantic partners. In particular, research on interpersonal communication and marital
Interactions has focused efforts on understanding the associations among relationship characteristics and communicative behavior.

Global qualities of marital relationships have been found to affect communication patterns, in general. For example, accurately interpreting nonverbal communication is associated with marital satisfaction (Kahn, 1970). And, marital satisfaction has been linked with improved communication skills (Burleson & Denton, 1997). On the other hand, a lack of self-verification within a marital relationship has been found to predict withdrawal patterns during marital conflict (Weger, 2005). Similarly, both emotional and cognitive jealousy have been associated with variation in communicative responses to jealousy (Webb, Warford, & Amason, 2005). In general, then, research has found that characteristics of a couple are associated with interaction patterns (Williamson & Fitzpatrick, 1985).

The relational turbulence model (Solomon & Knobloch, 2004) is a theory that identifies specific relationship qualities that affect communication experiences during times of transition; thus, it is especially relevant to the social context that characterizes couples coping with cancer. In particular, transitions are often characterized as responses to change (Marineau, 2005) in which individuals encounter varying degrees of instability throughout the adaptive process (Walker, 2001). Because instability may be due in part to the complex and multidimensional nature of transitions (George, 1993), scholars emphasize that moments of transition share a reciprocal relationship with a social context, such that transitions are both embedded within and shaped by their social context (Elmberger, Bolund, & Ltzén, 2000; Tomlinson, 1996). Accordingly, transitions present the opportunity for change to identities, roles, relationships, behaviors, or defining one’s self or one’s relationship (Berger & Bradac, 1982; Knobloch & Solomon, 1999). In other words, transcending though a transition involves both individual
change, as well as possible modifications to a social context within which the individual is experiencing the change.

The relational turbulence model provides an understanding of how moments of change in romantic relationships have the potential to elicit various communicative behaviors. In particular, the relational turbulence model suggests that increases in relational uncertainty and goal interference bring forth more extreme emotional, cognitive, and communicative reactions to relationship events (Solomon & Knobloch, 2001, 2004). Research supports this theorizing and has found that more extreme emotional experiences (Knobloch & Solomon, 2002; Knobloch, Solomon, & Cruz, 2001), cognitive appraisals (Knobloch & Solomon, 2005), and communication behaviors (Afifi & Burgoon, 1998; Knobloch & Carpenter-Theune, 2004; Knobloch & Solomon, 2003; Theiss & Solomon, 2006a) arise when people report heightened levels of relational uncertainty and goal interference. Thus, the theory points to global relationship qualities that may affect communication patterns, including those exhibited during decision-making tasks.

In this dissertation, I adopt the relational turbulence model as a theoretical framework for understanding how qualities of marital relationships influence communication during the process of making medical treatment decisions. In particular, the theory suggests that relational uncertainty and goal interference are two experiences that underlie periods of transition within intimate relationships. Moreover, the relational turbulence model provides insight into the relationship circumstances that may promote or undermine effective decision making between marital dyads.

Overview of the Dissertation
By applying the relational turbulence model to couples’ treatment decisions for breast cancer, I hope to clarify how interpersonal relationships and communication contribute to breast cancer treatment decision-making behavior. In the next chapter, I review the decision-making literature, including research from the medical, marital, and small group literatures, and I specify communication behavior that predicts decision-making activity. In Chapter 3, I review the model of relational turbulence (Solomon & Knobloch, 2004) as a theory that can be used to predict communicative behavior during decision making. By applying this model to the breast cancer treatment decision-making experience, Chapter 3 also presents hypotheses that are the focus of this dissertation. Chapter 4 describes a study designed to explore relationship issues and communication experiences associated with a couple’s treatment decision for breast cancer, and Chapter 5 reports the results of that study. To end, Chapter 6 discusses the findings, their implications, and directions for future research.
CHAPTER 2

The majority of contemporary theories of decision making developed from the prescriptive theory tradition (Beach & Connolly, 2005). This perspective was founded on the assumption that making a decision involves risk and is akin to making a bet when gambling. Also known as the gambling analogy (see Pascal, Bernoulli), prescriptive theorists forward that rational decision makers should select the option with the most appealing payoff, while also weighing the probability that the payoffs will come to fruition. As research on decision making developed, scholars began to adjust this metaphor to better represent how individuals actually make decisions. Specifically, scholars began to recognize that humans possess cognitive and emotional limitations (Simon, 1990), and that heuristics could be used to overcome these limitations (Collyer & Malecki, 1998; Tversky & Kahneman, 1974). Eventually, a naturalistic approach, which strives to understand the ways that people actually make decisions, was born. Perhaps because these approaches emphasize different aspects of decision making, different fields tend to privilege different perspectives in the effort to understand human behavior (Stevenson, Busemeyer, & Naylor, 1990). Accordingly, this chapter draws upon the medical decision making, marital decision making, and small group decision-making literatures to illuminate the processes at work when marital dyads make decision about breast cancer treatments. In the first section of this chapter, I overview patient decision-making behavior. Then, I review the literature on marital decision making. I conclude with a section that highlights relevant research on small group decision making; specifically, I review functional theory and discuss information sharing and bolstering and discounting.

Understanding Patient Decision-Making Behavior
As the medical field shifted from physician-centered to patient-centered (Eckman, 2001; Mead & Bower, 2000; Morgan, 2003), scholars began to tease out the complexities patients face when making medical decisions. Although making medical decisions is a necessary part of navigating the medical community, these judgments are stressful and difficult (Weber & Solomon, 2008). In particular, research highlights the uncertainty patients have about their disease (Hilton, 1988; Ohaeri et al., 1998), their knowledge about the disease (Ashing, et al., 2003; Hilton, 1988), and their knowledge about treatment options (Winkler & Smith, 2004). Moreover, patients frequently report dissatisfaction with the levels of information they receive about the nature of the disease, their prognosis, their treatment options, and the potential risks and outcomes of various treatments (Chaitchik, Kreitler, Shaked, Schwartz, & Rosin, 1992; Kiesler & Auerbach, 2006). Perhaps because of these shortcomings, research in the medical field on patient decision-making behavior emphasizes how information is received, processed, or used by patients. In the following subsections, I discuss intrapersonal, interpersonal, and external forces that shape patient decision making.

**Intrapersonal Forces**

As with many situations, people come to decision-making tasks with various cognitive strengths and weaknesses, experiences, goals, etc. In this section, I overview several prominent intrapersonal factors that have been linked with medical decision-making practices. I begin by highlighting several relevant cognitive processes. Then, I discuss the possible effects of emotion on decision making. To conclude this section, I clarify motivational and involvement patterns associated with this process.

*Cognitive processes.* Cognition involves the mental functions associated with a person’s ability to think, reason, and remember, and it includes processes such as recognition, learning,
interpretation, judging, or problem-solving. Initially, cognitive processes focus a patient toward the selection of information. Patients, who are diagnosed with different types of cancer, report that they gather information from a variety of sources, including physicians, partners, family members, television, radio, and the Internet (Basch, Thaler, Shi, Yakren, & Schrag, 2004). Through similar efforts, breast cancer patients have been reported to collect information about the disease, the disease trajectory, treatment options, and side effects of different treatments (Griggs et al., 2007). Although patients, in general, engage in information seeking behavior, age moderates these patterns. These patterns are relevant given that the risk of breast cancer increases with age. With regard to age and information seeking behavior then, several research studies have emphasized that older adults, as compared with younger adults, exhibit information selectivity (Rafaely, Dror, & Remington, 2006). In particular, older adults were found to use less information, spend more time viewing information, and review smaller chunks of information during a variety of decision-making tasks (Johnson, 1990; Meyer et al., 1995; Walsh & Hershey, 1993).

Although scholars are not yet certain why older adults hone in on less information than their younger counterparts, research suggests that it maybe because of natural declines in basic cognitive abilities or because older adults may use prior knowledge to assist with decision tasks. Consistent with the former assumption, evidence shows that older adults experience reductions in the speed of cognitive processing (Brown & Park, 2002) and working memory (Salthouse & Babcock, 1991), have greater difficulty recalling novel information (Morrell, Park, & Poon, 1989), use more economical and less cognitively taxing representations and processes (Dror, Schmitz-Williams, & Smith, 2005), experience problems when attention must be divided (Salthouse & Saults, 1987), and have trouble manipulating multiple dimensions of information.
(Brown & Park, 2002). On the other hand, there is evidence suggesting that older adults may simply rely on prior knowledge when solving problems (Berg, Strough, Calderone, Sansone, & Weir, 1998; Rafaely et al., 2006), which may reduce motivation to engage in extensive cognitive processing (Stuart-Hamilton & McDonald, 2001).

The association between cognitive decline and the use of prior knowledge has been linked to several relevant decision-making processes. For example, evidence reveals that older adults exhibit deficient reading comprehension (Kemper & Kemtes, 1999), experience poor recall of recently presented material (Kemper & Kemtes, 1999), and are more prone to comprehension errors when making decisions (Finucane et al., 2002). Although older adults tend to learn less information than their younger counterparts (regardless of the familiarity of the information), both age groups are able to learn less new information about a familiar, as opposed to unfamiliar, disease (Brown & Park, 2002). At the same time, older women who seek less information when making a treatment decision have outcomes equivalent to those of younger women (Meyer et al., 1995). The latter finding suggests that older women rely on prior knowledge rather than information seeking to guide decisions. Although future research is needed to tease out the nuances of cognitive processing and decision making, the general point that cognitive processes are central to decision making is supported.

*Information processing barriers.* One of the most basic processing barriers that patients encounter is health literacy deficiencies. According to Healthy People 2010, health literacy is “The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.” Research shows that patients with low literacy have a compromised ability to comprehend, retain, recall, and act on literary and numeric health related material (Schillinger et al., 2003). In turn, literacy
deficiencies lead to inaccurate or inappropriate self care, such as the misinterpretation of a routine instruction (e.g., do not eat 24 hours before surgery; Teutsch, 2003). Thus, low literacy levels can compromise patients’ ability to understand health related information, and leave them unable to make an informed treatment decision for themselves.

The use of technical language during discussions with patients can also be a barrier to making sound judgments (Korsch et al., 1968). Research shows that physicians underestimate their patients’ understanding of (Samora, Saunders, & Larson, 1962) or desire for medical information (Cegala, 1997), which leads physicians to provide less information to the patients (Seligmann, McGrath, & Pratt, 1957). Moreover, the information doctors provide is often encoded in jargon that patients to not readily understand. One reason that a communicative disconnect may be present between patients and physicians is the close tie between cancer treatment and clinical trials (Siminoff & Step, 2005). Given this association, physicians often use statistical language frequently (Lobb et al., 1999; Siminoff & Fetting, 1991; Siminoff, Ravdin, Colabianchi, & Sturm, 2000), which is difficult for lay persons to understand (Lobb et al., 1999). An inability to understand the technical jargon that physicians use leaves patients at a disadvantage when trying to negotiate the best treatment option for themselves.

**Affective and emotional influences.** Emotion is another intrapersonal factor linked to medical decision making. In particular, experiences of heightened emotion are thought to impede cognitive processes, which can therefore reduce a person’s ability to make sound judgments (Löckenhoff & Carstensen, 2007). Although some evidence highlights the ways in which fear and uncertainty pervade women’s decision-making experiences (Weber & Solomon, 2008), the role of emotion in medical decision making is more clearly explicated within Carstensen et al. (1999) socioemotional selectivity theory.
The socioemotional selectivity theory seeks to explain how individuals cope with the dissociation of their mind and their body. Socioemotional selective theory specifies that perceived limitations on the trajectory of one’s life leads to more salient goal hierarchies. Specifically, as individuals approach the end of life they seek to optimize the emotional meaning from life, as opposed to selecting other choices that may maximize long-term payoff in an uncertain future. Regardless of age, as people perceive their death to be closer, they will engage in activities that promote emotional well-being. Although the theory emphasizes that it is a person’s time perspective that instigates these goal shifts (Carstensen & Fredrickson, 1998), age-related motivation patterns have been consistently observed.

The logic of the theory suggests that adults nearing the end of life are likely to activate emotional well-being goals that could influence their decision-making ability. For example, older adults experience fewer negative emotions and tend toward more emotional gratification distortion (Mather & Carstensen, 2005). Specific to decision making then, older adults, in contrast to their younger counterparts, review and recall a greater proportion of positive, rather than negative, information (Löckenhoff & Carstensen, 2007). Importantly, Löckenhoff and Carstensen (2007) found that manipulating information-gathering goals eliminates the age related positivity biases experienced by elderly adults. Thus, this body of work implies that biases may be present because people nearing death privilege emotion goals, but also that it may be possible to activate other cognitive functions to eliminate the biases that arise from those affective goals.

Motivation and involvement with the decision process. Research shows that patients prefer shared or collaborative decision-making roles roughly 47% to 64% of the time (Janz et al., 2004; Keating et al., 2002); however, the percentage of patients who feel they had primary
responsibility for the decision following a consultation is estimated to range from 41% to 61% (Janz et al., 2004; Katz et al., 2005). Moreover, only about 35% of patients report experiencing a collaborative negotiation with their surgeon (Katz et al., 2005; Keating et al., 2002), and only about 38% of patients agree with the physician's assessment of how the treatment decision was made (Janz et al., 2004). Not surprisingly then, only an estimated 49% of women report that their actual decision-making role matches the role they desired; 25% have a less active role than desired, and 26% have a more active role than desired (Keating et al., 2002). These findings suggest that there is a disconnect between the decision-making roles that patients desire, the doctors’ perceptions of the roles they should play, and the actual roles that patients find themselves in.

Patients have reported a variety of motivations for seeking health information and for participating in a treatment decision, such as negotiating anxiety (Mellink, Dulmen, Wiggers, Spreeuwenberg, Eggermont, & Bensing, 2003), controlling outcomes (Grunfeld et al., 2006; Siminoff & Fetting, 1991), or feeling satisfied with the information that was provided (Edwards & Elwyn, 1999). For those women who actively participate in the decision-making process, evidence suggests that their interactions are more fruitful. For example, there is a positive association between how many questions a patient asks and how informed that patient is (Beisecker, 1990). In addition, patients who ask questions, request the opinion of medical personnel, express opinions, or state their preferences experience increased health outcomes (Kaplan, Greenfield, & Ware, 1989). Interestingly, patients who do not accept their physician’s recommendation for treatment are given more specific information about the benefits of the treatment (Siminoff & Fetting, 1991). And, changes to treatment decisions occur as a result of patients asking questions (Fisher, 1983). Although patients may seek information for a variety of
reasons, evidence suggests that those patients who are most active communicatively also have the most fruitful information exchanges.

Research indicates that preferences for involvement in the decision-making process is associated with a variety of socio-demographic characteristics and treatment related evaluations. For example, preferences for shared involvement are associated with higher education levels (Nekhlyudov et al., 2005), greater self-efficacy scores (Janz et al., 2004), younger ages (Nekhlyudov et al., 2005), and higher levels of satisfaction six months post surgery (Nekhlyudov et al., 2005). Patients who reject their physician’s treatment recommendation are more likely to be risk takers and rate the side effects of treatment as more severe (Siminoff & Fetting, 1991). Also, when women are externally motivated (e.g., have doubts about a practitioner’s care) to seek a second opinion, they score higher on trait anxiety measures, are less satisfied with their first specialist, and desire an opinion from a second specialist that differs from the first specialist (Mellink et al., 2003).

The treatment patterns among women who participate in the decision-making process are somewhat mixed. Although many women want a participatory role in their decision making, 74% of women want a recommendation from their surgeons, which they follow 94% of the time (Johnson, Roberts, Cox, Reintgen, Levine, & Parson, 1996). Moreover, 45% of women who make a decision alone undergo contralateral prophylactic mastectomy (CPM), whereas only 15% of women who share the decision with their doctor decided to undergo CPM (Nekhlyudov et al., 2005). Similarly, 27% of women who make a decision alone undergo a mastectomy; however, only 16.8% of women who share the decision receive a mastectomy (Katz et al., 2005). The research on motivation and involvement with decision-making processes emphasizes the preferential differences among women.
To summarize, this section has discussed a variety of intrapersonal forces that influence medical decision-making processes. Although some of the findings require a more nuanced exploration, patterns suggest cognitive and affective biases associated with increased age. In addition, women vary on their preference levels for involvement, but they are able to provoke more informationally fruitful interactions with medical personnel when seeking those exchanges. In the following section, I examine interpersonal factors that impact patient decision-making behaviors.

*Interpersonal Forces*

In contrast to the intrapersonal forces that reside within a particular patient, interpersonal forces involve patients’ interactions with other individuals who can and often do shape the patients’ decisions. In fact evidence indicates that when confronted with a medical condition, women tend to prefer personal sources of information (physician, nurse, friend, or relative) over written sources of information (Bilodeau & Degner, 1996). In particular, patients seek out medical personnel, relational partners, other family members (i.e., parents, children, or siblings), and friends when making a medical decision (Bilodeau & Degner, 1996). Each of these potential communication partners is discussed in the following sections.

*Interactions with physicians.* Communicating with a physician effectively (e.g., more question asking, more information giving, more affective behavior) is associated with positive patient outcomes such as greater satisfaction, increased adherence to treatment, increased knowledge, and enhanced psychosocial adjustment (Bertakis et al., 1991; Ley, 1982; Ley et al., 1976; Siminoff & Step, 2005; Stewart, 1995; Willems et al., 2005). Although the benefits of positive interactions with physicians are evident, nearly two-thirds of patients experience three or more communication barriers when interacting with doctors (Sepucha, Belkora, Mutchnick, &
Some patients feel that their physicians should spend more time with them (and other patients) (Johnson et al., 1996), which may explain why some patients feel that they can not distinguish between good and bad doctors, and that their doctors do not help them evaluate other sources of information (Rager, 2003). Although practitioners can be a valuable source of information for patients, they are also a source of distress if they do not have effective communication exchanges with patients.

A variety of communication problems relating to doctor-patient communication have been uncovered. Evidence reveals that physicians underestimate a patient’s desire for information, and they overestimate their own ability to communicate information to patients (Beisecker, Helmig, Graham, & Moore, 1994). Common problems include interrupting the patient (Beckman & Frankel, 1984), using technical language that is difficult for patients to understand (Korsch et al., 1968), neglecting to elicit all of the patient’s concerns (Sweeney & Bruera, 2002), deemphasizing patient-initiated questions (Perloff et al., 2006), and minimizing the patient’s role in treatment planning (Sweeney & Bruera, 2002). These are the types of doctor-patient interactions that have been found to hinder patients from introducing additional concerns (Beckman & Frankel, 1984), to cause them to experience information overload (Sepucha et al., 2002), to influence which treatments were selected during medical consultations (Street, 2003), and to instill fear or anxiety about making an effective decision following the interaction (Siminoff & Step, 2005). On one level, problematic practitioner communication creates a situation in which doctors are unable to communicate relevant information to patients; in addition, patients may be less likely to openly discuss their concerns with a doctor who communicates poorly.
On top of the already difficult interaction that patients and physicians must negotiate, these problems may be exacerbated when patients are elderly. Elderly patients experience the least participatory visits with their physicians (Kaplan, Gandek, Greenfield, Rogers, & Ware, 1995), express weaker preferences for being involved in treatment decision making (Arora & McHorney, 2000; Cassileth, Zupkis, Sutton-Smith, & March, 1980; Finucane et al., 2002), and are less likely to question their doctors’ decisions and advice (Nordin, Chinn, Moloney, Naik, de Barros Lopes, & Monaghan, 2001; Pinquart, Eberhardt, Silbereisen, & Miltner, 2004). In fact, younger and older patients, as compared with middle-aged adults, are more likely to prefer a physician communication style that contains less specific, detailed, and technical information (O'Hair, Behnke, & King, 1983). Although some evidence suggests that older patients are less interested in knowing their diagnosis than younger patients (Maguire, 1999), other researchers find that older patients still desire information, but do not want to be as actively involved in treatment decision-making as their younger counterparts (Ajaj, Singh, & Abdulla, 2001; van der Molen, 1999). In general, then, older patients prefer less participation in health related decisions when interacting with medical personnel, compared to middle aged adults.

*Interactions with partners.* Partners of patients play a variety of roles throughout the trajectory of a disease. Typically, partners take on a supportive role (Adelman, Greene, & Ory, 2000; Beisecker & Moore, 1994), are available to listen (Knox, Butow, Devine, & Tattersall, 2002), assist with giving and receiving information (Hasselkus, 1994), and help gather and review disease and treatment information (Hilton, Crawford, & Tarko, 2000). On the other hand, partners sometimes disagree over treatment decisions; these conflicts often involve treatment timelines and the tradeoffs between immediate quality of life and length of survival (Zhang & Siminoff, 2003). Although many partners report wanting the patient to make the final decision
(Srirangam, Pearson, Grose, Brown, Collins, & O’Reilly, 2003), some patients express that their partners are too involved with their care (Zhang & Siminoff, 2003). Thus, partners can help assist patients as they face their diagnosis or partners can cause patients more stress.

Based on research concerning partner participation in medical care, scholars have classified the different roles that relational partners may play in the decision-making process. Ohlena, Balneavesb, Bottorffc, and Braziearb (2006) identified four main decisional involvement roles that partners enact: (a) creating a safe place for the patient to make a decision, (b) becoming a collaborative team, (c) moving the patient toward a decision, and (d) making the decision for the patient. Similarly, Beisecker (1989) suggested that during consultations with physicians, partners can take on a watchdog role (encouraging patients to expand on facts or to clarify information), a significant other role (interacting with physician while ignoring the presence of the patient), or a surrogate patient role (answering questions for the patient and providing unrequested information to doctor). Both classifications of the patient-partner relationship reveal a range of supportive and intrusive interaction behaviors that might be performed by relationship partners.

Interactions with other family members and friends. Evidence suggests that anywhere from 20% to 57% of patients are accompanied by a third person to a medical visit (Prohaska & Glasser, 1996) and that roughly two-thirds of patients prefer to have a relative present when they are told a diagnosis (Lobb, Kenny, Buttow & Tattersall, 2001). Moreover, research has noted that most of the accompanying companions are the patient’s spouse, followed by parents, siblings, and adult children (Beisecker & Moore, 1994). Although a specialist’s opinion is the most highly ranked by patients, the opinion of their partner, their children, other family members, their friends, and finally their colleagues are also valued (Stiggelbout, Jansen, Otten, Baas-
Oncologists describe consultations in which companions were present as being more complex (Beisecker & Moore, 1994), and research shows that less joint decision-making (i.e., between provider and patient) occurs in triadic visits (Greene, Majerovitz, Adelman, & Rizzo, 1994). Although there is some evidence to suggest that patients ask more questions when a family member is present (Beisecker & Moore, 1994), other research notes that patients raise fewer topics, are less responsive to topics that are raised, and are less assertive and expressive when a companion comes to medical consultations (Greene et al., 1994). Still, evidence shows that the topics that physicians raise did not change from dyadic to triadic medical visits (Greene, et al., 1994). Overall, this body of research suggests that companions do have some influence over the tone, content, and nature of the medical discussions (Adelman, Greene, & Charon, 1987).

In addition to the general influence that family members and friends have on the tone of medical interactions, these relational others also affect the selection of specific treatment options. For example, Hispanic women are especially likely to identify a family member as the final decision maker for treatment (Maly, Umezawa, Ratliff, & Leake, 2006). Family members and friends are also influential sources of information about complementary therapies (Balneaves, Kristjanson, & Tataryn, 1999), adjuvant chemotherapy (Irwin, Arnold, Whelan, Reyno, & Cranton, 1999), and genetic testing (Bluman et al., 2003). Moreover, many patients express the importance of giving family members a say in treatment decisions and listening to input provided by friends (Stiggelbout et al., 2007). Whereas family members and friends may vary in the extent to which they have a say in the final treatment selection, it is clear that social networks do influence treatment selections.
For many patients, physicians remain the most highly trusted source of information (Hesse et al., 2005); however, it is evident that patients turn to and are influenced by interactions with a variety of significant relational partners. Research in this area has begun to carve out a niche in the greater body of decision-making literature, but it remains relatively underrepresented. The research that does exist suggests that partners, family members, and friends all participate in a patient’s treatment decisions.

*External Sources of Influence*

Beyond the intrapersonal and interpersonal forces that influence medical decision making, external circumstances shape the decision-making process for the patient. In particular, informational, physical, or economic limitations present barriers to particular types of medical opportunities and, therefore, influence medical decision making. Each access issue is discussed, in turn.

*Decision aids.* Decision aids are designed to provide accurate, balanced, and clear information to patients and to assist them when making a medical decision (O'Connor et al., 1999). When decision aids are provided to patients, they are used frequently (Knox, et al., 2002) and are rated positively (Hack, Pickles, Bultz, Ruether, Weir, Degner, Mackey, 2003). In a literature review done by O’Connor et al. (1999), the authors concluded that cancer-related decision aids helped individuals who were initially uncertain about making a decision, increased the likelihood that the decisions were based on accurate knowledge, enhanced realistic outcome expectations, and promoted decisions that followed from the patient’s personal values. Research indicates that patients who receive a decision aid express more satisfaction with general and disease specific information (Leighl, Butow, & Tattersall, 2004; Molenaar et al., 2001; Tang & Newcomb, 1998), their care and treatment (Leighl, et al., 2004; Tang & Newcomb, 1998), their
treatment decision (Molenaar et al., 2001), and the decision-making process (Molenaar et al., 2001). In addition, individuals who receive aid have better recall of having discussed side effects with the doctor (Hack et al., 2003), rate their general health as higher (Molenaar et al., 2001), report better physical functioning (Molenaar et al., 2001), cite less pain (Molenaar et al., 2001), and are more motivated to adhere to treatment plans (Tang & Newcomb, 1998) than their aidless counterparts. Improvements in these areas may be because patients who receive aid asked the physician significantly more questions, interrupt the physician more, and challenge provider information significantly more frequently. And although Tang and Newcomb (1998) found that patients with decision aids, as compared to those without decision aids, are less likely to achieve their preferred decision-making style, Leighl et al. (2004) observed that aids increase patient participation in their medical decision making. In general then, decision aids have a positive influence on decision making both during and following a treatment decision.

Physical limitations. Because of the various functional, sensory, and cognitive limitations that the elderly face (Adelman et al., 2000; Greene & Adelman, 2003), communication between physicians and older patients has been found to be different than communication between physicians and younger patients (Adelman et al., 2000). For example, studies show that 25% of adults over the age of 75 have hearing difficulties (Myerscough & Ford, 1996), and a large percentage of elderly individuals have compromised vision (Adelman et al., 2000); thus, older adults may miss out information that could influence a treatment decision. In addition, doctors poorly judge health-related quality of life for older adults (Pearlman & Uhlmann, 1988), trivialize medical problems in older adults because of the natural aging process (Greene, Adelman, Charon, & Hoffman, 1986; Greene, Hoffman, Charon, & Adelman, 1987), treat older adults’ medical problems with less rigor (Greenfield, Blanco, Elashoff, & Ganz, 1987), spend
less time with older patients (Adelman et al., 2000), and view older patients as more difficult than their younger counterparts (Greene et al., 1987). To the extent that older patients receive different types of information than younger patients, medical decision making can be affected.

_Economic access._ Women with lower socioeconomic levels have a higher risk of being diagnosed with advanced breast cancer (Gustafson, et. al., 2005) and have higher breast cancer related mortality rates (Chevarley & White, 1997; Scroggins & Bartley, 1999). Furthermore, women insured by Medicaid have a lower likelihood of receiving standard treatment (i.e., radiation) than women who are not insured by Medicaid (Taira et al., 1997). In addition to the monetary limitations that patients with lower socioeconomic status face, research reveals a negative relationship between lower socioeconomic status and effective doctor-patient communication (Epstein, Taylor, & Seage, 1985). In particular, a systematic review of the literature informs us that patients from lower social classes received less positive, more directive, and less participatory utterances from physicians, less information, fewer directions, and fewer utterances expressing cohesion from their doctor (Willems et al., 2005). On the other hand, patients from higher social classes communicate more actively and gather more information during doctor-patient interactions (Willems et al., 2005). Moreover, patients and clinicians are less likely to agree about the content of consultations when the patient is from a lower, compared with a higher, socioeconomic status (Goldstein, Concoato, Bradley, O'Leary, & Fried, 2005). Given that communication between doctors and patients is less effective for individuals from lower socioeconomic status levels (Ayanian & Guadagnoli, 1996), individuals with lower socioeconomic status levels may lack relevant information as they face treatment decisions.

To summarize, this section has discussed different aspects of decision making highlighted within the medical literature. In particular, this body of research has identified individual level
biases, interpersonal interaction variables, and external forces that influence the decision-making process. Although some research has been conducted on the interpersonal influences that shape a treatment decision, the majority of this research orients toward decision making as an individual experience. The research that does exist on the patients interactions with partners, family members, and friends, indicates that these conversations are important to the patient and influence their decision selection. Taken as a whole, then, this body of literature identifies many factors to consider when studying medical decisions, and it reveals that social networks are a significant part of this process. To gain insight into how marital partners negotiate a treatment decision-making task, the next section examines research on decision making in marital dyads.

Decision Making within Marital Relationships

Within the literature focused on marital decision making, decisions are recognized as an outcome of human to human interactions (Ahrons & Bowman, 1981; Ferber & Lee, 1974). Not surprisingly, then, decisions are frequently selected with the assistance of social relations (Berg, Meegan, & Deviney, 1998; Berg, et al., 1998). In fact, decisions are often nested within larger social networks that includes children, parents, friends, members of associations or clubs, and the local community at large (Adams, 2004). The reliance on social others when facing a decision may be because individuals often benefit from working with others during problem solving activities (Gould, Kurzman, & Dixon, 1994; Gould, Trevithick, & Dixon, 1991). In addition, negotiations that include positive problem solving, validation, agreement, and high-affiliation, as opposed to criticism, hostility, and low-affiliation, are indicative of marital happiness (Gottman, 1994a; 1994b; 1998). In the following paragraphs, I review the individual level variables that predict marital decision making, and research on interaction behavior during decision making.

Intrapersonal Characteristics that Influence Decision Making
Marital couples make decisions about a variety of issues that surface in their lives. Typically, joint decision making varies depending on the issue that was being negotiated (Godwin & Scanzoni, 1989). Topics that have been studied include decisions about personal and family activities (Bonds-Raacke, 2006; Godwin & Scanzoni, 1989), food consumption patterns (Bonds-Raacke, 2006; Szybillo, Sosanie, & Tenebein, 1977), eating at fast food restaurants (Krampf, Burns, & Rayman, 1995), household labor distributions (Blood & Wolfe, 1960), the type of contraception a couple uses (Miller and Pasta, 1996), vacation destinations (Filiatrault, 1980; Madrigal & Miller, 1996), relocations due to work or other reasons (Bielby & Bielby, 1992; Challiol & Mignonac, 2005; De Jong, Warland, & Root, 1998), time spent working (Barnett & Lungren-Gaveras, 1998) or commuting to work (Anderson, 1992), general financial planning (Davis & Rigaux, 1974; Ferber & Lee 1974; Godwin & Scanzoni, 1989), and purchasing cars, furniture (Burns & Granbois, 1977; Davis, 1970; Green & Cunningham, 1975), or a home (Cunningham & Green, 1974; Davis & Rigaux, 1974; Filiatrault, 1980; Hempel, 1974, 1975; Munsinger, Weber, & Hansen, 1975). Across topics of negotiation, evidence suggests that spouses vary in their decision-making involvement and behavior more generally (Bonds-Raacke, 2006; Ward & Sturrock, 1998). In the paragraphs that follow, I discuss literature that highlights how individuals vary during decision-making tasks.

*Emotional and cognitive states during decision-making tasks.* Some researchers have identified emotional or cognitive states that are relevant to decision-making tasks. For example, relationship involvement, or the desired level of involvement, varies across decision topics or issues (Burns & Granbois, 1977; Heer, 1963) and influences attitude change (Sherif, Sherif, & Nebergall, 1965; Sherif, & Hovland, 1961). More specifically, Godwin and Scanzoni (1989) found that wives’ level of love and caring, rather than husbands’ level of love and caring, is
negatively associated with their coercive communication. On the other hand, husbands’ commitment to the marital relationship is positively associated with wives’ control and the likelihood that husbands respond positively to suggestions, ideas, and directives made by their wives’. Empathy, which has been conceptualized in terms of spousal satisfaction (Pollay, 1968), expressive behaviors (Kenkel & Hoffman, 1956), or understanding (Blood & Wolfe, 1960), is thought to reduce the likelihood that an overt conflict negotiation would occur; rather, the partner with recognized authority determined a solution (Burns & Granbois, 1977). Although the antecedent causes of coercive communication may vary by sex and the spouses’ level of love, caring, or commitment, overt conflict negotiation is less likely to occur for couples expressing marital satisfaction or understanding.

Socio-demographic characteristics. A variety of socio-demographic characteristics have been linked to marital decision making. Denton (2004) found evidence that religious practices predict decision making in couples because of strong gender ideologies forwarded by various religious sects. Whereas educational discrepancies favoring the husband are negatively related to husbands’ decision-making activity, educational discrepancies favoring the wife are related to lowered perceptions of decision-making power in the husband (Babcock et al, 1993). Age has a curvilinear relationship with decision making such that younger (Martinez & Polo, 1999) and retired couples (Dorfman & Heckert, 1988) make joint decisions, whereas middle-aged couples tend to do so less frequently. Increased individual socioeconomic status predicts which spouse made decisions on a variety of topics and situations (Martinez & Polo, 1999). Moreover, research indicates a positive association between educational status, job status, and income and influence in purchasing decisions (Rosen & Granbois, 1983). Also, the location of personal and family networks strongly influences migration patterns of marital dyads such that partners try to
maintain a close proximity to these networks (Boyd, 1989). Taken together then, socio-demographic characteristics and circumstances influence marital decision making in various ways.

*Power and control during decision making.* Research on power and control during decision making has a long tradition, and the marital literature is no exception. Generally speaking, power is associated with the “winner” of decision-making tasks (McDonald, 1980). Some authors link recognized or legitimate power with role division, the mutual recognition of expertise in one or the other partner, or cultural values about who should have authority (Morgan, 1961). Other researchers have investigated relative power and how increased or decreased power can modify buying behavior (Kingsbury & Scanzoni, 1989). Typically, less power translates to decreased bargaining power within a relationship (England, 1989); in turn, the marital partner with more power or authority typically has more decision-making power. Therefore, much like resource theory predicts, decision-making power within a marriage is dependent upon what each spouse contributes in valued resources to that union (Blood & Wolfe, 1960).

*Marital and gender roles.* Researchers frequently look to the marital or gender roles within a relationship as a way to understand how decisions are made within a couple. Evidence suggests that gender ideologies influence marital decisions, such that couples that subscribe to more traditional gender ideologies give more decision-making power to the husband (Scanzoni & Kingbury, 1989; Waldruff, 1988; Zvonkovic, Schmiege, & Hall, 1994). Other researchers have studied how gender roles implicate the division of household labor and the consequences on perceived fairness and marital satisfaction (Blood & Wolfe, 1960). Some studies have found that household roles are connected with relative influence (Sharp & Mott, 1956), whereas other scholars have found that spousal roles vary in association with the type of decision (Jaffe & Senft,
Thus, the influence that marital and gender roles have on decision making seems to be qualified by each partner’s relative influence and the topic of negotiation.

To summarize, individuals vary in a number of ways relevant to the decision-making process. For example, increased marital commitment is associated with decreased marital power. Also, educational level, occupational status, and income are positively associated with influence on purchasing behavior. Even marital roles have been linked with partner power during a decision-making task. Although this research helps to shed light on different variables that may influence how decisions are made, they fall short of describing the process of decision making. In the following section, I examine communicative processes that arise during decision-making negotiations.

Communication Processes during Marital Decision-making Interactions

Although several researchers have called for more research focused on the process of decision making, the findings are disjointed. Some variables that have been looked at in association with decision processes include communication style and power process (Szinovacz, 1987). Evidence suggests that when marital partners establish patterns of deference, decision making becomes difficult, whereas establishing egalitarian relations bring forth fairer purchasing patterns. Also, the level of consensus attained between marital partners has been linked with feelings of fairness concerning the decision outcome (Szinovacz, 1987). Challiol and Mignonac (2005) found that whether a couple’s decision-making process involves a search for compromise solutions is associated with occupational and family roles, and their partner’s expectations about how to organize their life as a couple. In addition, Davis (1970) and Davis and Rigaux (1974) suggested that there are various stages in the decision-making process, which influence the relative power individuals have throughout the decision negotiation. In the following paragraphs,
I review the decision-making process in terms of communication behavior, conflict negotiation, styles, interactions patterns, and stages.

*Communication behavior.* Godwin and Scanzoni (1989) identified three types of communication that were used during decision-making tasks: cognitive communication (i.e., information seeking behavior), affiliative communication, and coercive communication. Moreover, research has linked communication styles with a partner’s influence on the decision outcome (Bean, Clark, Swicegood, & Williams, 1983). Specifically, wives’ and husbands’ coerciveness is negatively associated with wives’ control, and wives have greater influence in couples where fewer coercive tactics were used (Godwin & Scanzoni, 1989). These findings suggest that communication patterns are associated with different behaviors during decision-making tasks and different decision outcomes.

*Conflict negotiation.* Research on conflict negotiation can also provide insight into communication processes during decision making. This body of literature has focused primarily on establishing criteria by which dysfunctional couples can be identified. For example, reciprocal patterns of negative affect are more prominent in unhappily married couples compared to happy stable couples, and relatively lower ratios of positive to negative exchanges exist in unhappy couples and couples headed for divorce (Gottman, 1998). On the other hand, agreement is more prominent in happily married couples, whereas less positive sentiment and the presence of increased psychological arousal, criticism, defensiveness, contempt, and stonewalling occur in unhappily married couples (Gottman, 1998). There is greater evidence of the wife demand-husband withdrawal pattern of communication in unhappy couples as compared with happily married couples (Gottman, 1998). Also, there are more negative attributions and personal
narratives that last longer in unhappy couples (Gottman, 1998). Taken together then, there is a positive association between the quality of negotiation behavior and marital happiness.

**Decision making styles.** Many researchers have tried to identify decision-making styles that individuals tend toward during decision negotiations (Hsu et al., 1985; Godwin & Scanzoni, 1989). Evidence suggests that a more highly planned and structured decision-making style is positively associated with individual decision satisfaction (Anderson, 1992). Moreover, Lee and Collins (2000) identified five major decision styles that cut across the marital literature: (a) experience, which encompassed problem solving, a focus on facts, and choices based on consensus between members, (b) legitimate, which included giving preference to role stereotypes and role structures, (c) coalition, which privileged developing coalitions using coercion, persuasion, and bargaining, (d) emotion, which consisted of using emotional appeals such as crying, pouting, nagging, or personal criticism, and (e) bargaining, which incorporated trade-offs, exchanges, and efforts to achieve justice and fairness. In general, research shows that individuals use a variety of tactics to influence their partner during decision-making activities, which vary depending on the content of the decision or the situation (Spiro, 1983).

**Marital interaction.** Scanzoni and Godwin’s negotiation theory (1990) proposes that more acceptable outcomes should result from effective marital negotiation. Negotiations are thought to be effective to the extent that both parties modify their initial demands and their responses to the demands of their relational partner. Specifically, husband and wife gain, the fairness of the outcome, their consensus regarding the outcome, and their affection toward one another following the negotiation all constitute the broader construct of outcome acceptability. Moreover, it is the process of husbands’ and wives’ control that predicted negotiation effectiveness and outcome acceptability. In general, the research seems to suggest that household
interactions promote mutual decision-making behavior (De Jong et al., 1998; Jeries, 1977). Joint decision-making occurs more frequently among couples in middle income levels and among younger and more educated couples (Komarovsky, 1961). Other researcher suggests that decision similarity varies over time; specifically, initial decisions are more similar for marital couples, whereas later decisions increase in discrepancy (Burns & Granbois, 1977). These discrepancies may be present for a number of reasons, such as differences in goals and differences in perceptions about option alternatives (Sheth, 1974). Therefore, joint decision making is influenced by input variables, including individual variables, goals, and perceptions, and process variables, such as negotiation practices.

_Stages within the decision making process._ Davis and Rigaux (1974) divide the marital decision-making process into three stages: problem recognition, the search for internal and external information, and the final decision. Extensions of this line of research added a fourth stage that includes a purchase or final act that brought the process to an end (Wilkes, 1975). Another extension by Webster (1994) includes the addition of a stage that is aimed at reflecting the purchaser’s evaluation of the decision made. Research on the initial three stage model has found that marital roles vary across the phases of the decision-making process (Davis & Rigauz, 1974). Taken together, then, the nature and goals of stages within the decision-making process vary between one another as do the roles enacted at each stage.

In conclusion, research on marriage offers some insight into decision-making process. For example, communication styles are associated with varying degrees of power and influence. Also, whether marital partners communicate positively or negatively during an interaction can affect both the outcome of the task and the marital relationship. Goals and expectations during decision making can also shape negotiation patterns between marital partners. In addition, the
stage of the decision-making process that interactants find themselves in may require different communicative behavior. Although research in the marital literature sheds light on dyadic decision-making processes, scholarship in this domain lacks a comprehensive theory of process. In the following section, I turn to the small group literature to identify a theory by which the process of decision making can be described.

Decision Making within Small Groups

Small group communication scholars have illuminated many nuances of decision making. In particular, small group scholars recognize the dual function of communication when making a decision: communication is a medium for making a decision, and communication constitutes or shapes the context for making a decision occurs. Given the role of communication within small group decision making, research emphasizes how decisions emerge through interactions among group members. For example, small group researchers have studied how group processes are associated with characteristics such as power (Salancik & Pfeffer, 1974), leadership (Peterson, 1997), group composition (Von Bertalanffy, 1950), and group size (Beebe & Masterson, 1997; DeSanctis & Gallupe, 1987). Complementing this research, other work has focused on utterance level influences on decision negotiations. For example, researchers have identified information sharing and information bolstering or discounting as two indices of communicative decision-making behavior. In the following section, I review functional theory as a theory for understanding how communication functions during decision-making interactions. Then, I discuss information sharing and information bolstering or discounting as indices for message production during decision-making discussions.

Functional Theory
Although a variety of perspectives on group decision making exist, functional perspectives consist of a set of theories that emphasize group processes that maximize performance effectiveness. This set of theories is primarily interested in the attributes that add to or detract from quality teamwork. In other words, the functional perspective is aimed at predicting group performance as a function of inputs and or processes. There are three core assumptions that guide the functional perspective: (a) groups are goal oriented; (b) group performance varies in quality and quantity, and (c) internal and external factors influence group performance through group interaction. Input variables are thought to influence interaction processes, which then modify group performance and group outcomes. Functional theory (Gouran, 1986; Gouran & Hirokawa, 1983, 1996; Gouran, Hirokawa, Julian, & Leatham, 1993; Hirokawa, 1980, 1982, 1985, 1988) follows in the tradition of functional perspectives.

The functional theory (Gouran & Hirokawa, 1996) has specified several core assumptions: (a) groups are motivated to make an appropriate choice, which (b) is not obvious, (c) collectively the group possesses more resources than each individual member, (d) the aim of the task is identifiable, and (e) relevant information about the task is available to the group, (f) the task is within the cognitive capabilities of the members, (g) at least one member of the group can recognize the signs of unwanted cognitive, affiliative, and egocentric constraints, (h) communication is instrumental, (i) members can gauge how well the interaction is serving to fulfill the fundamental task requirements, and (j) members will take action to minimize influences that discourage the group from adequately fulfilling the fundamental task requirements. In addition, functional theorists have focused on the relationship between a group’s decision-making performance and the group’s ability to fulfill eight conditions.
(Hirokawa, 1985, 1988, 1990). Functional theorists argue that making an appropriate choice is maximized when members fulfill these conditions and tasks.

Each of the conditions forwarded by functional theory are associated with different aspects of the decision-making process. Specifically, the theory identifies the following conditions associated with a group’s decision-making ability: (a) clearly indicate the desire to arrive at the best possible decision, (b) identify resources necessary to make a decision, (c) identify possible obstacles to make a decision, (d) clarify procedures to be followed, (e) establish rules of interaction, (f), attempt to satisfy fundamental task requirements, (g) intervene with cognitive, affiliative, and egocentric constraints that are barriers to the satisfaction of fundamental task requirements, and (h) review the process and reconsider judgments made if needed (i.e., start over completely). Fulfilling each of these conditions is thought to maximize the decision-making ability of the group.

To date, the aspect of the theory that has received the most attention is the need to satisfy fundamental task requirements, and thereby promote optimal decisions. The first of the five fundamental task requirements is the problem analysis task, which specifies that the group must develop a sound understanding of the problem at hand. In particular, the group needs to arrive at an accurate and reasonable conception of (a) the nature of the problem, (b) the gravity or seriousness of the problem, (c) the likely cause(s) of the problem, and (d) possible outcomes of the problem if it is not dealt with effectively. A group must also establish evaluation criteria by which possible decisions will be evaluated upon. These standards must be met in order to judge a particular option acceptable. A group must also generate alternative solutions. During this task, a set of realistic and acceptable choices should be generated. These options should be both appropriate and feasible. During the evaluation of the alternatives relative to their acceptability
criteria task, the group should carefully consider if possible solutions meet the previously agreed upon criteria for an acceptable solution. In addition, the group must select the alternative most likely to have the desired characteristics. These are the five fundamental tasks that groups must address to maximize effectiveness in their decision making.

Hirokawa (1985; 1988) tested the relevance of four of the fundamental tasks originally specified by the theory: identifying the problem, establishing requirements for an acceptable decision, assessing positive consequences of each choice, and assessing negative consequences of each choice. Hirokawa (1985) randomly assigned 54 three-member groups to one of four discussion format conditions: reflective thinking, ideal-solution, single question, and free discussion. Groups were then trained on their assigned discussion format and asked to make a decision about a student plagiarism case. Regardless of the discussion format, Hirokawa found that groups who competently analyzed the problem and assessed the negative consequences of each choice produced significantly better solutions than did the groups that did not fulfill these conditions. In a similar study, Hirokawa (1988) observed that more reasonable and fair solutions are generated by groups that performed all four functions. Although higher quality solutions occurred when all four functions were fulfilled, only identification of the problem, establishment of the requirements for an acceptable selection, and evaluation of negative qualities of possible choices were individually significant predictors of solution quality. An additional study conducted by Propp and Nelson (1996) found that groups with higher frequencies of communication focused on identifying the problem, establishing the requirements for an acceptable selection, and evaluating positive consequences of possible choices make higher quality decisions. Taken together, then, these findings suggest that fulfilling the requisite
conditions proposed by functional theory is associated with higher quality decision-making discussions.

Thus far in this section, I reviewed functional theory as a model for understanding and studying decision-making processes. The theory specifies core assumptions about qualities that make groups more effective, and the aspects of the decision-making process. To maximize the likelihood of a group making an appropriate choice, the group must fulfill a number of conditions, which include five fundamental task requirements. Research is consistent with the claim that fulfilling these fundamental tasks promotes effective group decision making.

**Information Sharing and Bolstering or Discounting**

Although viewing decision making through the lens functional theory provides an understanding of decision-making processes, other researchers have concentrated on analyzing utterance level decision-making strategies. Beginning with a seminal study by Strasser and Titus (1985), scholars have tried to explain why groups make suboptimal decisions during tasks that involved shared and unshared information among group members. Boster, Hale, and Mongeau (1990) noted that one explanation for these findings may be because the information that individuals share is then advocated for (bolstered) or against (discounted) by other group members. In the following section, I discuss information sharing and information bolstering or discounting as mechanisms that could potentially influence marital decisions about treatment for breast cancer.

**Information sharing.** Information sharing is a concept that has been studied extensively in the small group literature. Researchers have been interested in the why information is shared or remains unshared during group discussions. In particular, much of the research on information sharing has been modeled after Stasser and colleagues (e.g., Stasser et al., 1989; Stasser & Titus,
1985, 1987) work in which groups of participants are asked to make decisions based on hypothetical information. The participants enter into these discussions with the awareness that group members may possess different pieces of information. Hence, this simulation is designed to mimic real world circumstances in which a group may come together to make a decision and its members may possess various types and levels of information. Although theory suggests that exchanging novel information would result in optimal decision-making patterns, Stasser and Titus (1985) found that groups tend to make suboptimal decisions because they more frequently discussed and incorporated shared, as opposed to unshared, information. This finding spawned efforts to identify the conditions under which information sharing is biased toward collectively known information.

Research and theorizing on groupthink provides one explanation as to why there is a tendency for group members to discuss shared, rather than unshared, information (Janis, 1972; Janis & Mann, 1977). The theory underlying groupthink highlights the conditions in which groups will restrict information processing. Specifically, high levels of group cohesion, a dominant and charismatic leader, bias toward a solution going into the discussion, the perception of outsider threat, time pressure, and isolation of the group from the outside world are all thought to be circumstances that exacerbate groupthink (Janis, 1972; Janis & Mann, 1977). Therefore, groups should be sensitive to their composition, as well as the group’s perceptions of outsiders, when making a decision.

The research supporting the theory of group think are mixed. Support for the claims of the theory comes from Butler (1999), who found that as time to discover the solution decreases, information quantity increases. Also, Fodor and Smith (1982) documented that groups in which their leaders have a low need for power collectively introduce more factual information to the
group discussion. In contrast to the claims of groupthink, Leana (1985) found that groups with higher levels of cohesion share more uniquely known information, compared with groups with lower cohesion. Some efforts to reduce the effect of biased information sampling in groups includes indicating to the group that there is a correct answer or choice (Stasser & Stewart, 1992), identifying for the group who has what information (Stasser, Stewart, & Wittenbaum, 1995), exposing the expertise of the group’s members to the group (Stewart & Stasser, 1995), teaching group member’s to use effective decision-making techniques (Larson, Foster-Fishman, & Keys, 1994), or creating a devil’s advocate in the group (Schwenk, 1990).

Group members may also curtail their opinions because of two alternative influence modes: normative influence and information influence (Deutsch & Gerard, 1955). Normative influence is understood as the desire of a group member to conform to the expectations of others. On the other hand, information influence suggests that shifts in beliefs are attributed to the processing of relevant arguments supported by factual evidence. Research indicates that shifts due to informational influence occur more frequently and with more intensity than normative influence shifts (Burnstein & Santis, 1981).

Another way to understanding information sharing is by identifying the issue that is being discussed. Laughlin and colleagues proposed that most issues that groups confront fall on a continuum from intellective issues to judgmental issues (Davis, Laughlin, & Komorita, 1976). **Intelllective issues** are those which are considered to have a correct solution or answer. **Judgmental tasks**, on the other hand, involve ethical or moral judgments, in which there is no true or correct answer. The nature of intellective and judgmental tasks is fundamentally different. The former is asking group members to identify a true or correct answer, whereas the latter is requesting a moral or preferred perspective. Research, however, suggests that elements of both
intellective and judgmental tasks are present in the negotiation of all decisions (Laughlin, 1980). Whereas exchanging novel information is thought to result in optimal decision-making patterns, the nature of the task and the composition of the group will influence the extent to which information is actually exchanged.

**Information bolstering or discounting.** Bolstering and discounting are two different ways that interactional partners can respond to information that is shared during decision making. Bolstering is understood as any instance in which a speaker promotes the importance of a piece of information that is consistent with their position (Boster et al., 1990). On the other hand, discounting is defined as communicative acts in which a group member negates or contradicts the importance of a piece of information that is inconsistent with their position (Boster et al., 1990). Neither bolstering nor discounting is restricted by valence; therefore, both positive and negative information can be bolstered or discounted.

Boster et al. (1990) used hidden profile techniques to manipulate the information that group members received during a decision-making task. A hidden profile manipulation involves splitting up information among group members such that individually each member holds information that will favor a low-quality decision, but that as a group the entire set of information will favor a high-quality decision. If group members only exchange shared information, they will make a poor decision; however, if group members reveal unshared information they will make a higher quality decision. Using this research paradigm, Boster et al. (1990) had groups review three applicants for an assistant professor position, in which they were given 12 different pieces of information (e.g., candidates’ education, teaching abilities, and research record). Candidate A had eight positive pieces of information and four negative pieces of information; by contrast, both Candidates B and C had eight negative pieces of information
and only four pieces of positive information. If group members revealed unshared information
Candidate A should be the more desirable candidate, but if the unshared information remained
concealed then Candidate A would appear less desirable.

Although Boster et al. (1990) was initially interested in information sharing patterns, they
observed that some items of information were given enhanced credibility, whereas other
information was discredited. In other words, throughout the discussion information was
unequally weighted such that some information was more or less important when it came time to
make a decision. In some cases, a group member would recall a positive piece of information
about an unfavorable candidate, and another group member would discount that information by
arguing that it was of minimal importance or irrelevant. For example, some groups discounted
information regarding the outstanding teaching ratings of Candidate A by suggesting that the
instructor was probably an easy grader. On the other hand, behavior occurred where by
previously stated information was enhanced or bolstered by other group members. For example,
information that Candidate A desired too high a salary was bolstered by suggesting that the
candidate would not take the job if offered and should therefore not even be considered as a
potential option. In other words, throughout the discussion not all information was weighted
equally: some information was more important when it came time to make a decision and other
information was less important when a selection was made.

Although both bolstering and discounting behavior were observed in this study, these
communicative acts were not quantified. Cruz et al. (1997) used a similar assistant professor
candidate selection activity and forwarded that information bolstering and discounting mediated
the association between information sharing and decisions. Findings suggest that both bolstering
and discounting occur more frequently when quantities of shared information are high rather
than low. Group size was also tested in association with bolstering and discounting behavior, but no significant associations were found.

To review, information sharing and information bolstering or discounting have been documented as forces of influence during decision-making interactions. Specifically, revealing or concealing information from other group members can drastically alter decision-making outcomes. Also, if a piece of information is bolstered, it may hold more weight when a group is making a decision. Conversely, if a piece of information is discounted, group members may ignore that information when deciding upon a particular option.

Conclusion

This chapter reviewed literature on medical decision making, marital decision making, and group decision making. Research on medical decision making highlights the individual level biases, interpersonal interaction variables, and external forces that influence the decision-making process. The research on marriage offers some insight into decision-making process, such as the use of power and influence, communicative tone during interactions, and the goals and expectations people bring to a decision-making task. The work on small group decision making emphasizes the interactive nature of decisions and offers functional theory (Gouran & Hirokawa, 1996) as a framework for understand how communication shapes the process of decision making. At the intersection of these three bodies of research, then, the way in which people talk about information becomes central to dyadic decision making.

Research on marital decision interactions suggests that information sharing and bolstering or discounting phenomena documented in groups can be observed in marital dyads. For example, in a study that used sequential analyses, Margolin and Wampold (1991) found that distressed couples show negative reciprocity, a behavior that virtually absent for nondistressed couples.
Similarly, Revenstorf, Vogel, Wegener, Hahlweg, and Schindler (1980) found that nondistressed couples frequently reciprocate positive statements with positivity, whereas distressed couples do not provide immediate responses; on the other hand, distressed couples reciprocate negative statements, and nondistressed couples do not immediately respond to these statements. Other research examining the use of one-up and one-down messages found that couples who exchange relatively fewer one-up, or domineering, messages also report better adjustment (Rogers & Bagarozzi, 1983). Taken together, then, research on marital exchanges suggests that bolstering or discounting may be present during communicative interactions between spouses.

With this understanding of decision making in mind, the next chapter examines the relational turbulence model (Solomon & Knobloch, 2004) as a theory to predict couples’ ability to effectively work through the fundamental tasks (Gouran & Hirokawa, 1996). Additionally, I use the assumptions of relational turbulence model to inform when information sharing and information bolstering or discounting will arise during negotiations.
The relational turbulence model (Solomon & Knobloch, 2004) is a theory that identifies specific relationship qualities that affect communication experiences during times of transition; thus, it is especially relevant to the social context that characterizes couples coping with cancer. As noted previously, transitions are often characterized as responses to change (Marineau, 2005) in which individuals encounter varying degrees of instability throughout the adaptive process (Walker, 2001). Instability may be due in part to the complex and multidimensional nature of transitions (George, 1993). Moreover, scholars emphasize that moments of transition share a reciprocal relationship with their social context such that transitions are both embedded within and shaped by their social context (Elmberger et al., 2000; Tomlinson, 1996). As such, transitions present the opportunity for changes to identities, roles, relationships, behaviors, or defining one’s self or one’s relationship(s) (Berger & Bradac, 1982; Knobloch & Solomon, 1999). In other words, transcending though a transition involves both individual change, as well as possible modifications to a social context within which the individual is experiencing the change. In this chapter, I review the main assumptions of the relational turbulence model, and I propose hypotheses about how qualities of relationships contribute to marital decision making.

The Model of Relational Turbulence

The relational turbulence model brings forth an understanding of how moments of change in romantic relationships have the potential to elicit more extreme emotional, cognitive, and communicative reactions to relationship events. Specifically, Solomon and Knobloch (2001) suggest that increases in relational uncertainty and goal interference are mechanisms that underlie these more polarized reactions. Research supports this theorizing and has found that more extreme emotional experiences (Knobloch & Solomon, 2002; Knobloch, Solomon, & Cruz,
Relational Uncertainty

Initial conceptions of uncertainty referred to an individual’s confidence in understanding and explaining behavior (Berger & Calabrese, 1975). As research in the area of uncertainty developed, scholars identified relational uncertainty as a specific type of uncertainty that involves an individual’s confidence in their perceptions of relationship involvement (Knobloch & Solomon, 2002a). Moreover, theorizing and evidence from scholarly research emphasizes that relational uncertainty arises from three specific sources: self uncertainty, partner uncertainty, and relationship uncertainty (Berger & Bradac, 1982; Knobloch & Solomon, 1999). Self uncertainty entails the questions that people have about their own involvement in relationship, including their personal evaluation of the relationship’s worth or their goals within the relationship. Partner uncertainty encompasses the concerns that people have about their partner’s involvement in the relationship; it can include questions about the value the partner places on the relationship or the goals that the partner has for the relationship. Relationship uncertainty embodies more global questions that arise about a relationship, including the behavioral norms for the relationship, the roles enacted within the relationship, the reciprocity of feelings between the partners, how the relationship is being defined, and where partners can expect the relationship to go in the future. As a whole, relational uncertainty is manifested in questions
about one’s own involvement in a relationship, questions about a partner’s involvement in a relationship, or more global questions about the relationship as an entity.

Although questions about involvement in a close relationship can arise at any point throughout the trajectory of that relationship (Baxter, 1988), questions about relationship involvement may be particularly pronounced during transitional moments. In general, people rely on relational schemas and scripts to navigate interpersonal associations (Planalp, 1985). These schema and scripts help people to know how to behave in specific types of relationships and they also help people to interpret the behavior of others. Because the norms, rules, and expectations for relationships are under negotiation during transitions, scripts may not be readily available to assist with interpreting a situation. In other words, when people cannot identify relational scripts to apply to a situation, relational partners have difficulty knowing what to do. Consistent with this view, research indicates that individuals from the United States show consensus on the key elements of a first date (Pryor & Merluzzi, 1985). There is also evidence that people have schema for how a relationship will develop (Honeycutt, Cantrill, & Greene, 1989). In addition, people have scripts for how romantic relationships come apart or how people disengage from a relationship (Honeycutt, Cantrill, & Allen, 1992). On the other hand, people find behavior different from their relational schemas to be harder to interpret (Baldwin, 1992). Relational uncertainty also compromises people’s ability to draw clear inferences about the relationship from a conversation with a dating partner (Knobloch & Solomon, 2005). To extent that transitional moments in relationship leave people unclear about the relational schemas that provide information about their relationships, these periods should be characterized by heightened relational uncertainty.
According to the relational turbulence model, relational uncertainty polarizes reactions to relationship events, which is manifested in more extreme emotions, cognitive appraisals, and communication behaviors. For instance, research has found that relational uncertainty corresponds with stronger feelings of jealousy (Knobloch et al., 2001; Theiss & Solomon, 2006) and more negative emotions about stressors experienced in association with a breast cancer diagnosis (Weber & Solomon, 2007). In addition, relational uncertainty is positively associated with cognitive jealousy (Theiss & Solomon, 2006), negative appraisals of irritations (Knobloch & Solomon, 2002), perceptions of the difficulty of a conversation (Knobloch & Solomon, 2005), and discomfort during the conversation (Afifi & Burgoon, 1998). Moreover, relational uncertainty is associated with increases in distancing, distributive, and avoidant behaviors (Afifi & Burgoon, 1998; Knobloch & Carpenter-Theune, 2004; Knobloch & Solomon, 2002). In addition, uncertain individuals are more likely to use indirect communication to address relational problems (Theiss & Solomon, 2006a), and they are more likely to refrain from expressing jealousy (Afifi & Reichert, 1996) or avoid talking about surprising relationship events (Knobloch & Solomon, 2002b). Viewed as a set, this research implies that relational uncertainty contributes to turbulence during transitional periods within relationships.

The Negotiation of Interdependence

The relational turbulence model also specifies the negotiation of interdependence as a second mechanism that underlies greater reactivity to relational events. Kelley et al. (1983) conceptualizes *interdependence* as the coordination of behavioral patterns that are mutually beneficial to relational partners. To the extent that relational partners are integrated into the daily routines of one another and rely on one another to achieve daily goals, they achieve interdependence. The ways in which partners can shape each other’s daily activities include the
ability to influence the other’s goals, interfere with the other’s goals, and facilitate the other’s goals (Solomon & Knobloch, 2001, 2004). Influence occurs when one partner is involved in the daily activities of the other partner. Interference surfaces when one partner impedes or creates boundaries for the other partner to achieve their activities or goals. Facilitation emerges to the extent that an individual promotes or assists with the partner’s daily activities. Whereas interdependence takes into account the roles of influence, interference, and facilitation, the relational turbulence model focuses on patterns of partner interference during daily goal achievement (Solomon & Knobloch, 2001, 2004).

Because transitions present the opportunity for partners to influence each other in novel and unfamiliar ways, moments of change in relationships are likely to ignite increases in interference. When partners make initial attempts at coordinating their behavior, these efforts are inevitably fraught with errors and mishaps. As partners practice and provide feedback to one another, problematic patterns of behavior are replaced with patterns of behaviors that allow for goal achievement. For example, couples frequently renegotiate breadwinner and caregiver roles following the birth of a child (Singley & Haynes, 2005). Likewise, couples need to develop new social activities and alternative ways to participate in their relationship following severe changes to one partner’s health (Glass, Palmer, Loo, & Wegener, 2004). In addition, parents and children often negotiate new roles when children move from their family of origin to a family of choice (Delsing, Oud, De Bruyn, & van Aken, 2003). As suggested by these examples, when novel life circumstances influence the goals and daily activities of a person, relational partners must negotiate and renegotiate their interdependence.

Both theoretical reasoning and empirical evidence suggest that interference from a partner promotes more polarized reactions to relationship events. Berscheid (1983) argued that
interruptions to previously fluid action sequences promote polarized emotional reactivity. Similarly, the frustration-aggression hypothesis suggests that goal interference gives rise to negative reactions. In fact, the presence of obstacles to desired outcomes often intensifies a person’s goal directed behavior (Ifert & Roloff, 1996). Empirical tests mirror these claims, indicating that increases in interference from a partner give rise to more extreme emotions, cognitive appraisals, and communication behavior. In particular, a partner’s interference is positively associated with negative feelings about stressors associated with breast cancer (Weber & Solomon, 2007), and the perceived negativity of relational irritations (Solomon & Knobloch 2004, Theiss & Solomon, 2006b). In addition, the directness of communication is positively associated with partner interference (Theiss & Solomon, 2006b; Weber & Solomon, 2007), whereas communication positivity is negatively associated with interference from a partner. Although empirical tests linking a partner’s interference and reactions to relationship events are limited, they support the claims advanced in the relational turbulence model.

To summarize, the relational turbulence model argues that relational uncertainty and interference from a partner are heightened during transitional moments within personal relationships. Relational uncertainty occurs to the extent that a partner lacks confidence about the nature of involvement within the relationship. On the other hand, interference from a partner is present when partners must negotiate or renegotiate patterns of interdependence. As individuals experience increased relational uncertainty and when interference from a partner arises, relational partners contend with more polarized emotions, cognitive appraisals, and communication behaviors. Thus, the relationship turbulence model provides a theoretical framework that links qualities of a couple’s social relationship with specific features of their interactions.
Using the Relational Turbulence Model to Predict Communication during Treatment Decisions

Thus far in this dissertation, I have discussed research on how people make medical decisions, how couples make decisions within a marital relationship, and how small groups negotiate decisions. This discussion featured information sharing and bolstering or discounting as communication processes that unfold during a negotiation and affect the outcome of decision making. I also reviewed the relational turbulence model as a theory that identifies relationship qualities that may affect decision-making communication. Following, I propose hypotheses derived from the aforementioned bodies of research.

Recall that functional perspectives emphasize group processes that maximize performance effectiveness. Specifically, functional theory (Gouran, 1986; Gouran & Hirokawa, 1983, 1996) asserts that if the following five fundamental task requirements are fulfilled, then the decision-making ability of the group will be at a maximum: (a) analyze the problem, (b) establish evaluation criteria, (c) generate alternative solutions, (d) evaluate the alternatives relative to the previously established acceptability criteria, and (e) select the alternative most likely to have the desired characteristics. To date, tests of the fundamental task requirements found that groups that competently analyzed the problem and assessed the negative consequences of each choice produced significantly better solutions than did groups that did not fulfill those conditions (Hirokawa, 1985). Thus, I expect that couples who are able to work through functional theory tasks will make higher quality treatment decisions for a breast cancer diagnosis. Stated formally:

H1: In discussions of breast cancer treatment decisions within marital dyads or committed domestic partnerships, fulfilling fundamental tasks is positively associated with decision-making quality.
Research on information sharing has focused on why some information is shared among group members and why some information remains unshared. A number of scholars believe that people neglect to share information because of groupthink and cohesion tendencies within groups (Janis, 1972; Janis & Mann, 1977). Other researchers believe that people curtail their contributions to group discussions because of normative and informational influences (Deutsche & Gerard, 1955). Regardless of the theoretical underpinnings, evidence suggests that suboptimal decisions are made to the extent that unshared information is not incorporated into decision negotiations (Stasser & Titus, 1985). By extension, if marital partners making a treatment decision for breast cancer are able to openly share all relevant information, their decision will be of a higher quality. I pose the following hypothesis:

H2: In discussions of breast cancer treatment decisions within marital dyads or committed domestic partnerships, information sharing is positively associated with decision-making quality.

As mentioned previously, bolstering occurs to the extent that a speaker promotes the importance of a piece of information, whereas discounting is defined as communicative acts in which an individual negates or contradicts the importance of a piece of information (Boster et al., 1990). Because information bolstering may manifest in ways that promote, support, or encourage a partner’s view (Johnson, Johnson, & Holubec, 1990), these exchanges may give undue weight to a particular piece of information during decision-making negotiations. On the other hand, denying the validity of another person’s contributions or being critical (Burgoon & Dunbar, 2000; Burgoon, Johnson, & Koch, 1998), may retard members from fully participating in a decision discussion. Because the use of either bolstering or discounting information can modify the
weight of any one piece of information, I expect that bolstering and discounting will negatively influence decision-making outcomes. Accordingly, I predict:

H3: In discussions of breast cancer treatment decisions within marital dyads or committed domestic partnerships, information bolstering and information discounting are negatively associated with decision-making (a) satisfaction and (b) quality.

The relational turbulence model posits that the experience of relational uncertainty creates more polarized reactions to relationship events. Several studies have found that individuals who experience more relational uncertainty engage in more topic avoidance with their partner (Afifi & Burgoon, 1998; Knobloch & Carpenter-Theune, 2004; Knobloch & Solomon, 2002), and they report more indirect communication about relational problems (Theiss & Solomon, 2006b). Central to decision making, relational uncertainty is associated with increases in the perceived difficulty of conversations about the relationship (Knobloch & Solomon, 2005). In addition, relational uncertainty renders messages less fluent, less affiliative, and less effective (Knobloch, 2006). To the extent that these findings generalize to decision-making negotiations about a treatment for breast cancer, I propose the following hypothesis:

H4: In discussions of breast cancer treatment decisions within marital dyads or committed domestic partnerships, relational uncertainty is negatively associated with (a) fulfilling the 5 fundamental tasks set forth in functional theory, (b) information sharing, and (c) information bolstering and discounting.

Although findings show a negative association between relational uncertainty and direct communication, experiences of goal interference may prompt an individual to engage in communication. Theoretically speaking, Ifert and Roloff (1996) suggested that people tend to
communicate more fervently when they perceive threats to personal goals. Moreover, Theiss and Solomon (2006b) reported a positive association between perceived partner interference and communication directness. In addition, Weber and Solomon (2007) found that breast cancer survivors communicate more directly with their partners about breast cancer stressors when they experience interference from their partner. Thus, if the association between the directness of communication and interference from a partner translates into episodes of treatment negotiation, I expect couples to have more developed conversations under these conditions. Stated formally:

H5: In discussions of breast cancer treatment decisions within marital dyads or committed domestic partnerships, interference from a partner is positively associated with the frequency of communication that addresses (a) the 5 functional theory tasks, (b) information sharing, and (c) information bolstering and discounting.

This chapter opened with a discussion of the assumptions of the relational turbulence model. Following the logic of the theory and research on decision making that was reviewed in Chapter 2, I proposed hypotheses about how qualities of interpersonal relationships and communication may influence a couple’s ability to make a treatment decision for breast cancer. In the next chapter, I describe the study designed to test the hypotheses I advanced in this chapter. Because I was interested in exploring communication as a process of exchange within romantic couples, I employed an observational research design to capture the nuances of these interactions. In addition, because this study required the use of dyadic interaction data to document decision making within couples, the statistical techniques I used allowed me to account for non-independence in the data.
CHAPTER 4

This dissertation employed a cross-sectional, two-group observational study design to test the hypotheses advanced in Chapter 3. Specifically, I had 113 marital dyads and committed domestic partners \(N = 226\) respond individually to a number of communication and relationship measures. Then, couples were assigned to either the functional theory condition or the control condition, and they were asked to make a decision about a treatment for a hypothetical diagnosis of breast cancer. Finally, individuals reflected on their treatment selection interactions. This research design allowed me to examine how mechanisms identified by the relational turbulence model and functional theory shape dyadic decision making.

**Participants**

Participants included 113 healthy marital dyads and committed domestic partners living in and around State College, Pennsylvania. Although participants in the sample were currently cancer free and otherwise healthy, there were 7 women in the sample who had been diagnosed with breast cancer in the past and 17 participants diagnosed with various other types of cancer. Theoretical and empirical research supports the use of a healthy population to study how couples make a breast cancer treatment decision (i.e., Fagerlin, Zikmund-Fisher, & Ubel, 2007; Gurmankin, Baron, & Armstrong, 2004; Zikmund-Fisher, Fagerlin, & Ubel, 2008). Moreover, previous research has successfully used healthy populations to clarify various aspects of cancer treatment decisions (see, Meyer et al., 1995; Meyer, Talbot, & Ranalli, 2007).

Participants were recruited via flyers that were posted at community facilities (e.g., salons, Laundromats, restaurants, and religious organizations). Additionally, a posting was administered through a large Eastern University staff and faculty listserv. Both recruitment methods indicated that I sought individuals involved in a long-term romantic relationship or a
marital partnership in which both individuals were at least 40 years of age. Because the incidence of breast cancer in younger women is both less frequent and more severe (Young Survival Coalition, 2009), I sought couples over the age of 40 to make the hypothetical treatment decision scenario more realistic. Individuals who were interested in participating in the study called or emailed me, and I coordinated a time in which the individual could come to the laboratory with his or her romantic partner. Couples typically completed the study in about 1 hour. Participants were each compensated $25 for their participation in the study, as well as entered into a drawing to win $500.

Data from several couples were removed from the analyses for a variety of reasons. First, one couple was removed because the study manipulation was not executed properly. Consistent with the sample age criterion, another couple was removed because the female was 26 years old. In addition, four couples who did not meet the relationship status criterion were removed from the study, including two couples that indicated that they were seriously dating, one couple that did not agree on the status of the relationship, and one couple wherein the partners had only been committed to one another for 6 months.

The final sample included 214 participants (107 couples). I elected to retain 4 participants who were 39 because they were close to the age criterion; therefore, participants ranged in age from 39 to 82 with a mean age of 51.49 (SD = 8.54, median = 50.00). The sample included 201 individuals who identified as Caucasian, 8 individuals who identified as Black or African American, 2 individuals who identified as Hispanic or Latino, 2 individuals who identified as Asian, 2 individuals identifying as Native American, and 3 individuals identifying themselves as of another race or ethnicity. One-hundred-fifty-nine of the individuals identified as Christian, 5 individuals identified as Jewish, 1 individual identified as Buddhist, 6 individuals indicated
having another religious affiliation, 4 individuals identified as Atheist, and 39 individuals indicated having no religious affiliation. There were 105 heterosexual couples and 4 same-sex female couples. Couples ranged in relationship length from 3 years to 57 years with a mean length of 23.59 years ($SD = 10.97$, $median = 23$). Twenty-six participants completed high school, 42 participants received a bachelor’s degree, and 77 participants completed a master’s degree, a law degree, or a doctoral degree. One-hundred seventy-five participants indicated having children or step children.

**Stimulus Development**

I used a hidden profile format to distribute information to each individual within each couple. The hidden profile paradigm was developed to examine information sharing in decision-making groups (e.g., Stasser & Titus, 1985; 2003). Specifically, groups are asked to make a decision between two or more options in which one decision is deemed “better” and one decision is deemed “worse.” Individuals within the group are given information to help them make the decision. Within this set of information, there is evidence that supports and refutes the “better” decision and there is evidence that supports and refutes the “worse” decision. These pieces of evidence are distributed among group members in such a way that both shared information, which is information that is known by all group members, and unshared information, which is information that is only known by one group member, exists (Stasser & Titus, 1985; 2003). The shared information is biased positively toward the “worse” decision, whereas the unshared information is biased positively toward the “better” decision. Because the distribution of information renders the preferred alternative “hidden,” group members typically begin their discussion favoring the decision option that is supported by shared information (i.e., the less desirable option; Stasser & Titus, 1985; 2003). If unshared information is revealed as the
discussion unfolds, then the full set of evidence should indicate that the “hidden” decision is actually the more desirable one (i.e., the better decision). As a result, groups that do not share information should select the poor decision option, and groups that do share information should make the better decision.

The hidden profile paradigm is optimal for my dissertation because it emphasizes that communication between participations is key to making good decisions. Hence, it allows me to study communication processes that are relevant to the context of decision making. The hidden profile paradigm also allowed me to test if an objectively correct treatment decision was selected by participants.

The first step to developing a hidden profile study is to identify discrete pieces of information that will form the shared and unshared information groups. To begin constructing the groups of shared and unshared information, I turned to the American Cancer Society website (2007, 2008) for information about breast cancer, breast cancer staging, treatment options for breast cancer, and details about treatment options for breast cancer. Because hidden profiles require that shared and unshared information about two different options be distributed, I created a scenario in which the participants would be electing to treat their hypothetical breast cancer with either lumpectomy surgery with radiation or mastectomy surgery, and the discrete pieces of information provided information relevant to these treatment options. I then pretested three sets of information: two profiles in which the preferred choice was hidden and a combined information set. In the sections that follow, I discuss the five pretests I conducted to develop the information sets used in my dissertation.

**Pretest 1.** The first pretest that I conducted included 3 sets of information that I created (Appendix A). Information set A included 4 pieces of shared information that supported
lumpectomy surgery with radiation and 3 pieces of unshared information that supported mastectomy surgery. If participants received information set A, they were supposed to be inclined toward lumpectomy surgery. Similarly, information set B included 4 pieces of shared information that supported lumpectomy surgery with radiation (which were the same as those presented in information set A) and 3 pieces of unshared information that supported mastectomy surgery (which were different from those presented in information set A). If participants received information set B, they were supposed to be inclined toward lumpectomy surgery. The last set of information included all of the shared and unshared information from information sets A and B. Participants who received the full set of information should have been inclined to select mastectomy surgery.

College undergraduates (N = 129) from a large east coast university participated in a web-based, cross-sectional survey study. Participants read one of the 3 sets of information and indicated which treatment selection they would make. Follow-up questions probed why participants selected their choice and which pieces of information were most influential in their decision. Of the participants who received information set A, 39% selected lumpectomy surgery with radiation and 61% selected mastectomy surgery. Similarly, 41% of participants who received information set B selected lumpectomy surgery with radiation and 59% selected mastectomy surgery. For those participants who received the full set of data, 27% selected lumpectomy surgery with radiation and 73% selected mastectomy surgery. Because information set A and information set B did not lead a majority of the participants to select lumpectomy surgery, I modified the scenario and conducted a second pretest.

Pretest 2. Because participants in pretest 1 who were exposed to information set A or information set B were inclined to select mastectomy surgery and not lumpectectomy surgery, I
modified the scenario to make mastectomy surgery less appealing in these conditions. Feedback from participants indicated that one piece of information was particularly influential in guiding their treatment selection. Specifically, in the scenario for pretest 1 the person (or their partner) was thought to have a tumor roughly 3 cm across. Participants reported being swayed to select mastectomy surgery after reading information set A because of the piece of information that read “Lumpectomy surgery is recommended for tumors less than 2 cm across, whereas mastectomy surgery is recommend for tumors larger than 2 cm across.” Participants reading information set B were similarly influenced to select mastectomy surgery because of the piece of information that read “Greater survival rates are expected if mastectomy surgery is conducted when the tumor is greater than 2 cm.” Because I wanted to make mastectomy surgery less appealing based on information sets A and B, I changed the scenario such that the cancerous tumor was 2.25 cm across instead of 3 cm across (Appendix B); the information included in information set A and information set B (and by extension the full data set) remained the same. This change was aimed at decreasing the strength of the two aforementioned pieces of information.

For the second pretest, I again employed a web-based, cross-sectional survey research design. In contrast to the first pretest, I utilized a snowball sample of individuals over the age of 40 for this pretest ($N = 84$). Of the participants who received information set A, 47% selected lumpectomy surgery with radiation and 53% selected mastectomy surgery. Similarly, 48% of participants who received information set B selected lumpectomy surgery with radiation and 52% selected mastectomy surgery. For those participants who received the full set of data, 29% selected lumpectomy surgery with radiation and 71% selected mastectomy surgery. The results indicated that participants were not sufficiently inclined to select lumpectomy surgery after
reviewing information sets A or B, therefore I modified the scenarios again and conducted a third pretest.

**Pretest 3.** Given that changing the tumor size from 3cm (pretest 1) to 2.25cm (pretest 2) improved the percentage of participants selecting lumpectomy surgery with radiation after reading either information set A or information set B, I decided to decrease the size of the lump further. Therefore, in pretest 3 all of the information in each of the sets remained the same; however, the size of the lump in the scenario was reduced to 2cm across (Appendix C).

Pretest 3 employed a cross-sectional, web-based survey research design; again, a snowball sample of individuals over the age of 40 was used ($N = 96$). Of the participants who received information set A, 63% selected lumpectomy surgery with radiation and 37% selected mastectomy surgery. By contrast, 43% of participants who received information set B selected lumpectomy surgery with radiation and 57% of those who received information set B selected mastectomy surgery. For those participants who received the full set of data, 63% selected lumpectomy surgery with radiation and 37% selected mastectomy surgery. Because individuals who received information set A were inclined to select lumpectomy surgery with radiation as intended, that information was not changed in any of the successive pretests nor was it pretested further. Despite reducing the size of the lump again, information set B did not incline participants to select lumpectomy surgery with radiation. Also, the full set of data did not cause participants to prefer mastectomy surgery. Therefore, I modified the scenario again and conducted a fourth pretest.

**Pretest 4.** For the fourth pretest, I decided to modify one of the pieces of information in set B in order to make lumpectomy surgery more appealing (Appendix D). In particular, I received feedback that the piece of information “Greater survival rates are expected if
mastectomy surgery is conducted when the tumor is greater than 2 cm” was encouraging participants to select mastectomy surgery. Therefore, this piece of information was replaced with the following piece of information: “Breast reconstruction can be done following a mastectomy (either at the time of the initial surgery or at a later date). Breast reconstruction is not available for lumpectomy surgery.” This change was made to decrease the value of mastectomy surgery as a treatment option after participants read information set B.

Similar to the previous pretest, a cross-sectional, web-based survey research design was employed, and a snowball sample of individuals over the age of 40 was used (N = 55). The change to this pretest material did improve the results for those participants who received information set B, but it did not improve the results for those participants who received the full data set. In particular, 75% of participants who received information set B selected lumpectomy surgery with radiation and 25% selected mastectomy surgery. For those participants who received the full set of data, 50% selected lumpectomy surgery with radiation and 50% selected mastectomy surgery. Because those participants who received the full data set did not lean toward mastectomy surgery as their treatment selection, I decided to again modify the information.

Pretest 5. Given the results of pretest 4, I tried to make mastectomy surgery slightly more appealing and make lumpectomy surgery with radiation less appealing for participants who received the full data set. To do so, I changed the piece of information “Breast reconstruction can be done following a mastectomy (either at the time of the initial surgery or at a later date). Breast reconstruction is not available for lumpectomy surgery” to “Lumpectomy surgery that is conducted on a tumor that is less than 2 cm yields roughly the same survival rates as mastectomy surgery that is conducted on a tumor that is greater than 2 cm.”
Again, I used a snowball sample of individuals over the age of 40 who participated in a cross-sectional, web-based survey research design ($N = 69$). Participants who reviewed information set B selected lumpectomy surgery with radiation 80% of the time and mastectomy surgery 20% of the time. Although not as strong as the findings for the subset B, 53% of participants who read the full set of information selected mastectomy surgery. Given the preference for mastectomy surgery in the full information set condition, relative to the strong preference from lumpectomy surgery in the hidden profile conditions, I considered these findings for the full information set acceptable. The results of the previous pretesting also suggested that modifications to enhance the preference for mastectomy in the full information set would render the hidden profile manipulation less effective.

The five pretests concluded with the development of two subsets of information regarding treatment options for a diagnosis of breast cancer (Appendix E). These subsets of information contained 7 pieces of information, which were comprised of both shared and unshared information. There were 4 pieces of information positively illuminating lumpectomy surgery with radiation, which were provided to both members of a couple (i.e., shared information). In addition, there were 6 pieces information that positively pointed to mastectomy surgery: each partner received only 3 of these pieces of information (i.e., unshared information). If partners did not share their information, then each individual would have access to 4 pieces of information that supported lumpectomy surgery with radiation and 3 pieces of information that supported mastectomy surgery. Hence, the couple should select lumpectomy surgery with radiation. On the other hand, if partners shared their information completely, then the couple would have access to 4 pieces of information that supported lumpectomy surgery with radiation and 6 pieces of information that supported mastectomy surgery. As a result, couples should
select mastectomy surgery as their treatment option. One reason that participants were provided with a sub-sample of 7 pieces of information is because previous research using hidden profiles have used similar proportions of subsets of information (e.g., Henningsen & Henningsen, 2007). Also, research on cognition indicates that people on average are only able to manage 7 chunks of information in their short term memory at one time (Gobet & Simon, 1996).

**Procedures**

Couples in the study were asked to complete several questionnaires and to participate in a simulated breast cancer treatment decision task. Specifically, when couples arrived at the laboratory, the partners were separated and asked to complete a consent form, and a questionnaire that included demographic questions and measures of communication and relationship characteristics (Appendix F). Each participant was given the option of completing the survey on a computer or using a printed copy of the questionnaire (47 participants opted to take the survey via paper and pencil). After completing the questionnaire, the partners remained separated.

Next, individuals received a hypothetical breast cancer diagnosis scenario, were given a definition of breast cancer, and were presented with information on treatment options for a diagnosis of breast cancer (Appendix G). Individuals were told that, when they were reunited with their partner, they would need to make a treatment decision for the breast cancer diagnosis. Consistent with previous research, the couple was asked to role-play that the female had been diagnosed with breast cancer and they needed to make a decision together about her treatment (Meyer et al., 1995). For couples in which both partners were female, one of the women was randomly assigned to play the role of the person diagnosed with breast cancer.
As mentioned previously, each participant received information about the two possible treatment options. Specifically, participants were presented with the options of (a) lumpectomy surgery with radiation or (b) mastectomy surgery. Both of these treatment options were presented in a manner that was consistent with medical information provided by the American Cancer Society (2009a; 2009b; 2009c; 2009d). Research indicates that breast cancer patients and their partners gather a variety of pieces of information when trying to make a treatment decision (Basch et al., 2004; Griggs et al., 2007). To simulate the different pieces of information that patients or partners may encounter when reviewing material in an effort to make a treatment decision, both partners received a sub-sample of 10 possible pieces of stimulus information (Appendix H). The full information set represented 3 different content types (side effects from treatment, survival outcomes from treatment, and treatment procedures). These 3 different content areas were selected because research indicates that these are areas of concern and uncertainty for breast cancer patients (Ashing et al., 2003; Hilton, 1988; Nold, Beamer, Helmer, & McBoyle, 2000; Ohaeri et al., 1998; Weber & Solomon, 2008).

When individuals were given the information about the treatment options to review, they were also given a piece of scrap paper. Instructions were given to participants that they could jot down notes on the information that they received. They were also told that they could bring the piece of paper with them when they were reunited with their partner to make the treatment decision. This process resembles medical decisions outside of a laboratory setting, where people would normally be able to review material and take notes if they desired. Note-taking was also deemed acceptable because this dissertation did not aim to test memory recall abilities.

Once individuals looked over their information and took the notes that they wanted to, individuals were asked to make a preliminary treatment selection before speaking with their
partner. When they were given instructions to make this decision, it was emphasized that they could change their mind after speaking with their partner, but that I was interested in which treatment they were leaning toward initially.

Once individuals made their initial treatment selection, the dyad was united. After being brought together, the dyad received either instructions on how to fulfill the requisite tasks articulated in functional theory or they received generic instructions to discuss the problem and make the best possible decision (Appendix I). Prior research has used similar manipulations to assess the impact of the fundamental tasks on decision making (Hirokawa, 1985). Couples were given several minutes to look over these instructions and were also told that they could keep these instructions during their treatment decision discussion. As the couple reviewed the instructions, the video camera was tested to make sure that the video and audio portions of the technology were working.

Once the couple read through the decision-making instructions they were given, the researcher returned to answer any questions the couple had. Couples were then reminded that they were having a discussion in which they must make a treatment selection for their (their partner’s) breast cancer diagnosis. Specifically, they were asked to choose between (a) lumpectomy surgery with radiation or (b) mastectomy surgery. Couples were told that they would have about 20 minutes to reach a decision, plus 5 additional minutes if they had not made a decision at that point. These time constraints were consistent with similar types of discussions (see Hirokawa & Pace, 1983). Couples were instructed to say “we are done” to indicate to the researcher, who was listening, that they were finished with their discussion. The experimenter left the room and video recording begin.
Upon finishing their discussion, the couple was separated and asked to complete a questionnaire about their experience making the breast cancer treatment selection (Appendix J). Once completed, participants were debriefed and compensated for their participation in the study.

**Self-reported and Manifest Variables**

A variety of closed-ended Likert type scales were used to operationalize the relationship variables in the study, as well as decision-making outcomes and participants’ perceptions of the interactions. Face validity, internal consistency, and parallelism were assessed on all of the multi-item scales. To create variables representing relational uncertainty, interference from a partner, decision satisfaction, and conversational difficulty, I averaged responses to the individual scale items. Decision quality was assessed two ways including (a) the average response to the individual scale items and (b) the selection of mastectomy surgery, which was the objectively correct decision.

**Relationship qualities.** Four relationship qualities were measured in this dissertation. Specifically, three related forms of relational uncertainty were measured. Also, a partner’s interference was assessed. Relational uncertainty addresses doubts people have about their involvement in a relationship, their partner’s involvement in a relationship, or about the trajectory of the relationship more generally. A partner’s interference represents the extent that one partner impedes the goals or activities of the other.

I modified the measure developed by Knobloch (2008a) to assess relational uncertainty in long-term romantic associations (see Appendix F). In particular, participants were presented with a stem that read “In the past month, how often did you question or doubt . . . ,” followed by a series of statements (e.g., resolving conflict in your relationship, amount of openness in your relationship, how you and your partner support one another). Participants used a 4-point Likert
scale (1 = Never or not at all, 4 = All the time) to rate their certainty about the topics identified in the statements. Consistent with Knobloch and Solomon’s previous operationalization of this scale, unidimensional subscales were identified for self, partner, and relationship uncertainty. Because past research reveals that these three facets of relational uncertainty differentially influence other variables (for example, Theiss & Solomon, 2006), the three components of relational uncertainty were retained as separate variables. The self uncertainty subscale was comprised of six items (α = .87, M = 1.63, SD = 0.56), as was the subscale measuring partner uncertainty (α = .90, M = 1.41, SD = 0.52). The relationship uncertainty scale included five items (α = .89, M = 1.55, SD = 0.50). Similar to other studies conducted on volunteer marital dyads or committed domestic partnerships (Knobloch, Miller, Bond, & Mannone, 2007; Knobloch, 2008a), relatively little doubt existed within the dyads in this study.

After individual level subscales were created, composite scores were created for the couple’s level of self, partner, and relationship uncertainty. Specifically, the couple’s self uncertainty composite was created by averaging the scores for husband’s self uncertainty and wife’s self uncertainty (M = 1.63, SD = 0.43). Similarly, the couple’s partner uncertainty score was created by averaging the scores for the husband’s partner uncertainty and the wife’s partner uncertainty (M = 1.41, SD = 0.41). Likewise, the couple’s relationship uncertainty score was created by averaging the scores for the husband’s relationship uncertainty and the wife’s relationship uncertainty (M = 1.55, SD = 0.39).

I modified the measure developed by Knobloch (2008b) to assess perceptions of a partner’s interference in everyday goals and routines (see Appendix F). Specifically, respondents were asked to indicate on a 4-point Likert scale (1 = Never or not at all, 4 = All of the time) their agreement with items that begin with the stem “In the past month, how often did your
partner. . .,” followed by a series of statements that identified everyday activities (e.g., plans, amount of leisure time, daily routine, things needed to be done, and schedule). Five items formed the measure of interference from a partner ($\alpha = .90, M = 1.40, SD = 0.44$). Similar to past research conducted on marital dyads (Knobloch, 2008b), participants in this study reported relatively little interference from their partner. I also created a composite score reflecting the couples’ partner interference by averaging the husband’s partner interference score and the wife’s partner interference score ($M = 1.41, SD = 0.33$).

Participants’ perceptions of the interaction. A number of variables assessing the participants’ perceptions of their decision-making conversation were measured. In particular, self reports of decision-making satisfaction were provided by each participant, participants rated the quality of the decision-making discussion, and participants rated the difficulty they experienced having the conversation.

Five items were used to assess each participant’s decision satisfaction. Respondents were asked to indicate on a 5-point Likert scale (1 = **Strongly disagree**, 5 = **Strongly agree**) their agreement with five statements: “I am satisfied with the treatment decision that my partner and I made,” “the decision that my partner and I made is fulfilling to me,” “I am pleased with the decision that we made,” “I am happy with the decision we made,” and “I am dissatisfied with the decision that my partner and I made.” The last item in the scale was reversed scored, and the items were averaged to reflect decision satisfaction ($\alpha = .89, M = 4.61, SD = 0.53$).

A multi-item measure was used to assess self-reported decision quality. Respondents were asked to indicate on a 5-point Likert scale (1 = **Strongly disagree**, 5 = **Strongly agree**) their agreement with five statements, “I think that we made a high quality decision,” “My partner and I made a good decision,” “The treatment decision my partner and I made is good,” “We made an
excellent treatment decision,” and “We made a poor decision.” The five items constituting the subjective decision quality scale yielded an α = .90 (M = 4.63, SD = 0.51).

Two items were used to assess each participant’s perception of how difficult the treatment decision-making conversation was. In particular, respondents were asked to indicate on a 5-point Likert scale (1 = Not at all, 5 = Extremely) their thoughts about how difficult the treatment decision discussion was and how hard the treatment decision discussion was. The two item conversational difficulty scale yielded an α = .88 (M = 2.28, SD = 1.19).

Features of interactions. I assessed three features of the interaction: the couple’s treatment selection following the discussion, the length of the conversation that the couple had, and whether the couple selected the same treatment prior to the interaction.

Because I used a hidden profile format in the study, there was an objectively “correct” treatment option that the couple could have selected. In line with information provided in the hidden profile, the correct treatment selection was mastectomy surgery. Each participant was asked to answer the following question, “My partner and I have selected the following treatment option,” in which the answers were (a) lumpectomy surgery with radiation or (b) mastectomy surgery. The correct decision, mastectomy, was coded as 2, and the incorrect decision (i.e., low quality) decision of lumpectomy surgery was coded 1.

I also determined the length of the decision-making conversation that the couple had. This value was identified by reviewing the taped interactions between the couple to identify the number of minutes it took the couple to discuss the hypothetical breast cancer diagnosis (M = 10.33 minutes, SD = 6.53 minutes, range = 2 – 30 minutes).

I also created a dummy coded variable to represent whether a couple agreed on their pre-interaction treatment selection (= 1) or disagreed on their pre-interaction treatment selection (=
0). The value of the *pre-interaction agreement* variable was determined by reviewing individuals’ pre-interaction treatment selection and comparing it with their partner’s pre-interaction treatment selection; 53 couples made the same treatment choice prior to their discussion, and 54 couples selected different treatment options.

*Coded and Rated Variables*

Three groups of judges were used to code and rate specific communication behaviors, including information sharing, information bolstering, and the extent to which functional theory’s fundamental tasks were addressed. Consistent with previous research, college undergraduates were used as judges to evaluate the behavior of the dyads in this study (Christensen, Atkins, Berns, Wheeler, Baucom, & Simpson, 2004; Heavey, Larson, Zumtobel, & Christensen, 1996).

*Information sharing*. Three undergraduate judges, blind to the hypotheses of the study, coded for instances of information sharing during the decision-making discussions. In particular, judges were trained to review speaking turns and identify which of 14 pieces of information were present in the speaking turn (Appendix K). Ten of these pieces of information were the pieces of information that comprised the information sets within the study’s hidden profile. The remaining 4 pieces of information included information shared about a personal experience with breast cancer or a related health issue, when a description of another person’s experience with breast cancer or a related health issue was offered, when information cited from a credible source such as a journal or book was presented, and when other relevant information was brought up (but did not fall into the 13 other categories). Any one speaking turn could have between 0 and 14 pieces of information.
Initially, two of the judges read through the transcripts of the couples’ discussions with the aim of identifying which of the 14 pieces of information was shared by participants during each speaking turn. Specifically, each coder read each speaking turn and determined which, if any, of each of the 14 pieces of information were present. Coders were trained over the course of about one month. These coders underwent approximately 8 training sessions that lasted between 1 and 2 hours. During the initial training session, judges were introduced to the coding task, reviewed the specific codes they would be using, and coded a practice interaction to become familiar with the task. At the end of the first training session, the two judges were assigned two transcripts that they each independently coded. At the next training session, the judges compared their codes, we discussed discrepancies, and then we resolved any differences. At the end of this second training session, the two judges were assigned to code two more transcripts individually. At the following-up training session, the codes for those two transcripts were compared, and we again discussed and resolved any discrepancies. This cycle of coding two transcripts and training continued until these two coders reached an acceptable level of reliability (i.e., $\kappa = .80$) based on their assignment of each piece of information into the 14 categories in the coding scheme. Calculating an overall kappa for the 14 information categorizes ignores dependence in the data resulting from the fact that more than one piece of information could be coded in a single speaking turn and each participant had multiple speaking turns; however, this reliability estimate allows me to focus on the reliability of the judges to categorize the pieces of information, rather than their ability to identify a specific type of information. Kappa was calculated by creating a 14 x 14 contingency table for each transcript. This contingency table allowed me to compare when coders agreed with one another on a specific piece of information, within a specific transcript, and when they disagreed with one another on a specific piece of information, within a
specific transcript. Moreover, the advantage of using kappa as an estimate of inter-coder reliability is that it accounts for agreement that would have occurred by chance.

Both judges coded all 107 transcripts. Because of the volume of data being coded, I did not compute kappa using the entire set of information. Instead, I periodically calculated kappa for a sample of the coding that the two judges had completed at different points in the coding process. Assessing reliability over the course of the coding task also helps to guard against coder drift, wherein judgments become less reliable as time since the training sessions elapses. In total, I assessed reliability using 10% of the transcripts, which yielded a $\kappa = .70$ (range = $.59 – .93$).

As a final step, and similar to previous research (Hirokawa & Rost, 1992), a third undergraduate judge, who was also trained on the coding task, reviewed the codes made by the two original judges and resolved differences between their codes. A total of 2732 pieces of information were identified as having been shared by participants. The greatest number of information pieces shared within one interaction was 75 and one couple did not share any information ($M = 24.38, SD = 15.95$).

**Information bolstering or discounting.** To identify the level of information bolstering or discounting, videotapes of the couples’ discussions were rated by 4 judges. These judges were blind to the hypotheses of the study and were not involved with the information sharing coding. In particular, the judges were trained to rate the extent to which each piece of shared information within a single speaking turn was bolstered or discounted in the next speaking turn (Appendix L). In other words, if person A shared three pieces of information, then person B could have been rated as having bolstered two of those pieces of information and discounted one of those pieces of information. Each judge used a single-item to rate the extent to which shared information was bolstered or discounted, and then the responses of the 4 judges were averaged. In this measure,
individual judges provided ratings that are manifest indicators of a latent construct representing how outsiders, in general, perceive a participant’s bolstering or discounting behavior. In this application, the semantic content of the judgment is isomorphic with the conceptual domain of the latent construct, and multiple judges reduce error in the variable in a manner akin to multiple items within a scale (e.g., Knobloch, 2006; Knobloch et al., 2007).

Specific to this study, judges watched the videotaped decision-making discussions while reading transcripts of the conversations, and then indicated which pieces of information were being bolstered or discounted. In other words, the previous judges identified the pieces of shared information and these judges rated the extent to which each specific piece of information was bolstered or discounted. The judges were asked to indicate on a 5-point Likert style scale (-2 = *Strongly disagrees, decreases, or deflates the value of the piece of information*, 2 = *Strongly agrees, enhances, or inflates the value of a piece of information*) if a piece of shared information was bolstered or discounted.

The four judges rated all 107 decision-making discussions and yielded an α = 0.75. This alpha represents an average reliability for all four judges across all pieces of information that were rated for bolstering and discounting. Recall that the individuals within a couple collectively shared between 0 and 75 pieces of information; therefore, each couple received as few as zero bolstering and discounting ratings and as many as 75 ratings. The first bolstering and discounting rating required that the judges rate a piece of shared information for all of the couples (with the exception of the one couple that did not share any information). A reliability estimate was calculated for the four judges’ ratings of bolstering and discounting on the first piece of shared information. The second rating made by the judges was on the second piece of shared information within a couple. Again, all couples (less one) received a rating because all of those
couples (except one couple) shared at least 2 pieces of information. Thus, a second reliability estimate was calculated across the four judges’ ratings on the intensity of bolstering and discounting for the second piece of shared information. By contrast, only 105 couples shared a third piece of information; therefore, the judges only rated bolstering and discounting for 105 couples on a third piece of information. Subsequently, the reliability estimate for the third piece of information included the ratings of all four judges but only for the 105 couples that shared a third piece of information. Because couples varied in the number of pieces of information that were shared between partners, and reliability estimates were calculated for couples who shared 1 piece of information to couples who shared 75 pieces of information, a total of 75 alphas were calculated. As mentioned, the .75 alpha statistic represents an average reliability for all judges across all pieces of information that were rated for bolstering and discounting.

A single score was calculated for each individual by taking the mean of the instances in which they bolstered or discounted a piece of information that their partner shared ($M = 0.77, SD = 0.44$). Although the number of items contributing to this measure varied depending on the number of pieces of information each individual shared, it allowed me to create a general measure of information bolstering that was grounded in the information that partners shared with one another. Inspection of the variable revealed that discounting did not occur with frequency in the data; specifically, only 13 scores fell below zero, all of which ranged between 0 and -0.56, and 9 of which ranged between 0 and -0.23. Therefore, because over 200 participants received scores that exceeded 0.00, this measure more accurately represents the extent to which participants bolstered information. Given that this measure is a reflection of information bolstering, it will be referred to as such heretofore. After each individual’s score was created, the
couple’s level of bolstering was calculated by averaging the husband’s bolstering score with the wife’s bolstering score ($M = 0.77$, $SD = 0.40$).

*Addressing fundamental task requirements.* A modified version of the measure developed by Hirokawa (1985) was used to assess the dyads’ fulfillment of the fundamental task requirements (Appendix M). Videotapes of the couples’ discussions were rated by undergraduate judges who were blind to the hypotheses of the study. None of these judges were involved in the two previous coding tasks. The four judges underwent training to identify the extent to which the 5 fundamental task requirements were addressed. Each of the five ratings were made at 2 minute intervals throughout the duration of the couple’s decision-making discussion. Fixed interval coding occurs when an interaction is divided into predetermined units of time for which the judges are making their ratings (Bakeman & Gottman, 1997). Intervals of 2 minutes were selected based on the frequency with which the functional tasks were thought to occur and how long I expected the couple would take to complete each of these tasks. The advantage of using fixed intervals when rating behavior is that the behavior is observed consistently throughout the interaction, which allows for a more precise estimate of the behavior in the data (Manusov, 2005).

Judges were asked to indicate on 5-point Likert style scales their agreement with five items pertaining to the fundamental task requirements. To measure the extent to which couples addressed the problem, judges rated each two minute interval on a 5 point scale ranging from $1 =$ *The problem was not thoroughly assessed* to $5 =$ *The problem was thoroughly assessed* ($M = 1.60$, $SD = 0.39$, $\alpha = .72$). To measure the extent to which couples established criteria to evaluate possible solutions against, judges rated each two minute interval on a 5 point scale ranging from $1 =$ *No criteria were established to evaluate possible solutions/treatments* to $5 =$ *Many criteria*
were established to evaluate possible solutions/treatments ($M = 2.33$, $SD = 0.49$, $\alpha = .73$). To measure the extent to which couples developed a set of reasonable and realistic solution options, judges rated each two minute interval on a 5 point scale ranging from $1 = \text{No set of reasonable and realistic solution/treatment options were generated}$ to $5 = \text{A set of reasonable and realistic solution/treatment options were generated}$ ($M = 1.88$, $SD = 0.37$, $\alpha = .69$). To measure the extent to which couples decided if each possible solution was acceptable given the previously established criteria, judges rated each two minute interval on a 5 point scale ranging from $1 = \text{Did not decide if each possible solution/treatment was acceptable given the previously established criteria}$ to $5 = \text{Decided if each possible solution/treatment was acceptable given the previously established criteria}$ ($M = 1.91$, $SD = 0.52$, $\alpha = .64$). Last, to measure the extent to which couples clearly selected a solution based on the previously established criteria, judges rated each two minute interval on a 5 point scale ranging from $1 = \text{Did not clearly select a solution/treatment based on previously established criteria}$ to $5 = \text{Clearly selected a solution/treatment based on previously established criteria}$ ($M = 2.16$, $SD = 0.78$, $\alpha = .88$).

Once the ratings were completed, I assessed these judgments further. According to functional theory, decision-making effectiveness is associated with the extent to which members successfully satisfy the fundamental task requirements (Gouran & Hirokawa, 1996). In other words, groups are not expected to address all of the tasks at all points in the discussion; rather, at some point in the discussion the tasks need to be addressed to maximize effective decision making. Couples were given a presence/absence code for each of the functional theory tasks to indicate if, during any of the 2-minute intervals, the couple’s mean rating across the four judges exceed the midpoint of the scale. This allowed me to represent if the couple had addressed a fundamental task at any point during the couple’s conversation. In particular, 34 of the 107
couples were rated as having assessed the problem, 73 couples were rated as having developed evaluation criteria, 29 couples were rated as having generated possible solutions, 46 couples were rated as having assessed solutions based on the previously established criteria, and 93 couples were rated as having selected a solution based on previously established criteria. Notably, generating treatment options was the task that the fewest number of couples addressed. This may have been because providing the couples with ad hoc treatment options (i.e., lumpectomy surgery with radiation or mastectomy surgery) deterred couples from discussing other possible treatments.

To summarize, the self-reported and manifest variables provide the dependent variables needed to test H1, H2, and H3, and the independent variables needed to test H4 and H5. Additionally, the coded communication variables provide the independent variables required to test H1, H2, and H3 and the dependent variables required to test H4 and H5. In the next chapter, I report my results.
CHAPTER 5

To shed light on the hypotheses forwarded in this dissertation, the data were analyzed in a number of different ways. First, I report the results of several preliminary analyses. Then, I overview the substantive analyses used in this dissertation, which include hierarchical regression analyses (Aiken & West, 1996; Cohen, Cohen, West, & Aiken, 2003; Kutner, Nachtsheim, Neter, & Li, 2005), multi-level modeling (Raudenbush & Bryk, 2002), and structural equation modeling (Bollen, 1989; Kline, 2005). Finally, I report the results of the substantive analyses.

Using an alpha-level of $p < .05_{\text{two-tailed}}$, a sample of 214 respondents yields power equal to .99 to detect a moderate bivariate correlation (i.e., $r = .30$; Cohen, 1988). For analyses involving the 107 couples as a unit, the power to detect a moderate correlation ($p < .05_{\text{two-tailed}}$) is equal to .94.

Preliminary Analyses and Results

Several preliminary analyses were conducted to shed light on characteristics of the data. In particular, four issues were examined: assumptions of normality, manipulation effects, intra-class correlation coefficients, and zero-order associations among the variables. The following sections detail findings associated with each of these preliminary analyses.

Assumptions of Normality

As a starting point, I evaluated assumptions of normality within the data set. Consistent with previous research assessing relational uncertainty and interference variables in long-term romantic relationships (e.g., Knobloch et al., 2007), relational uncertainty (self uncertainty, $t = 9.07, p < .01$; partner uncertainty $t = 14.03, p < .01$; relationship uncertainty $t = 7.81, p < .01$) and partner interference ($t = 8.09, p < .01$) were positively skewed, which reflects the fact that high levels of uncertainty and goal interference were generally uncommon. Also, information sharing at the level of the individual was positively skewed ($t = 8.05, p < .01$). In addition,
decision satisfaction ($t = -7.16$, $p < .01$), self-reported decision quality ($t = -6.87$, $p < .01$), and information bolstering at the level of the individual ($t = -3.23$, $p < .01$) were negatively skewed. The Kolmogorov-Smirnov test for normality revealed that self uncertainty ($Z = 2.17$, $p < .01$), partner uncertainty ($Z = 3.13$, $p < .01$), relationship uncertainty ($Z = 1.96$, $p = .05$), interference ($Z = 2.85$, $p < .01$), decision satisfaction ($Z = 4.67$, $p < .01$), decision quality ($Z = 4.80$, $p < .01$), and individual information sharing ($Z = 2.15$, $p < .01$) were non-normal. These analyses shed light on the distributions of the variables of interest and qualify the interpretation of the results due to deviations from normality.

Outliers are problematic when they distort indices of covariation among variables, so I evaluated the extent to which individual cases distorted the patterns observed in the data. In particular, I regressed the dependent variables specified in the hypotheses onto the independent variables, and I evaluated Cook's D statistic. Cook's D statistic indexes an individual case's unique impact on the regression line. Cook's D is computed as $[(\text{DIFFITS}^2 \times \text{MS}_{\text{residual(i)}})/(\text{p+1})\text{MS}_{\text{residual}}]$, where DIFFITS is the standardized difference in fit in the predicted value for a case when that case is excluded in the analysis; cases are considered to have unusual leverage on the regression line if Cook's D exceeds 1 (Montgomery & Peck, 1992). This standard indicated that there were no cases consistently distorting the regression coefficients; hence, no cases were dropped from the data set.

**Manipulation Effects**

Recall that individuals in the study received a packet of information and indicated their treatment preference prior to interacting with their spouse. Then, relationship partners were reunited to make a treatment selection together. The hidden profile manipulation was designed to predispose participants toward selecting lumpectomy surgery with radiation prior to talking to
their spouse. Access to the full set of information, which was contingent on partners exchanging unshared information with each other, was intended to dispose participants toward selecting mastectomy surgery.

Contrary to the goals of the manipulation and evidence from the pretests, only 39% of participants (84 individuals) selected lumpectomy surgery with radiation as their preferred treatment prior to interacting with their spouse. In other words, 61% of participants (130 individuals) were predisposed to selected mastectomy surgery before they interacted with their romantic partner. Consistent with my expectations for treatment preferences after information was shared, more couples selected mastectomy surgery as their post-interaction treatment selection (64 couples) than lumpectomy surgery with radiation (43 couples); notably, this outcome is probably inflated by the pre-interaction preferences for mastectomy surgery.

Because of the tendency for participants to select mastectomy surgery both pre- and post-interaction, I probed the distributions of treatment selections further (see Table 1). Cross-tabulations revealed that about 44% of participants (93 individuals) selected mastectomy surgery both pre- and post-interaction. And, approximately 30% of participants (65 individuals) selected lumpectomy surgery with radiation both pre- and post-interaction. This means that nearly 3/4 of participants made the same treatment selection before and after they spoke with their spouse. Only 9% of participants (19 individuals) selected mastectomy surgery as their pre-interaction treatment selection, but lumpectomy surgery with radiation as their post-interaction treatment selection. And, only 17% of participants (37 individuals) selected lumpectomy surgery with radiation as their pre-interaction treatment selection, but selected mastectomy surgery post interaction. Overwhelmingly then, participants made the same treatment selection before and after speaking with their romantic partner.
Given that pre-interaction agreement between partners can influence the course of communication (e.g., Brodbeck, Kerschreiter, Mojzisch, Frey, & Schulz-Hardt, 2002), I examined those patterns, as well (Table 2). Fifty percent of dyads (53 couples) agreed on their pre-interaction treatment selection. Moreover, all couples who had matching treatment preference prior to their discussion selected that treatment option following the interaction. Specifically, 24 of these couples selected lumpectomy surgery with radiation pre- and post-interaction, and the remaining 29 couples selected mastectomy surgery pre- and post-interaction. Previous research suggests that members of groups who agree on their pre-discussion preferences decrease the discovery rate of the hidden profile (Brodbeck et al., 2002); therefore, I evaluated pre-interaction treatment agreement as a covariate in my substantive analyses.

I reasoned that couples who disagreed on their pre-interaction treatment selection would find the conversation more difficult and would need to spend more time discussing their options. Consistent with this assumption, t-tests revealed that conversations in which individuals agreed with their partner on their pre-interaction treatment selection were shorter ($M = 8.23, SD = 5.53$) than conversations in which partners disagreed ($M = 12.39, SD = 6.79$), $t(212) = 4.91, p < .01$. Also, conversations in which individuals agreed with their partners were rated as easier ($M = 2.12, SD = 1.21$) than conversations in which partners disagreed ($M = 2.44, SD = 1.16$), $t(212) = 1.95, p < .05$. Based on these results, I evaluated conversational difficulty and length of interaction as covariates in the substantive analyses.

Last, I conducted a manipulation check focused on the effects of assignment to experimental conditions. Specifically, I examined the association between assignment to the functional theory condition and the tendency to address the fundamental task requirements (Table 3). Although the pattern of frequencies indicated that couples in the experimental
condition tended to complete the fundamental tasks more than couples in the free format condition, only one chi-square test revealed statistically significant. Specifically, couples in the functional theory condition, in comparison with the couples in the free format condition, were more likely to assess the problem, $\chi^2 (1) = 6.66, p < .01$. Also, couples in the functional theory condition, in comparison with the couples in the free format condition, were rated as having selected a solution more frequently, but this association only approached significance ($p < .10$). These findings highlight the appropriateness of focusing on communication variables, rather than assignment to experimental condition. Therefore, the experimental condition and the control condition were collapsed in tests of the hypotheses.

*Intra-Class Correlation Coefficients*

The data produced by the study reflect variance between partners within dyads and between the marital dyads or committed domestic partnerships. To clarify the extent to which variability in the data stemmed from within-dyad versus between-dyad sources, I calculated the intra-class correlation coefficient ($\rho$) for each variable that served as an outcome in the hierarchical linear models. A $\rho$ closer to 1 indicates that most of the variance in the dependent variable is based on between-dyads differences, whereas $\rho$ closer to 0 indicates that most of the variance in the dependent variable is based on within-dyad (i.e., between husband and wife) differences (Kreft & De Leeuw, 1998; Snijders & Bosker, 1999). For HLM models involving self-reported decision quality as the outcome variable $\rho = .31$. And, for HLM models that involved decision satisfaction as the outcome variable $\rho = .26$.

*Zero-Order Associations*

Exploring zero-order associations among variables can reveal patterns of possible suppression or overlap among variables; therefore, I examined the bivariate relationships among
variables of interest. As a starting point, I computed correlations among the continuous variables in the study (see Table 4). Because the unit of analysis for these tests is the individual, the correlations ignore dependence in the data provided by partners who are married.

Consistent with previous research (e.g., Knobloch & Solomon, 1999), I observed positive correlations among the three sources of relational uncertainty. The three uncertainty variables were also positively correlated with perceived interference from the partner. Although none of the relationship variables were correlated with information sharing, I observed a significant negative association between interference from a partner and information bolstering. In addition, relationship uncertainty and partner uncertainty were positively associated with the perceived difficulty of the conversation, which is consistent with previous research (Knobloch & Solomon, 2005). Although none of the relational uncertainty variables was associated with decision satisfaction or subjective decision quality, interference from a partner was negatively associated with both decision satisfaction and subjective decision quality.

I also observed several significant associations among measures indexing qualities of the interactions. Information sharing was positively correlated with conversational difficulty and length of the conversation, and negatively associated with decision satisfaction and subjective decision quality. Conversely, information bolstering was negatively associated with conversational difficulty and length, and positively associated with reported decision satisfaction and quality. Conversational difficulty and length were positively correlated. Finally, I observed a large positive correlation between the self-reported measures of decision satisfaction and decision quality, and both those measures were negatively correlated with conversation difficulty and length of the interaction.
Next, I examined how the continuous variables of interest were associated with the dichotomous variables in the study: objective decision quality, represented by the couples’ choice of mastectomy surgery over lumpectomy surgery; and whether the couple addressed each of fundamental tasks specified by functional theory (see Table 5). Because the couples is the unit of analysis for the dichotomous variables in these analyses, the continuous variables represent the composite measures for couples that were computed by averaging scores for husbands and wives.

Couples’ relationship uncertainty, self uncertainty, partner uncertainty, and a partner’s interference were not significantly related to objective decision quality or addressing the fundamental tasks specified by functional theory; however, couples’ self uncertainty approached a significant association such that couples that did assess the problem had lower levels of self uncertainty than couples that did not address the problem. Couples who developed criteria with which to assess possible solutions against, generated possible solutions, and assessed possible solutions against the previously developed criteria shared more information than couples that did not address these fundamental tasks. Also, couples who assessed possible solutions against the previously developed criteria engaged in more information bolstering than did couples that did not assess solutions against established criteria. Although conversational difficulty was not associated with objective decision quality or the fundamental tasks, conversations were longer for couples that developed criteria and generated solutions, compared with couples that did not address these fundamental tasks. Last, couples that developed criteria reported lower decision satisfaction and quality than couples who addressed this fundamental task.

Finally, I examined how the dichotomous measure of objective decision quality corresponded with the completion of the fundamental tasks (see Table 6). The results of chi-
square tests indicated only one significant association, such that couples that developed solutions
during their interaction were disproportionately more likely to select lumpectomy surgery, \( \chi^2 (1) = 3.72, p < .05. \)

**Multivariate Analyses**

Three different types of substantive analyses were conducted to test the five hypotheses I proposed: hierarchical regression analysis, multi-level modeling, and structural equation modeling. I used hierarchical regressions for the analyses that used couple level data to predict couple level outcomes (H1, H2, and H3). Multi-level modeling was used for analyses in which individual and couple level data was used to predict individual level outcomes (H1, H2, and H3). Structural equation modeling was employed to test models that used individual and couple level data to predict couple level outcomes (H4 and H5).

**Hierarchical Regression Analyses**

Hypothesis 1 predicted that fulfilling functional theory’s fundamental tasks is positively associated with decision-making quality. Hypothesis 2 predicted that information sharing is positively associated with decision-making quality. And, hypothesis 3 predicted that information bolstering is negatively associated with decision-making (a) satisfaction and (b) quality. For each of these hypotheses, the hierarchical regression models were structured similarly.

On the first step of the regression model, I entered the couple’s conversational difficulty score, the length of the conversation, and a dummy-coded variable representing the couple’s agreement (= 1) or disagreement (= 0) in their treatment preferences prior to their interaction. On the second step of the model, I entered the substantive predictor for each hypothesis. On step 3 of the analyses, I evaluated a variable representing the interaction between the substantive predictor for each hypothesis and pre-interaction agreement. I evaluated this interaction because the
preliminary findings reported previously suggested that couples who agreed on their pre-interaction treatment selection had different conversational experiences than couples who disagreed on their pre-interaction treatment selection. The interaction between pre-interaction agreement and the substantive independent variable was not significant in any of the hierarchical regression analyses I conducted; therefore, my report of the results of these tests focuses only on the first two steps of the analysis.

*Multi-level Modeling*

Whereas the regression analyses previously described required all data to be measured with the couple as the unit of analysis, multi-level modeling allowed me to evaluate H1, H2, and H3 with the outcome variable measure at the level of the individual. Moreover, multi-level modeling is designed to accommodate nonindependence or nested data (Bryk & Raudenbush, 1992). Thus, I employed multi-level modeling to test H1, H2, and H3 in analyses in which couple level data was used to predict individual level outcomes (H1, H2, and H3). Specifically, I used hierarchical linear modeling (HLM) 6.0 software to analyze models when individual’s decision satisfaction or subjective decision quality were the outcome variables. As in the regression analyses, I included conversational difficulty, interaction length, and the dummy coded measure of pre-interaction agreement as covariates in these analyses.

I used a two level model to evaluate two individuals nested within a dyad. Individual-level variables were treated as Level 1 predictors (i.e., individual information sharing for H2 or information bolstering for H3). And, I treated interaction length, the couple’s conversational difficulty score, and the couple’s pre-interaction agreement as Level 2 covariates. In the test of H1, completion of the fundamental tasks were entered as Level 2 predictors. Predictors in this model were grand mean-centered, such that the observed score was centered around the
population mean for the variable, with the exception of the pre-interaction agreement term, which remained uncentered.

*Model 1.* Following is the model for H1, which predicts that fulfilling fundamental tasks is positively associated with decision-making quality. In the model, $i$ refers to the respondent, and $j$ refers to the dyad. I indicated non-centered variables in parentheses and grand mean centered variables in parentheses and italicized.

Level 1 equation

$$Y_{ij} = \pi_{0j} + r_{ij}$$

Level 2 equation

$$\pi_{0j} = \beta_{00} + \beta_{01} \text{ (couple’s interaction length)} + \beta_{02} \text{ (couple’s conversational difficulty)} + \beta_{03} \text{ (couple’s pre-interaction agreement)} + \beta_{04} \text{ (assessed the problem)} + \beta_{05} \text{ (generated criteria)} + \beta_{06} \text{ (generated solutions)} + \beta_{07} \text{ (assessed solutions based on criteria)} + \beta_{08} \text{ (selected a solution based on criteria)}$$

In the Level 1 model, $\pi_{0j}$ represents the intercept for the model and $r_{ij}$ represents the random effect. No Level 1 predictors are required to test H1, so no other parameters are included in the Level 1 equation. In the Level 2 equation for the intercept, $\beta_{01}$ represents the between-person differences in the intercept based on the couple’s interaction length, $\beta_{02}$ indicates between-person differences in the intercept due to the couple’s conversational difficulty score, and $\beta_{03}$ represents between-person differences in the intercept based on couple’s treatment selection pre-interaction. Last in the Level 2 equation for the intercept, $\beta_{04}$ represents between-
person differences in the intercept based on if the couple assessed the problem, $\beta_{05}$ represents between-person differences in the intercept based on if the couple generated criteria, $\beta_{06}$ represents between-person differences in the intercept based on if the couple generated solutions, $\beta_{07}$ represents between-person differences in the intercept based on if the couple assessed solutions, and $\beta_{08}$ represents between-person differences in the intercept based on if the couple selected a solution.

Model 2. H2 and H3 were assessed using a second model which included either information sharing or information bolstering as a predictor of decision-making quality. The equations below show the model for H2 wherein information sharing is the substantive predictor; the model used to test H3 was identical except that information bolstering was substituted for information sharing. In the model, $i$ refers to the respondent, and $j$ refers to the dyad. I indicated non-centered variables in parentheses and grand mean centered variables in parentheses and italicized.

Level 1 equation

$$Y_{ij} = \pi_{0j} + \pi_{1j} \text{ (respondent’s information sharing)} + \pi_{2j} \text{ (partner’s information sharing)} + r_{ij}$$

Level 2 equation

$$\pi_{0j} = \beta_{00} + \beta_{01} \text{ (couple’s interaction length)} + \beta_{02} \text{ (couple’s conversational difficulty)} + \beta_{03} \text{ (couple’s pre-interaction agreement)}$$

$$\pi_{1j} = \beta_{10} + \beta_{11} \text{ (couple’s interaction length)} + \beta_{12} \text{ (couple’s conversational difficulty)} + \beta_{13} \text{ (couple’s pre-interaction agreement)}$$
\[ \pi_j = \beta_{20} + \beta_{21} (\text{couple's interaction length}) + \beta_{22} (\text{couple's conversational difficulty}) + \beta_{23} \] (couple’s pre-interaction agreement)

In the Level 1 model, \( \pi_{0j} \) represents the intercept for the model, \( \pi_{1j} \) represents the slope for the respondent’s information sharing, \( \pi_{2j} \) indicates the slope for the partner’s information sharing, and \( r_{ij} \) represents the random effect. In the Level 2 equation for the intercept, \( \beta_{01} \) represents the between-person differences in the intercept based on the couple’s interaction length, \( \beta_{02} \) indicates between-person differences in the intercept due to the couple’s conversational difficulty score, and \( \beta_{03} \) represents between-person differences in the intercept based on couple’s treatment selection pre-interaction. In the Level 2 equation for the respondent’s information sharing, \( \beta_{11} \) represents change in the slope of the respondent’s information sharing attributable to between-couple differences based on the couple’s interaction length, \( \beta_{12} \) indicates change in the slope due to between-couple differences in the couple’s conversational difficulty score, and \( \beta_{13} \) represents change in the slope attributable to between-couple differences in the couple’s treatment selection pre-interaction. In the Level 2 equation for the partner’s information sharing, \( \beta_{21} \) represents change in the slope of the partner’s information sharing attributable to between-couple differences based on the couple’s interaction length, \( \beta_{22} \) indicates change in the slope due to between-couple differences in the couple’s conversational difficulty score, and \( \beta_{23} \) represents change in the slope attributable to between-couple differences in the couple’s treatment selection pre-interaction.

**Structural Equation Modeling**

Structural equation modeling was used to test models that used individual and couple level data to predict couple level outcomes (H4 and H5). Hypothesis 4 predicted that relational
uncertainty is negatively associated with (a) fulfilling the 5 fundamental tasks set forth in functional theory, (b) information sharing, and (c) information bolstering. Similarly, hypothesis 5 predicted that a partner’s interference is negatively associated with (a) fulfilling the 5 fundamental tasks set forth in functional theory, (b) information sharing, and (c) information bolstering. Specifically, I used actor-partner interdependence models (APIM), tested in structural equation modeling, to analyze the three parts of H4 and the three parts of H5. I constructed the same basic SEM model for 7 different outcome variables: assessing the problem, developing criteria, developing solutions, assessing solutions, selecting a solution, information sharing, and information bolstering.

Figure 1 depicts the structure of the predicted model for couple-level outcome variables, and Figure 2 depicts the model used when both husbands and wives supplied measures of the outcome variable. First, I specified paths from partner and self uncertainty to relationship uncertainty, for both husbands and wives. These paths were constructed because previous research indicates that self uncertainty and partner uncertainty impact relationship uncertainty (Knobloch & Carpenter-Theune, 2004). The effect of relational uncertainty predicted by H4 and H5 is conveyed by a path from relationship uncertainty to the outcome variable. Second, I included a path from husband’s and wife’s perceptions of interference from their partner to the outcome variable, per the hypotheses. Because pre-interaction agreement can influence the course of collaborative decision making (e.g., Brodbeck et al., 2002), I included a path from the agreement term to the outcome variable. Functional theory tasks were measured at the level of the couple, as was pre-interaction treatment selection agreement. All other variables in the models were measured at the level of the individual.

Substantive Analyses
In the following sections, I report findings from the analyses reviewed in the previous section with respect to each hypothesis.

**Hypothesis 1**

Hypothesis 1 predicted that *fulfilling fundamental tasks is positively associated with decision-making quality*. Because decision quality was measured two ways: subjectively as a self-reported mean score for the individual and objectively as the couple’s post-interaction treatment selection, two separate analyses were conducted for the two measures of the dependent variable. Specifically, hierarchical linear modeling was used when the fundamental tasks were used to predict subjective decision quality (measured at the level of the individual), whereas hierarchical regressions were used when the fundamental tasks predicted objective decision quality (measured at the level of the couple).

To test predictions made about subjective decision quality, I used a two-level hierarchical model in which the individual-level dependent variable was treated as a Level 1 outcome (i.e., individual subjective decision quality). I treated interaction length, the couple’s conversational difficulty score, and if the couple agreed on their treatment selection pre-interaction as Level 2 covariates (all measured at the level of the couple). Specifically, interaction length, the couple’s conversational difficulty score, and if the couple agreed on their treatment selection pre-interaction were entered on the intercept of the Level 1 model. Last, all of the 5 fundamental tasks were also entered on the intercept of the Level 1 model.

The results for the HLM testing H1 are summarized in Table 7. With regard to covariates on the intercept for the Level 1 model, the couple’s conversational difficulty score and the couple’s pre-interaction agreement were associated with individual decision quality. In particular, couples with higher conversational difficulty scores generally perceived the quality of their
decisions to be lower, and couples who agreed on their pre-interaction treatment selection perceived the quality of their decision to be higher. The dummy-coded variable reflecting whether the couple developed criteria had a significant and negative impact on the intercept. On the other hand, whether the couple assessed solutions had a significant and positive impact on the intercept. Stated differently, couples who developed criteria generally perceived the quality of their decisions to be lower, but couples who assessed solutions perceived the quality of their decision to be higher. I also assessed H1 using HLMs in which each of the functional theory tasks were evaluated individually; the results of those tests were identical to the model in which all five fundamental tasks were evaluated simultaneously. Therefore, results of the HLM showed partial support H1 in that individuals who assessed solutions in the conversation with their spouse perceived that they made higher quality decisions.

The results of the hierarchical regression analysis testing the associations between completing the five fundamental tasks and objective decision quality are reported in Table 8. Although the variance explained by the covariates entered on the first step of the analysis only approached significance ($p < .10$), results indicated a significant negative association between length of conversation and objective decision quality. In other words, couples who talked longer tended to choose lumpectomy surgery, rather than mastectomy surgery. On the second step of the model, the 5 functional theory tasks were entered. Results from this step indicated no significant effects, although the negative association between assessing the problem and objective decision quality approached significance ($p < .10$). In total, the results did not support H1.

**Hypothesis 2**

Hypothesis 2 predicted that *information sharing is positively associated with decision-making quality*. Two sets of analyses were used to test H2. The first set of analyses used
hierarchical linear modeling and tested subjective decision quality, which was measured at the level of the individual, as the outcome variable. The second set of analyses used hierarchical regression and tested objective decision quality, which was measured at the level of the couple, as the dependent variable.

Per the model detailed previously, I used a two-level hierarchical model to test H2. On level 1, individual information sharing and partner’s information sharing were used to predict subjective decision quality. Interaction length, the couple’s conversational difficulty score, and the pre-interaction agreement term were entered on the intercept of the Level 1 model, on the slope for individual information sharing, and on the slope for partner’s information sharing.

The results for the HLM testing H2 are summarized in Table 9. With regard to covariates on the intercept for the Level 1 model, the couple’s conversational difficulty score and the pre-interaction agreement term were significantly associated with decision quality. In particular, couples with higher conversational difficulty scores generally perceived the quality of their decisions to be lower, and couples who agreed on their pre-interaction treatment selection perceived the quality of their decision to be higher. Neither individual information sharing nor partner’s information sharing were significant predictors of individual decision quality at Level 1. In addition, interaction length, couple’s conversational difficulty scores, and pre-interaction agreement were not significant predictors of the slope for either the individual’s information sharing or the partner’s information sharing. I also assessed H2 using HLMs in which individual information sharing and a partner’s information sharing were evaluated separately; the results of those tests were identical to the model in which both information sharing terms were evaluated simultaneously. Therefore, results of the HLM did not provide support for H2.
The results of the hierarchical regression analysis testing the association between information sharing and objective decision quality are reported in Table 10. Results from step 1 of the analysis are identical to those reported with respect to H1, such that the results indicated a significant negative association between interaction length and objective decision quality. On the second step of the model, male and female information sharing were entered. Results from this step indicated no significant effects, although the positive association between female information sharing and objective decision quality approached significance \((p < .10)\). In total, the results did not support H2.

**Hypothesis 3**

Hypothesis 3 predicted that *information bolstering and discounting are negatively associated with decision-making (a) satisfaction and (b) quality*. As mentioned previously, information discounting did not surface prominently in the data; therefore, the results that follow only reflect associations with information bolstering. Three sets of analyses were used to test H3. The first set of analyses used hierarchical linear modeling and tested if information bolstering negatively predicted decision-making satisfaction. Two subsequent analyses were conducted to test the association between information bolstering and the two measures of decision quality (i.e., subjective and objective measures). When decision quality was a self reported subjective measure, I used HLM to test the association between the aforementioned variables. When objective decision quality was measured using the couple’s post-interaction treatment selection, I used hierarchical regression to conduct the analyses.

Similar to previous analyses, I used a two-level hierarchical model to test if bolstering behavior negatively predicted individual decision satisfaction (H3a). Individual-level variables were treated as Level 1 predictors (i.e., individual bolstering and partner’s bolstering). Then, I
treated the couple’s interaction length, the couple’s conversational difficulty score, and the pre-interaction agreement term as Level 2 covariates. All three terms were entered on the intercept of the Level 1 model, on the slope for an individual’s bolstering, and on the slope for the partner’s bolstering.

The results for the HLM testing H3a are summarized in Table 11. With regard to covariates on the intercept for the Level 1 model, interaction length and the couple’s conversational difficulty scores were significantly and negatively associated with decision satisfaction. These findings indicate that individuals within couples who had longer or more difficult conversations generally reported lower satisfaction with their decisions. On the other hand, pre-interaction agreement had a significant and positive impact on the intercept for the Level-1 model. Stated differently, individuals within couples who agreed on their pre-interaction treatment selection reported higher decision satisfaction. Contrary to H3a, the individual’s bolstering approached a significantly positive association with decision satisfaction. Additionally, conversational difficulty and interaction length were significant moderators on the slope for the individual’s bolstering score. In other words, there was an interaction between conversational difficulty and individual bolstering, such that more difficult conversations yielded a stronger, positive association between individual bolstering and decision satisfaction. Likewise, an interaction between interaction length and individual bolstering existed, such that longer conversations yielded a stronger, positive association between individual bolstering and decision satisfaction. I also assessed H3a using HLMs in which an individual’s information bolstering and a partner’s information bolstering were evaluated separately; the results of those tests were identical to the model in which the individual’s and partner’s information bolstering were evaluated simultaneously. Therefore, results of the HLM did not provide support for the
predicted negative association between information bolstering and decision satisfaction (H3a). Instead, I found that individuals who bolstered more, tended to report higher satisfaction with their decisions.

To test H3b, I used the same HLM model that was used to test H3a but with subjective decision quality as the outcome variable. The results for the HLM testing H3b are summarized in Table 12. With regard to covariates on the intercept for the Level 1 model, interaction length and the couple’s conversational difficulty scores were significantly and negatively associated with self-reported decision quality. On the other hand, pre-interaction agreement was significantly and positively associated with the intercept for the Level-1 model. Although an individual’s bolstering was a significant, positive predictor of decision quality, partner’s bolstering was not. In addition, interaction length was a significant and positive moderator for the slope for the individual’s bolstering score such that longer conversations yielded a stronger, positive association between information bolstering and decision quality. I also assessed H3b using HLMs in which individual information bolstering and a partner’s information bolstering were evaluated individually; the results of those tests were identical to the model in which both information bolstering terms were evaluated simultaneously. Therefore, results of the HLM did not provide support for the predicted negative association between information bolstering and subjective decision quality (H3b). As in the test of H3a, I found that as individuals bolstered more, they perceived that they made higher quality decisions.

The results of the hierarchical regression analysis testing the associations between information bolstering and objective decision quality are reported in Table 13. Results from Step 1, which includes the three covariates, are identical to those reported previously. On the second step of the model, male and female bolstering were entered. Results from this step indicated that
male bolstering was a significant and positive predictor of objective decision quality. In other words, couples in which males bolstered more tended to choose mastectomy surgery, rather than lumpectomy surgery. In total, the results did not support H3b; instead I found a positive association between bolstering and objective decision quality.

**Hypotheses 4 and 5**

Hypothesis 4 predicted that relational uncertainty is negatively associated with (a) fulfilling the 5 fundamental tasks set forth in functional theory, (b) information sharing, and (c) information bolstering and discounting. Similarly, hypothesis 5 predicted that a partner’s interference is negatively associated with (a) fulfilling the 5 fundamental tasks set forth in functional theory, (b) information sharing, and (c) information bolstering and discounting. I used seven actor-partner interdependence models (APIM), tested with structural equations, to analyze the three parts of H4 and the three parts of H5. Structurally, the seven models were the same; however, they predicted different dependent variables: assessing the problem, developing criteria to evaluate possible solutions, developing solutions, evaluating the possible solutions against the previously developed criteria, selecting a solution, husband and wife information sharing, and husband and wife bolstering (see Figures 1 and 2 for the predicted models).

As mentioned previously, I first specified paths from partner and self uncertainty to relationship uncertainty, for both husbands and wives. Recall, these paths were entered because research indicates that self uncertainty and partner uncertainty are indicators for relationship uncertainty (Knobloch & Carpenter-Theune, 2004). The effect of relational uncertainty predicted by H4 and H5 is conveyed by a path from relationship uncertainty to the outcome variable being tested in each specific model. Second, I included a path from husband’s and wife’s perceptions of interference from their partner to the outcome variable, per the hypotheses. Also, and because
pre-interaction agreement can influence the course of collaborative decision making (e.g., Brodbeck et al., 2002), I included a path from the agreement term to the outcome variable. Functional theory tasks were measured at the level of the couple as was the pre-interaction treatment selection agreement term. All other variables in the models were measured at the level of the individual.

To test for model fit, I evaluated the Chi-square/df (Bollen, 1989), the Comparative Fit Index (CFI) (Bentler, 1990), and the root mean square error of approximation (RMSEA) (Browne & Cudeck, 1993). The Chi-square measures if the given model's covariance structure is significantly different from the observed covariance matrix, with a non-significant chi-square indicating that the model fits well (Kline, 2005). Because the Chi-square statistic is sensitive to sample size, I report Chi-square/df, with values less than 2 indicating good model fit (Bollen, 1989). The CFI is a measure of model fit computed as the ratio of the noncentrality parameter estimate of the hypothesized model to the noncentrality parameter of a baseline model, with values closer to 1 indicating good model fit. The RMSEA is a fit index that adjusts for errors of approximation in the population, with values closer to 0 indicating acceptable fit. Results of the structural equation analyses indicated adequate fit to the data (see Table 14): $\chi^2$/df ranged from 0.91 to 2.00; the CFI ranged from 0.93 to 1.00; and the RMSEA ranged from 0.00 to 0.10. Consequently, no modifications were made to any of the models.

Table 15 reports the standardized path coefficients for the models associated with each outcome variable. Across the different models, male partner uncertainty was a significant indicator for male relationship uncertainty. And, female self uncertainty was a significant indicator for female relationship uncertainty. For some of the models, female partner uncertainty approached significance ($p < .10$).
Partner’s agreement was a significant predictor or approached being a significant predictor of the four outcome variables. In particular, the negative association between pre-interaction agreement in treatment preferences and developing criteria approached significance ($\gamma = -.20, p < .10$). In addition, pre-interaction agreement was negatively associated with male information sharing ($\gamma = -.26, p < .05$). In other words, if couples agreed on their pre-interaction treatment selection, then they tended to develop fewer criteria against which to evaluate possible solutions, and males shared less information. On the other hand, agreement on their pre-interaction treatment selection positively predicted male ($\gamma = .47, p < .01$) and female ($\gamma = .40, p < .01$) information bolstering. Stated differently, when couples agreed pre-interaction, individuals within the couple bolstered each other’s contributions more.

In contrast to H4a, female relationship uncertainty positively predicted developing criteria ($\gamma = .30, p < .05$). In other words, the more relationship uncertainty females reported, the more developing criteria was observed in their treatment decision conversations. In support of H4a, male relationship uncertainty negatively predicted developing solutions, but this association only approached significance ($\gamma = -.26, p < .10$). In other words, as male relationship uncertainty increased, the couple was rated as developing fewer solutions. When information sharing was the outcome, and in contrast to H4b, female relationship uncertainty positively predicted male information sharing ($\gamma = .29, p < .05$). Stated differently, when females reported more relationship uncertainty, males were perceived as sharing more information.

In support of H5c, male’s perceptions of partner interference negatively predicted female bolstering ($\gamma = -.23, p < .05$), and the path between male’s perceptions of partner interference and male bolstering approached significance ($\gamma = -.21, p < .10$). In other words, when males reported
high levels of partner interference, both males and females were rated as exhibiting low levels of information bolstering.

Chapter Summary

The current chapter evaluated hypotheses concerning the role of functional theory tasks (H1), information sharing (H2), information bolstering (H3), relational uncertainty (H4), and interference from a partner (H5) on couple’s treatment selection conversations. The results of this investigation affirmed several associations consistent with previous research. At the same time, several new and unanticipated patterns emerged from the data. In the following chapter, I review evidence for the hypotheses advanced in this dissertation, and I discuss these findings more broadly.
CHAPTER 6

To begin my dissertation, I argued that treatment decisions for women diagnosed with breast cancer were likely influenced by communication between romantic partners and the qualities of the relationship. To gain insight into the processes that underlie treatment decision making, I turned to functional theory and the relational turbulence model. I reasoned that decision-making quality would be positively associated with completing the fundamental tasks specified by functional theory (H1) and information sharing (H2), but negatively associated with information bolstering or discounting (H3). In addition, I reasoned that relational uncertainty (H4) would be negatively associated with fulfilling the functional theory tasks, information sharing, and information bolstering or discounting, but a partner’s interference in everyday activities (H5) would be positively associated with these behaviors. To shed light on these associations, I conducted a cross-sectional, observational study in which couples made treatment selections for a hypothetical diagnosis of breast cancer. In the following sections, I discuss the results of this study. I begin by examining the role of communication when couples’ are faced with a medical treatment decision. Then, I conclude by discussing both the strengths and limitations of this investigation and directions for future research.

Understanding Communication during Couple Decision Making

This dissertation pulled from three theoretical perspectives to gain insight into medical decision making. Specifically, I examined the role of functional theory’s fundamental tasks, information sharing and information bolstering, and the relational turbulence model. In the following sections, I review each perspective and highlight their contributions to my dissertation more broadly.

*Functional Theory’s Fundamental Tasks*
The functional theory (Gouran & Hirokawa, 1996) follows from a functional perspective, which emphasizes processes that maximize a group’s performance effectiveness. In general, the theory argues that the ability of a group to make an appropriate decision is maximized when particular conditions and tasks are fulfilled. Although the theory forwards conditions that are associated with different aspects of the decision-making process, in this dissertation I focused on the fundamental task requirements. The first of the five fundamental task requirements is the problem analysis task, which specifies that the group must develop a sound understanding of the problem at hand. A group must also establish evaluation criteria by which possible decisions will be evaluated upon. In addition, the group should generate alternative solutions that are deemed realistic, acceptable, appropriate, and feasible. During the evaluation of the possible solutions relative to their acceptability criteria task, the group should carefully consider if possible solutions meet the previously agreed upon criteria for an acceptable solution. Last, the group must select the option most likely to have the desired characteristics. Previous research has linked fulfillment of the fundamental tasks with a group’s decision-making effectiveness (Hirokawa, 1985; 1988; Propp & Nelson, 1996). Thus, I expected that a couple’s ability to fulfill functional theory’s fundamental tasks would yield higher quality treatment selections for the hypothetical breast cancer diagnosis they were faced with.

Couples in this dissertation were assigned to either a functional theory condition or a free format condition. Specifically, before couples were asked to make a treatment decision together, the couple received either instructions on how to complete the functional tasks (N = 56) or generic decision-making instructions (N = 51). These instructions were described on cue cards, which couples were allowed to keep during their discussion. After couples were given the instruction cue cards and questions were answered, the couple was asked to have their treatment
decision discussion and make their decision. Fulfillment of the fundamental tasks was rated by judges; then, couples were determined to have addressed a fundamental task if the mean rating from the judges exceeded the midpoint of the scale during any 2 minute interval of the discussion. Although not always statistically significant, those couples who had received functional theory training addressed tasks more often than the couples that did not receive the training (see Table 3). Similarly, of the couple’s who failed to address the fundamental tasks, couples that received the free format condition failed to address the fundamental tasks more often than couples who received the functional theory training. These trends suggest that functional theory training increased the chances that a couple would address the functional theory tasks. Past research shows that untrained groups can address these tasks (Hirokawa & Pace, 1983), which may explain why some of the couples that did not receive functional theory training were still able to address some fundamental tasks. In total, 34 couples were rated as having assessed the problem, 73 couples generated criteria, 29 couples generated possible solutions, 46 couples assessed solutions based on previously established criteria, and 93 couples selected a solution based on previously established criteria.

Results indicated that there was only partial support for the claim that fulfilling fundamental tasks would enhance decision quality. Only some of the steps yielded this association, and the associations that were found were not consistent across subjective and objective decision quality. When solutions were assessed based on previously established criteria, subjective ratings of decision quality increased. One way to interpret this finding is that individuals felt more confident in their decision after they assessed possible solutions (i.e., lumpectomy surgery with radiation and mastectomy surgery) against previously established evaluation criteria. Evidence suggests that group members become more confident in their
decisions when they are forced to explain their selections to others (Heath & Gonzales, 1995). Therefore, it is conceivable that the act of assessing solutions based on evaluation criteria is an opportunity for individuals to explain why their treatment is the best treatment option. If that is the case, it makes sense that the individuals in this study felt more confident in their treatment decision quality after assessing possible solutions based on previously established criteria. In contrast to H1, results indicated that when couples developed more criteria against which they could evaluate possible solutions, individual ratings for subjective decision quality decreased. This stands in contrast to previous research that suggests developing criteria is positively associated with higher decision quality (Hirokawa, 1988; Propp & Nelson, 1996). It may be the case that the findings of this study are a manifestation of the particular decision couples were asked to make: a treatment decision for a diagnosis of breast cancer. Previous tests of functional theory have used decisions about a human relations case (Hirokawa, 1985), a plagiarism case (Hirokawa, 1988; Hirokawa & Pace, 1983), a traffic and roadway case (Hirokawa, 1983), and dealing with a broken stereo (Hirokawa & Pace, 1983). Making a treatment decision for a diagnosis of breast cancer stands in contrast to scenarios used in previous tests of the theory in that previous tests have focused on a third party’s issue rather than an issue the group itself is facing. Moreover, the negative association may have occurred because talking about criteria for evaluating treatments for a diagnosis of breast cancer entails many unpleasant and distressing circumstances. It could be the case that when couples spent time discussing these criteria in breadth or depth, individuals lost confidence in their ability to choose a “good” option. After such a discussion, it may have been the case that all options seemed poor, which resulted in decreased ratings of subjective decision quality.
Beyond the significant associations discussed previously, no effects related to addressing the fundamental task on subjective decision quality were statistically significant. Perhaps the results of these tests were affected by the nature of the subjective decision quality measure. Recall that participants were asked to rate the quality of their own decision-making conversation. Because this rating is subjective, it may not reflect decision-making quality as conceptualized by functional theory. In other tests of functional theory, the quality of a group’s outcome was assessed by a panel of experts and evaluated based on criteria that were specific to the content of the scenario (see Hirokawa, 1983; 1985; 1988; Hirokawa & Pace, 1983; Hirokawa & Rost, 1992). For example, in an effort to determine if groups made high quality decisions about a traffic and roadway issue, Hirokawa (1983) had two officials from the National Highway Safety Administration evaluate groups on the workability of their solutions, the economic feasibility of their solutions, and the socio-political problems associated with their solutions. These assessments of quality are quite different from the self-reported subjective decision quality measured in this dissertation. Moreover, the subjective nature of the measure used in this dissertation creates the opportunity for inconsistent variability. For example, participants may have rated their own decision quality lower because addressing more fundamental tasks is effortful and can be cognitively taxing. On the other hand, a person may have addressed many fundamental tasks, felt that they reached a good decision, and thus rated their decision quality higher. Because both thought processes are reasonable and possible, addressing fundamental tasks may not yield a consistent association with subjective decision quality.

The findings associated with the objective measure of decision quality also deviated from my expectations. The association between objective decision quality and assessing the problem approached significance. In particular, when couples were rated as assessing the problem to a
greater extent, those couples were more likely to select mastectomy surgery as their post-interaction treatment selection, but this association only approached significance. This finding is consistent with other research that indicates that assessment of the problem is a condition under which higher quality decisions are made (Hirokawa, 1983; 1988; Orlitzky & Hirokawa, 2001).

As in the case of subjective decision quality, these results are shaped by qualities of the measures of objective decision quality. As mentioned previously, past measures of decision quality were determined by a panel of judges and were based on the extent to which groups addressed scenario specific effectiveness criteria. This is both conceptually and theoretically different from the objective measure used in this study. Specifically, the use of a hidden profile format, which created the opportunity to determine if an objectively correct solution was selected, may have restricted the ability of groups to address the fundamental tasks. For example, previous studies did not limit the possible solutions that groups could generate (see Hirokawa, 1983); however, in this study couples were restricted to selecting lumpectomy surgery with radiation or mastectomy surgery as their solution, per the format of the hidden profile procedure. It may be the case that preemptively knowing only two options were available hindered couples from fully exploring this scenario and, thus, addressing the fundamental tasks.

Taken together then, these findings bring to light several considerations for future tests of functional theory. Although this study did show some evidence to suggest that training groups to address the fundamental tasks works, the format of that training may influence the extent to which groups are able to enact those tasks. By extension, checking if control groups fulfilled tasks can provide pertinent information for tests of the theory more generally. Also, future work should consider alternative ways for testing the quality of decisions that result from fulfillment of functional theory’s fundamental tasks.
**Information Sharing**

The pooling of information is one characteristic thought to set individual decision making apart from group decision making. In particular, group members can bring different informational resources to the group, which can be combined to produce a higher quality decision than what might be possible from any one group member on his or her own. Much of the research on information sharing has been modeled after Stasser and colleagues’ work on groups that are asked to make decisions based on hypothetical information (e.g., Stasser et al., 1989; Stasser & Titus, 1985, 1987). In this research, group members possess both shared information, known by all group members, and unshared information, known by only one group member. This research design was aimed at simulating real world circumstances in which a group’s members may possess various types and levels of information. Thus, I expected that information sharing would be positively associated with decision-making quality.

As mentioned previously, I assessed decision quality using a subjective self-reported measure and using an objective measure tied to the hidden profile format. Specifically, I used a hidden profile format as a mechanism for observing the link between information sharing and objective decision quality. I constructed a hidden profile such that participants received a subset of information that included both shared and unshared information. These subsets of information contained 7 pieces of information. There were 4 pieces of information positively illuminating lumpectomy surgery with radiation, which were provided to both members of a couple (i.e., shared information). Additionally, there were 6 pieces information that positively represented mastectomy surgery, but each partner received only 3 of these pieces of information (i.e., unshared information). Therefore, if partners did not share their information couples should
select lumpectomy surgery with radiation. On the other hand, if partners shared their information completely, then couples should select mastectomy surgery as their treatment option.

Because a number of participants were leaning toward mastectomy surgery \((N = 112)\) pre-interaction, and in 29 couples both partners choose mastectomy as their pre-interaction treatment selection, the observable impact of information sharing was dampened. Given that these individuals selected the objectively correct choice before interacting with their partner, my ability to test if exchanging information enhanced the selection of a correct decision was compromised. Additionally, it appears that couples who agreed on their pre-interaction treatment selection (for both lumpectomy surgery and mastectomy surgery) were not able to overcome their preference. In fact, none of the couples that initially agreed on their pre-interaction treatment selection changed their selection post-interaction. This may have occurred because of the common knowledge effect, which suggests that shared information, as opposed to unshared information, has a stronger impact on the groups’ decisions (Gigone & Hastie, 1993; 1997; Stasser & Titus, 1985). By contrast, and in support of the influence of information sharing on high quality decision making, couples in which partners disagreed on their pre-interaction treatment selection selected mastectomy surgery as their post-interaction treatment selection twice as often as they selected lumpectomy surgery. This finding is consistent with previous research that suggests that increases in pre-discussion dissent correspond with less biased information sharing (Brodbeck, et al., 2002; Schulz Hardt, Brodbeck, Mojzisch, Kerschreiter & Frey, 2005) and suggests that communication allows partners to reach a better decision.

I only found minimal support for the association between information sharing and decision quality. The HLMs I constructed, which used self and partner information sharing to predict self-reported decision quality, did not yield significant results. On the other hand, the
results of the regression analyses, in which female and male information sharing were used to predict objective decision quality, approached significance. Specifically, when females shared more information, the couple was somewhat more likely to select mastectomy surgery as their final treatment selection. Notably, however, this association merely approached significance.

The lack of evidence linking information sharing to decision quality may be related to the amount of knowledge and types of preferences individuals brought to the study from the outset. In previous uses of the hidden profile format, participants were asked to make decisions they had little world knowledge about (e.g., identifying a murder suspect, Galinsky & Kray, 2004; selecting an instructor for a class, Larson, Foster-Fishman, & Keys, 1994; hiring a faculty member, Wittenbaum, 1996; nominating an instructor for a teaching award, Winquist & Larson, 1998). Hence, the participants’ information base was limited to what was provided to them, and sharing it was central to effective decision making. In this dissertation, I had to adjust for the fact that people brought in their own world knowledge about breast cancer. This is evidenced by the codes that represented the information people shared about a health condition they previously had, information regarding a health condition someone they knew previously had, information they recalled from credible source such as a journal or book, or other relevant information was brought up. Although I could not control whether these pieces of prior knowledge supported or did not support the “best” decision, these pieces of information became part of what was shared. Therefore, based on the information that leaked into the conversation, people may very well have made the best decision. Thus, it might be the case that if I had more control over the information that was exchanged, the associations between information sharing and objective decision quality would be stronger.
Several considerations for the study of information sharing can be taken away from these findings. Although there was some evidence to suggest that communication could help couples who disagreed on their pre-interaction treatment selection to come to a high quality decision (i.e., select mastectomy post-interaction), the findings of this study also highlight the biases that take root when group members agree a priori. Future work should consider circumstances that give rise to conditions in which groups have trouble discovering hidden profiles (Greitemeyer & Schulz-Hardt, 2003). Additionally, future studies should try to tease out the complexities associated with decision making when individuals bring previous knowledge or experience to the task.

Information Bolstering

Interactional partners can respond to information that is shared during a decision-making task in a variety of different ways. Boster et al. (1990) identified information bolstering and information discounting as two different, but related responses to shared information. In particular, bolstering is understood as any instance in which a speaker promotes or gives credit to the importance of a piece of information (Boster et al., 1990). On the other hand, discounting is defined as communicative acts in which a group member discredits or contradicts the importance of a piece of information (Boster et al., 1990). Because information bolstering may manifest in ways that promote, support, or encourage a partner’s view (Johnson et al., 1990), these exchanges may over emphasize the importance of a particular piece of information during a decision-making task. On the other hand, denying the validity of another person’s contributions or being critical of their opinions (Burgoon & Dunbar, 2000; Burgoon et al., 1998) may discourage members from fully participating in a decision discussion. Because the use of either bolstering or discounting information can modify the weight of any one piece of information, I
predicted that bolstering and discounting would negatively influence decision-making satisfaction and quality.

To identify the level of information bolstering or discounting, 4 judges rated videotapes of the couples’ discussions. In particular, the judges were trained to rate (-2 = Strongly disagrees, decreases, or deflates the value of the piece of information, 2 = Strongly agrees, enhances, or inflates the value of a piece of information) the extent to which each piece of shared information within a single speaking turn was bolstered or discounted in the next speaking turn. The responses of the 4 judges were averaged so that each individual received their own bolstering or discounting score.

Although theoretical reasoning suggested that information discounting would negatively effect decision-making satisfaction and quality, the data did not produce many instances of discounting. In fact, inspection of the bolstering and discounting variable revealed that only 13 scores fell below zero, all of which ranged between 0 and -0.56, and 9 of which ranged between 0 and -0.23. Therefore, because over 200 participants received scores that exceeded 0.00, this measure more accurately reflected the extent to which participants bolstered information. One reason that discounting may not have been a prominent response among these couples is because they tended to be highly committed ($M = 4.84$) and highly satisfied ($M = 4.35$). Given these positive relationship characteristics, conversations that were dominated by instances of discounting may be generally uncommon for these couples. Another reason that discounting may have occurred so infrequently is because husbands seemed to defer to their wife’s treatment selection. In fact, when couples disagreed on their pre-interaction treatment section, the couple was three and a half times more likely to select the treatment the female chose initially as their post-interaction treatment selection. And, both males and females reported that they felt that
females had more influence on the final decision than did males \( (p < .01) \). Also, results from the HLMs revealed that male bolstering was a significant and positive predictor of objective decision quality (H3b). In other words, couples in which males bolstered more tended to choose mastectomy surgery, rather than lumpectomy surgery. Perhaps, this is further evidence that husbands tended to defer judgment to their wives. This trend may have occurred for reasons such a pluralistic ignorance (Harvey, 1974) and groupthink (Janis, 1972; 1982), which suggest that groups are driven to cohesion at the expense of thorough information processing.

In contrast to H3a, I found a positive association between individual information bolstering and decision satisfaction. One reason this pattern may have occurred is because information bolstering could have been taken as an act of alliance and camaraderie, rather than an act of persuasion. This is evidenced by the fact that in longer, more difficult conversations, there was a stronger, positive association between individual information bolstering and decision satisfaction. It may be the case that difficult but short interactions are somewhat innocuous. On the other hand, when couples find themselves in drawn out, difficult conversations the reassurance that individuals garner from perceiving they are on the “same side” as their partner maybe relevant to feelings of satisfaction toward that conversation. It could be the case that moments of bolstering are taken as bids for partnership or alliance in otherwise contentious negotiations. Not surprisingly then, individual information bolstering was positively associated with rating the conversation as encouraging \( (p < .01) \) and supportive \( (p < .01) \).

Providing support and assurance during a difficult conversation may not be all bad; in fact, research indicates that the solicitation and provision of support behaviors (e.g., reassures, acknowledging a spouse’s beliefs or interpretations, and encouraging a spouse to express him- or herself) during problem discussions predicts martial stability two years later (Pasch & Bradbury,
And more generally, research shows that spouses who report higher, compared with lower, levels of partner support also report more relationship satisfaction (Acitelli & Antonucci, 1994; Julien & Markman, 1991). Additionally, people identify lack of spousal support as a reason for relationship dissatisfaction (Baxter, 1986). Moreover, within the context of breast cancer specifically, increased natural killer cell activity was found in patients who reported high quality support from a spouse or romantic partner (Levy, Herberman, Whiteside, Sanzo, Lee, & Kirkwood, 1990). Thus, although bolstering a particular piece of information may give undue weight to that bit of evidence during a decision-making task, the benefits of showing support during a difficult negotiation may positively influence the individual and couple more generally.

Similar to the findings for H3a, I found that as an individual’s bolstering, rather than a partner’s bolstering, increased, individuals perceived their decision quality to be higher (H3b). It could be the case that individuals strategically bolstered information that was consistent with the treatment selection they wanted to make, which aligns with previous research that suggests group members often use group discussions as a means to communicate and negotiate their individual preferences (Gigone & Hastie, 1993, 1997). On the other hand, it could be the case that bolstering throughout a decision-making conversation increased one’s dedication to the decision that was ultimately made, which is akin to the processes that underlie commitment and consistency behaviors (Cialdini, 2001).

As a whole, these findings bring forth several conclusions about information bolstering or discounting. The most prominent finding was that information discounting was not an abundant communicative response for these couples. Also, it appears that information bolstering can influence decision satisfaction, as well as subjective and objective decision quality. In particular, information bolstering may be a venue for which confidence in a particular decision can be
developed. Or, it can serve as a technique to influence or support one’s relational partner.

Moreover, both self and other bolstering contribute to decision outcomes.

_Relational Uncertainty_

The relational turbulence model identifies relational uncertainty as a force that drives relational turbulence. In particular, relational uncertainty refers to an individual’s involvement within close relationships (Knobloch & Solomon, 1999) and can arise from three distinct sources of doubt: self uncertainty, partner uncertainty, and relationship uncertainty. Because individuals rely on relational scripts and schema to know what to do in relationships (Planalp, 1985), relational uncertainty is expected to increase when norms and rules for the relationship are unclear. In turn, the relational turbulence model suggests that the experience of relational uncertainty increases the magnitude of reactions to stressful events (Solomon & Knobloch, 2004). Past research has linked increases in relational uncertainty with more topic avoidance with a partner (Afifi & Burgoon, 1998; Knobloch & Carpenter-Theune, 2004; Knobloch & Solomon, 2002), and more indirect communication about relational problems (Theiss & Solomon, 2006b). Moreover, relational uncertainty is associated with increases in the perceived difficulty of conversations about the relationship (Knobloch & Solomon, 2005), but decreases in ratings of one’s own fluidity and effectiveness during message production (Knobloch, 2006). Thus, I expected that relational uncertainty would be negatively associated with addressing functional theory’s tasks, information sharing, and information bolstering or discounting.

Similar to other studies conducted on volunteer marital dyads or committed domestic partnerships (Knobloch, 2008a; Knobloch et al., 2007), relatively little doubt existed within the dyads in this study. This is probably because happy, adjusted couples are likely to participant in research studies together, whereas unhappy, unadjusted couples are unlikely to participate in
research together. Because of the diminished range in the independent variable, it is more difficult to determine if variability in the dependent variable is due to changes in the independent variable.

In support of H4a, male relationship uncertainty negatively predicted developing solutions, but in contrast to H4a, female relationship uncertainty positively predicted developing criteria. Although not significant in all of the models, this general pattern was consistent: male relationship uncertainty negatively predicted each of the fundamental theory tasks ($\gamma$’s ranged from -.07 to -.26) whereas female relationship uncertainty positively predicted each of the fundamental theory tasks ($\gamma$’s ranged from .01 to .30). Although the majority of these path coefficients were not statistically significant, their consistency raises questions about the divergent effects of relational uncertainty for males and females discussing breast cancer treatment options. In the context of breast cancer, women must often confront the diagnosis and treatments directly, whereas spouses often play the role of supporter and caregiver (Silver, 2004). And in this role-playing task, women faced a diagnosis of breast cancer, whereas the men were confronted with their partner’s diagnosis of breast cancer.

Two separate conclusions can be drawn: because the men and women had different roles in this study, being uncertain may have differentially affected their tendency to communicate. This is evidenced by the fact that across the different models, male partner uncertainty was a significant indicator for male relationship uncertainty, whereas female self uncertainty was a significant indicator for female relationship uncertainty. A second conclusion is that this study presents a novel kind of communication experience compared with previous tests of the relational turbulence model; specifically, in this study partners are experiencing an event from
divergent points of view. For both of these reasons, we might expect self and partner uncertainty to perform differently in relationship to other variables.

Although speculative, I wonder if the inconsistency between these findings and those yielded by previous research could be an outcome of the imbalance in the decision-making situation. Perhaps it is the case that if a person is experiencing increased levels of relationship uncertainty and they are asked to offer input into an issue that affects their partner (i.e., their partner is weighing treatment options for a diagnosis of breast cancer), then the person may exhibit less direct communication, which is consistent with previous research (Theiss & Solomon, 2006b). On the other hand, if a person is facing a situation that affects them personally (i.e., they themselves have been diagnosed with breast cancer), relational uncertainty may require them to talk more openly with their partner about that issue. Given this line of reasoning, we would expect that women who must overcome their initial instincts to avoid (when experiencing relationship uncertainty) would rate their conversations as especially difficult. Zero-order correlations support this inference. For females, all three facets of relational uncertainty were positively correlated with conversational difficulty. Thus, this suggests that consistent with the relational turbulence model, women who reported more relational uncertainty were experiencing more communication strain; however, out of necessity these women may have been prompted to openly discuss the diagnosis with their partners.

In contrast to H4b, I found that female relationship uncertainty positively predicted male information sharing. Perhaps this association is symptomatic of the relationship climate. For example, this could be a reflection of the fact that some husbands are willing to share information in domains that they should, at least in some ways, defer to their wife. And, women
experience more uncertainty when they are married to individuals who are willing to overstep these bounds.

Despite some inconsistencies with how these specific communication variables aligned with the relational turbulence model, evidence does suggest that in general communication was more strained for people experiencing relational uncertainty. In particular, the three measures of uncertainty correlated with the perceived difficulty of the conversation, which is what would be expected based on the theory. Thus, future research should continue to tease out how relational uncertainty shapes communication between relational partners.

A Partner’s Interference

The relational turbulence model (Solomon & Knobloch, 2004) forwards interference from partners as a second mechanism that drives greater reactivity to relational events. In general, interdependence refers to the coordination of mutually beneficial behavioral patterns between relational partners (Kelley et al., 1983). When novel patterns of exchange are first introduced, partners are likely to encounter mishaps or errors. Therefore, interference occurs to the extent that one partner impedes the goals or activities of the other. Moreover, the relational turbulence model suggests that as a partner’s interference increases so also will their reactions to relationship events (Solomon & Knobloch, 2004). In support of this claim, Theiss and Solomon (2006b) reported a positive association between perceived partner interference and communication directness. In addition, Weber and Solomon (2007) found that breast cancer survivors communicate more directly with their partners about breast cancer stressors when they experience interference from their partner. Thus, I predicted that interference from a partner is positively associated with the frequency of communication that addresses the functional theory tasks, information sharing, and information bolstering.
Similar to relational uncertainty, relatively little interference from a partner was reported in this study. This is not surprising given that most participants in this study indicated that they were highly committed and satisfied with their relationships. Given the limited variability in the interference from a partner variable, it may have been harder to detect problematic communication that, according to the theory, should arise from increased partner interference.

In contrast to H5c, male partner interference negatively predicted female and male bolstering. Past research indicates that individuals who experience heightened interference from their partner will communicate more directly with their partner (Theiss & Solomon, 2006b). Under circumstances of heightened partner interference, individuals are thought to be more willing to communicate with their partner in a direct manner because their partner is interfering with the individual’s ability to achieve their daily goals. On the other hand, Knobloch (2008) found that interference from a partner was also associated with disaffiliative messages. In other words, when partners interfere with peoples’ goals, those people are more likely to express detachment, disconnection, or disengagement with their partner. As such, Knobloch’s (2008) finding may explain why interference from a partner negatively predicted information bolstering. To the extent that bolstering was taken as an expression of affiliation or support, one would expect individuals who are experiencing heightened partner interference to bolster less.

Moreover, and consistent with the general sentiment that interference from a partner creates strained communication, a partner’s interference approached a significant association with conversational difficulty.

Implications for Theory

The relational turbulence model (Solomon & Knobloch, 2004), functional theory (Gouran & Hirokawa, 1996), and the hidden profile format (e.g., Stasser & Titus, 1985; 2003) provided
the theoretical foundation for linking interpersonal circumstances with medical decision making. The relational turbulence model brought forth a framework for understanding the mechanisms that operate during transitions in relationships: relational uncertainty and interference from a partner. Functional theory laid a foundation for understanding the interactions that groups members must have in order to maximize their decision making ability. The hidden profile format provided structure for understanding how information exchanges can shape decision outcomes. The utility of each theory and possible extensions for future research are discussed in the following sections.

The Relational Turbulence Model

As previously discussed, research indicates that relational uncertainty is associated with less direct communication (Afifi & Burgoon, 1998; Knobloch & Carpenter-Theune, 2004; Theiss & Solomon, 2006b) and a partner’s interference is associated with more direct communication (Theiss & Solomon, 2006b; Weber & Solomon, 2007). This dissertation suggests new ways of thinking about how relational uncertainty and interference from a partner manifest themselves communicatively.

Whereas previous tests of the relational turbulence model have tended to focus on how relational uncertainty and a partner’s interference influence the directness or positivity of communication (Weber & Solomon, 2007), I explored other types of communication in this dissertation. In particular, I tried to document the ways that these relationship circumstances influence the quantity of communication by exploring the information partners share during a decision-making activity. Additionally, and relevant to decision making tasks, I explored how relational uncertainty and a partner’s interference were associated with communication theorized to affect decision making quality; specifically, communication used to address the fundamental
tasks and bolster information. Results of this study indicate that relational uncertainty and interference from a partner are relevant relationship characteristics for predicting decision-making behavior. Relation uncertainty was associated with addressing the fundamental tasks and information sharing, whereas a partner’s interference was associated with information bolstering.

This dissertation also diverged from previous tests of the relational turbulence model because it captured relationship characteristics relative to the different roles participants had to enact. Studies testing the relational turbulence model have asked individuals and partners to retrospectively report their behavior in a more global sense; however, this study explored how individuals within a couple reacted to the same source of strain. Because partners in this study role-played being diagnosed with breast cancer or having a partner who was diagnosed with breast cancer, I was able to explore how relational uncertainty or interference might influence communication from different vantage points. In particular, studying relational uncertainty and inference from a partner in this way indicates that targets and sources may react differently to stress-provoking circumstances as a function of these relationship characteristics.

Functional Theory

Functional theory (Gouran & Hirokawa, 1996) provided a mechanism for exploring how couples make effective or ineffective treatment selection. Although there is evidence to support the fact addressing more fundamental tasks can enhance decision-making effectiveness, the theory does not articulate the conditions under which we would expect a group to be able to address the tasks. The dissertation provides preliminary evidence that suggests relationship circumstances between group members might shape if a group is able to address the fundamental tasks. Future research should continue to explore circumstances that may give rise to a group’s ability to address the fundamental tasks.
This dissertation also diverged from previous tests of functional theory by testing the completion of the fundamental tasks among romantic couples. Laboratory studies testing functional theory have typically used college undergraduates who were previously unfamiliar to one another, whereas the current study used marital dyads and committed domestic partnerships. Another departure from previous tests of the theory is the size of the group used in this study; in particular, other studies have used three or more group members, whereas the current study had groups consisting of only two members. Future research should consider how relational history and group size may facilitate or complicate effective decision making.

*The Hidden Profile Format*

The hidden profile format gave me a starting point for understanding how information exchanges can shape decision outcomes (Stasser & Titus, 1985; 2003). Although this study design provided a mode for assessing how information was being shared among participants, this dissertation suggests that more research needs to be done in order to fully understand how and why groups make decisions the way that do. Notably, much of the research using the hidden profile format has had participants make a judgment about a third party (e.g., Stasser & Titus, 1985). And, most research on information sampling has been conducted on ad hoc groups who members were previously unacquainted (see Wittenbaum & Strasser, 1996). This dissertation, however, asked romantic couples to select a treatment for the woman’s hypothetical diagnosis of breast cancer. Future studies should consider how making a decision for a third party may be different from making a decision that directly influences the individuals making that decision. Research should also continue to explore the ways in which familiar, as compared with unfamiliar, group members may approach an information sharing task (see Gruenfeld, Mannix, Williams, & Neale, 1996).
More broadly, one conclusion from this study is that hidden profiles might not work as well when participants are able to contribute external information to the discussion. This is because these contributions undermine the control researchers need to have over the shared and unshared information that is distributed among group members. Similarly, if participants have strong preferences upon entering a study, they might not be able to overcome those biases, even if information sharing does occur. For example, I would suspect that a decision-making task that involved an abortion scenario would be highly biased toward the participants’ pre-study preferences regardless of the amount or type of information that group members could discuss. Future work should consider information contributions and pre-study preferences when following a hidden profile format.

Research on Medical Experiences

Decision-making literature from the medical field provided me with a starting point to understand how individuals might approach a hypothetical breast cancer decision-making task. Although information about breast cancer was provided to participants in this study, it became apparent that individuals were heavy influenced by knowledge they attained prior to entering the study. This prior knowledge included past experiences that they themselves had, past experiences of people they knew, and information they read or heard more generally. In addition, much of prior knowledge was garnered from anecdotal stories of friends or relatives with little or no medical expertise. Therefore, research on medical decision making should explore how individuals process anecdotal information and why those stories can be powerful driving forces behind medical decisions.

The information that I used to construct the hidden profiles was consistent with research cited on the American Cancer Society’s webpage. Surprisingly though, during pretesting
seemingly minimal changes in the hidden profile scenario resulted in relatively large changes in the treatment selections being made. This suggests that individuals are particularly sensitive to the particular details that constitute a given medical scenario. In particular, my pretesting indicated that the size of the tumor was one such detail of interest. In general, then, this finding emphasizes the importance of pretesting medical scenarios before research studies are implemented. In addition, the results of these pretests suggest that future work should explore why seemingly small changes can instigate such drastic shifts in treatment selection as well as what the thresholds individuals confine themselves to are.

General Implications

In addition to the contributions this dissertation made to each of the theories and bodies of literature it pulled from, there are several broader implications that can be taken away from this study. Perhaps the most glaring implication of this study is that any time researchers attempt to translate a theoretical perspective into a real-world scenario, our application is necessarily constrained by what reality tells us is practical and reasonable. For example, theory about hidden profiles suggest that each pieces of information that is provided to participants should be weighted equally; however, reality indicates that patients do not weigh all information equally (i.e., the chance of extending one’s life on par with temporarily being more fatigued). Similarly, functional theory suggests that the selection of a satisfactory solution is maximized when groups generate possible solutions; however, in the real world doctors are expected to provide patients with treatment options, rather than ask patients to come up with treatment options on the cuff. So although applied research helps to shed light on how communication unfolds in the real world, this dissertation emphasizes the need for scholars to make thoughtful decisions about how theory can and should be translated.
This dissertation also emphasizes the need for dyadic data. In particular, this study shows that research findings are compromised when studies do not include perspectives from all of the parties involved in communication episodes. Most notably, previous tests of the relational turbulence model have gathered general accounts from one partner, whereas this dissertation collected both partners’ reflects on their experience with the same decision making event. In doing so, I found that targets and sources reacted differently to stress-provoking circumstances as a function of relational uncertainty and inference from a partner. Continuing to explore how communication unfolds dyadically will allow our theories to develop and will provide us with insight into the ongoing and simultaneous nature of interactions.

Last, but certainly not least, this dissertation stresses the need for studying communication at the intersection of multiple theories. Whereas each individual theory utilized in this study provided some insight about the complicated and overwhelming nature of decision making, it was at the interaction of these theories that I was able to explore the process of medical decision making among couples. The synergy and momentum gained from the infusion of multiple perspectives will provide our scholarship with a medium for representing the complex nature of communication.

Interaction Strengths and Limitations

The conclusions reached in this investigation are qualified by strengths and limitations of this study. One strength of this dissertation is that it highlights the role spouses play during decision-making tasks. Roughly half of my participants did not agree with the spouse on their pre-interaction treatment selections; however, through communication they reached a shared position. If this generalizes, it means that disagreeing with a spouse is pretty common, and the
resolution of different opinions may have longer term consequences. Moreover, research on medical decision making should more fully include partners into future endeavors.

This dissertation also includes several methodological contributions. One such contribution includes using small group research to theorize about dyadic interactions. To date, much of the research on functional theory and information sharing have been tested on college-aged undergraduates who were previously unfamiliar with one another; by contrast, the sample for this dissertation included marital dyads and committed domestic partners. Additionally, this dissertation provided participants with a real-world scenario, which is something few studies have done in the past. Although translating the theory into an authentic scenario presented challenges, the value of testing theory as it applies to real-world scenarios is valuable. This dissertation also extended methodological techniques testing the relational turbulence model. Past studies have asked partners to report on their experiences more generally, whereas this dissertation allowed me to capture reactions to a single event from both individuals within the couple.

As mentioned previously, this dissertation pulled from several distinct theoretical perspectives and bodies of literature. Although the integration of multiple theoretical positions complicated the design of this study considerably, marrying theories from distinct fields within the communication discipline provided a more holistic understanding of how couples approach and work through treatment decision making. Specifically, pulling from the small group and the interpersonal communication literatures allowed me to link relationship circumstances with decision-making outcomes. Research in the future should continue to explore the ways in which these areas of study shed light on medical experiences within couples.
Other aspects of the research design restrict the generalizability of my conclusions. One such weakness concerns the type of sample used in this investigation. Although I recruited individuals from a variety of venues, in general, the sample was predominately white, educated, and from higher socioeconomic brackets. To the extent that socioeconomic status influences the ways in which individuals weigh possible treatment options, research needs to explore this line of research on a more diverse sample.

A second limitation arises from the cross-sectional nature of my data. Using a cross-sectional methodology limits the conclusions I can draw about how treatment selections develop over time and as additional medical information is considered. By conducting longitudinal research, future research could track the process that couples go through as they face a treatment decision of this magnitude.

An additional limitation to my dissertation was my inability to detect discounting with frequency. Part of this problem likely arose from the fact that most individuals within this study were in highly satisfying relationships, and the trend that males tended to defer to the preferences of the female. Thus, future work should explore other ways of capture this communicative response.

The execution of the hidden profile format was limited by the contributions of world knowledge or external information that individuals were able to contribute to the pool of shared information. Because these contributions could have in all likelihood created a situation in which either lumpectomy surgery or mastectomy surgery were optimal, the hidden profile was compromised. Future work should consider how external information can shape and influence the information environment from which participants are using to make their decisions.
An additional concern with the execution of the hidden profile format relates to the presumption that pieces of information constituting the hidden profile are equivalent in weight. Evidence from the pretests suggest that information relating to mortality and survival may have held more influence than other pieces of information regarding topics such as hospital stay or side effects. The decision to include mortality and survival information was made because it would have been somewhat inauthentic not to include that type of information. If this type of information did carry more weight than other types of information, the hidden profile format would have been compromised. Perhaps research in the future should consider holding survival outcomes constant in an effort to explore the influence of other pieces of information provided in studies that use hidden profiles.

Whenever coding is used in research, elements of the coding task privilege certain communication experiences over other ones. In this dissertation I focused on the presence or absence of specific communication utterances that aligned with the fundamental tasks, information sharing, and information bolstering or discounting. This particular approach to coding can be advantageous because it captures communication that is through to serve one of the aforementioned interaction variables; however, it does not offer a qualitative evaluation of how well these communicative acts serve the functions of interest.

In much the same way that a doctor would provide treatment selections for a patient, the participants in this study were asked to make a treatment selection between mastectomy surgery or lumpectomy surgery with radiation. Although my intent was to mirror a real-world cancer scenario, translating functional theory into an authentic scenario may have compromised the purity of the task that requires group members to generate possible solution options. Much like we might see in the real world, couples in this study did generate possible treatment options.
beyond the two that were provided (e.g., homeopathic treatments, chemotherapy, acupuncture, medicinal oils); however, in general it appears that providing the couples with ad hoc treatment options stunted the generation of possible treatment options. In particular, generating treatment options was the task that the fewest number of couples addressed. Results following from this particular task should be qualified by this limitation.

Conclusion

The goal of this dissertation was to explore ways that relational and communicative circumstances shape couple decision-making behavior. To this end, I used Solomon and Knobloch’s relational turbulence model (2004), functional theory (Gouran & Hirokawa, 1996), and the hidden profile format (e.g., Stasser & Titus, 1985; 2003) to identify links between interpersonal circumstances and medical decision making. Although not all of the predicted associations held up, I am encouraged by the findings. In particular, the results of this study shed light on the ways relationship and communication circumstances can influence treatment decisions for women diagnosed with breast cancer.
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Appendix A

_Hypothetical Scenario and Information Sets for Pretest 1_

PLEASE READ THE FOLLOWING CAREFULLY:

Please imagine that you are married or are in a similarly committed relationship. If you are female, than please assume that you have received a diagnosis of breast cancer. If you are male, please assume that a female romantic partner or close friend has been diagnosed with breast cancer. Although this situation may be difficult to imagine, please do your best to report your responses to this situation.

YOUR TASK:

Please imagine that this breast cancer scenario is actually happening to you and your partner (hypothetical partner).

In a routine mammogram, you (your partner) were alerted to some abnormal tissue in your left breast. You (your partner) had a biopsy of the breast tissue, and that test confirmed that it is breast cancer. Specifically, your physician estimates that the tumor is around 3 cm across. Now, you and your partner are faced with a treatment decision. You and your partner must choose between two treatment options: (a) lumpectomy surgery with radiation or (b) mastectomy surgery. Specifically, you must make a treatment decision for your (your partner’s) breast cancer.

WHAT IS BREAST CANCER?

Cancer develops when cells in a part of the body begin to grow out of control. Although there are
many kinds of cancer, they all start because of out-of-control growth of abnormal cells. Breast cancer is a malignant (cancerous) tumor that starts from cells of the breast.

WHAT IS LUMPECTOMY SURGERY WITH RADIATION?
Lumpectomy surgery removes only the breast lump and a surrounding margin of normal tissue. Radiation therapy is usually given after a lumpectomy. Radiation therapy is treatment with high-energy rays or particles that kill cancer cells.

WHAT IS MASTECTOMY SURGERY?
Mastectomy surgery involves removal of all of the breast tissue, sometimes along with other nearby tissues. During a mastectomy, the surgeon removes the entire breast, including the nipple, but does not remove underarm lymph nodes or muscle tissue from beneath the breast.

PLEASE READ OVER THE FOLLOWING SET OF INFORMATION. YOU SHOULD USE THIS INFORMATION IN ORDER TO HELP YOU MAKE YOUR BREAST CANCER TREATMENT DECISION.

Hidden Profile Task: Treatment Option Information Sets

*Information Set A (in favor of lumpectomy surgery):*

1. Lumpectomy surgery is recommended for tumors less than 2 cm across, whereas mastectomy surgery is recommend for tumors larger than 2 cm across.
2. Having a mastectomy will completely remove the cancerous tumor.
3. Patients who receive breast radiation after lumpectomy are usually treated 5 days a week in an outpatient center for about 6 or 7 weeks.

4. Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.

5. Typically there is not a hospital stay following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.

6. Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.

7. Following mastectomy, side effects included numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.

**Information Set B (in favor of lumpectomy surgery):**

1. Greater survival rates are expected if mastectomy surgery is conducted when the tumor is greater than 2 cm.

2. Following lumpectomy surgery, if the pathologist finds there is cancer at the edge of the piece of tissue removed during surgery, the surgeon will need to do surgery again.

3. Radiation therapy following lumpectomy can cause swelling, heaviness, and tenderness in the breast. Also, the breast may become burnt and the patient may experience fatigue.

4. Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.
5. Typically there is not a hospital stay following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.

6. Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.

7. Following mastectomy, side effects include numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.

**Complete Information Set (in favor of mastectomy surgery):**

1. Lumpectomy surgery is recommended for tumors less than 2 cm across, whereas mastectomy surgery is recommend for tumors larger than 2 cm across.

2. Having a mastectomy will completely remove the cancerous tumor.

3. Patients who receive breast radiation after lumpectomy are usually treated 5 days a week in an outpatient center for about 6 or 7 weeks.

4. Greater survival rates are expected if mastectomy surgery is conducted when the tumor is greater than 2 cm.

5. Following lumpectomy surgery, if the pathologist finds there is cancer at the edge of the piece of tissue removed during surgery, the surgeon will need to do surgery again.

6. Radiation therapy following lumpectomy can cause swelling, heaviness, and tenderness in the breast. Also, the breast may become burnt and the patient may experience fatigue.

7. Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.
8. Typically there is not a hospital stays following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.

9. Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.

10. Following mastectomy, side effects included numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.
PLEASE READ THE FOLLOWING CAREFULLY:

Please imagine that you are married or are in a similarly committed relationship. If you are female, than please assume that you have received a diagnosis of breast cancer. If you are male, please assume that a female romantic partner or close friend has been diagnosed with breast cancer. Although this situation may be difficult to imagine, please do your best to report your responses to this situation.

YOUR TASK:

Please imagine that this breast cancer scenario is actually happening to you and your partner (hypothetical partner).

In a routine mammogram, you (your partner) were alerted to some abnormal tissue in your left breast. You (your partner) had a biopsy of the breast tissue, and that test confirmed that it is breast cancer. Specifically, your physician estimates that the tumor is around 2.25 cm across. Now, you and your partner are faced with a treatment decision. You and your partner must choose between two treatment options: (a) lumpectomy surgery with radiation or (b) mastectomy surgery. Specifically, you must make a treatment decision for your (your partner’s) breast cancer.

WHAT IS BREAST CANCER?

Cancer develops when cells in a part of the body begin to grow out of control. Although there are
many kinds of cancer, they all start because of out-of-control growth of abnormal cells. Breast cancer is a malignant (cancerous) tumor that starts from cells of the breast.

WHAT IS LUMPECTOMY SURGERY WITH RADIATION?
Lumpectomy surgery removes only the breast lump and a surrounding margin of normal tissue. Radiation therapy is usually given after a lumpectomy. Radiation therapy is treatment with high-energy rays or particles that kill cancer cells.

WHAT IS MASTECTOMY SURGERY?
Mastectomy surgery involves removal of all of the breast tissue, sometimes along with other nearby tissues. During a mastectomy, the surgeon removes the entire breast, including the nipple, but does not remove underarm lymph nodes or muscle tissue from beneath the breast.
Appendix C

Scenario for Pretest 3

PLEASE READ THE FOLLOWING CAREFULLY:

Please imagine that you are married or are in a similarly committed relationship. If you are female, than please assume that you have received a diagnosis of breast cancer. If you are male, please assume that a female romantic partner or close friend has been diagnosed with breast cancer. Although this situation may be difficult to imagine, please do your best to report your responses to this situation.

YOUR TASK:

Please imagine that this breast cancer scenario is actually happening to you and your partner (hypothetical partner).

In a routine mammogram, you (your partner) were alerted to some abnormal tissue in your left breast. You (your partner) had a biopsy of the breast tissue, and that test confirmed that it is breast cancer. Specifically, your physician estimates that the tumor is around 2 cm across. Now, you and your partner are faced with a treatment decision. You and your partner must choose between two treatment options: (a) lumpectomy surgery with radiation or (b) mastectomy surgery. Specifically, you must make a treatment decision for your (your partner's) breast cancer.

WHAT IS BREAST CANCER?

Cancer develops when cells in a part of the body begin to grow out of control. Although there are
many kinds of cancer, they all start because of out-of-control growth of abnormal cells. Breast cancer is a malignant (cancerous) tumor that starts from cells of the breast.

WHAT IS LUMPECTOMY SURGERY WITH RADIATION?
Lumpectomy surgery removes only the breast lump and a surrounding margin of normal tissue. Radiation therapy is usually given after a lumpectomy. Radiation therapy is treatment with high-energy rays or particles that kill cancer cells.

WHAT IS MASTECTOMY SURGERY?
Mastectomy surgery involves removal of all of the breast tissue, sometimes along with other nearby tissues. During a mastectomy, the surgeon removes the entire breast, including the nipple, but does not remove underarm lymph nodes or muscle tissue from beneath the breast.
Appendix D

Information Sets for Pretest 4

**Information Set B (in favor of lumpectomy surgery):**

1. Breast reconstruction can be done following a mastectomy (either at the time of the initial surgery or at a later date). Breast reconstruction is not available for lumpectomy surgery.
2. Following lumpectomy surgery, if the pathologist finds there is cancer at the edge of the piece of tissue removed during surgery, the surgeon will need to do surgery again.
3. Radiation therapy following lumpectomy can cause swelling, heaviness, and tenderness in the breast. Also, the breast may become burnt and the patient may experience fatigue.
4. Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.
5. Typically there is not a hospital stay following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.
6. Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.
7. Following mastectomy, side effects include numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.

**Complete Information Set (in favor of mastectomy surgery):**

1. Lumpectomy surgery is recommended for tumors less than 2 cm across, whereas
1. Mastectomy surgery is recommended for tumors larger than 2 cm across.

2. Having a mastectomy will completely remove the cancerous tumor.

3. Patients who receive breast radiation after lumpectomy are usually treated 5 days a week in an outpatient center for about 6 or 7 weeks.

4. Breast reconstruction can be done following a mastectomy (either at the time of the initial surgery or at a later date). Breast reconstruction is not available for lumpectomy surgery.

5. Following lumpectomy surgery, if the pathologist finds there is cancer at the edge of the piece of tissue removed during surgery, the surgeon will need to do surgery again.

6. Radiation therapy following lumpectomy can cause swelling, heaviness, and tenderness in the breast. Also, the breast may become burnt and the patient may experience fatigue.

7. Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.

8. Typically there is not a hospital stay following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.

9. Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.

10. Following mastectomy, side effects include numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.
Information Set A (in favor of lumpectomy surgery):

1. Lumpectomy surgery is recommended for tumors less than 2 cm across, whereas mastectomy surgery is recommend for tumors larger than 2 cm across.
2. Having a mastectomy will completely remove the cancerous tumor.
3. Patients who receive breast radiation after lumpectomy are usually treated 5 days a week in an outpatient center for about 6 or 7 weeks.
4. Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.
5. Typically there is not a hospital stay following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.
6. Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.
7. Following mastectomy, side effects included numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.

Information Set B (in favor of lumpectomy surgery):
1. Lumpectomy surgery that is conducted on a tumor that is less than 2cm yields roughly the same survival rates as mastectomy surgery that is conducted on a tumor that is greater than 2 cm.

2. Following lumpectomy surgery, if the pathologist finds there is cancer at the edge of the piece of tissue removed during surgery, the surgeon will need to do surgery again.

3. Radiation therapy following lumpectomy can cause swelling, heaviness, and tenderness in the breast. Also, the breast may become burnt and the patient may experience fatigue.

4. Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.

5. Typically there is not a hospital stay following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.

6. Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.

7. Following mastectomy, side effects include numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.

Complete Information Set (in favor of mastectomy surgery):

1. Having a mastectomy will completely remove the cancerous tumor.

2. Lumpectomy surgery that is conducted on a tumor that is less than 2cm yields roughly the same survival rates as mastectomy surgery that is conducted on a tumor that is greater than 2 cm.
3. Patients who receive breast radiation after lumpectomy are usually treated 5 days a week in an outpatient center for about 6 or 7 weeks.

4. Breast reconstruction can be done following a mastectomy (either at the time of the initial surgery or at a later date). Breast reconstruction is not available for lumpectomy surgery.

5. Following lumpectomy surgery, if the pathologist finds there is cancer at the edge of the piece of tissue removed during surgery, the surgeon will need to do surgery again.

6. Radiation therapy following lumpectomy can cause swelling, heaviness, and tenderness in the breast. Also, the breast may become burnt and the patient may experience fatigue.

7. Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.

8. Typically there is not a hospital stays following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.

9. Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.

10. Following mastectomy, side effects included numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.
Appendix F

Demographic Questions, Relationship Questions, and Communication Questions

To begin, we would like to obtain some background information about you and your romantic partner. 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? _____________ years

3. What was the last level of school you completed? Please mark one:
   ___ Middle School
   ___ Some High School
   ___ High School
   ___ Associate’s Degree
   ___ Some College
   ___ Bachelor’s Degree
   ___ Some Graduate School
   ___ Master’s Degree
   ___ Law Degree
   ___ Doctoral Level Degree

4. Please type in the name of the county and state you live in: ________________________

5. What is your race or ethnicity? Please mark all that apply:
   ___ Black or African American
   ___ Asian
   ___ White or Caucasian
   ___ Native Hawaiian or other Pacific Islander
   ___ Hispanic or Latino
   ___ Native American or Alaska Native
   ___ Other (please indicate) ____________________

6. Please indicate your preferred religion:
   ___ Christianity
   ___ Judaism
   ___ Islam
   ___ Buddhism
   ___ Hinduism
   ___ Atheism
   ___ No religious affiliation
7. Please indicate the extent to which you agree with the following item. My religion and/or spirituality is the backbone to my approach to life:
   - Completely Agree
   - Agree
   - Somewhat Agree
   - Somewhat Disagree
   - Disagree
   - Completely Disagree
   - I do not consider myself a religious or spiritual person.

8. Please indicate your TOTAL annual household income:
   - Below $12,500
   - $12,500 - $25,000
   - $25,001 - $37,500
   - $37,501 - $50,000
   - $50,001 - $62,500
   - $62,501-$75,000
   - $75,001 - $100,000
   - $100,000 - $150,000
   - More than $150,000

9. Which of the following best characterizes your current romantic relationship status with the person you brought? Please mark one:
   - Seriously dating
   - Engaged to be married
   - Married or committed to a long term relationship

10. How many years have you been with your partner? ______________

11. Are you cohabiting with your partner? Please circle one:  Yes  No

12. What is your current partner’s sex? Please circle one: Male  Female

13. What was the age of your partner on his/her last birthday? __________ years

14. Have you been married or in a committed long term relationship prior to your relationship with your current partner? Please circle one:
   a. No
   b. Yes, once before
   c. Yes, twice before
   d. Yes, three or more times before
15. Has your current partner been married or in a committed long term relationship prior to your relationship with your current partner? *Please circle one:*

a. No  
b. Yes, once before  
c. Yes, twice before  
d. Yes, three or more times before  

16. Do you have any children or stepchildren for whom you fill a parental role? *Please circle one:*

a. No  
b. Yes
   i. If yes, please list the ages and sexes of the children that live with you:  
   ii. If yes, please list the ages and sexes of the children that do not live with you:  

17. Have you ever been diagnosed with cancer? *Please circle one:*

Yes  No  

a. Type: ____________  year: ____________
Now, please think of the past month as you answer each of the following questions. Using the following scale, mark the answer that best indicates your response to each item.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
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<th>4</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Never or not at all</td>
<td>Occasionally</td>
<td>Frequently</td>
<td>All of the time</td>
</tr>
<tr>
<td>IN THE PAST MONTH, HOW OFTEN DID YOU QUESTION OR DOUBT . . .</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>How you feel about your marriage?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>How open you should be with your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>How to support your partner when he or she needs it?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>How to best communicate with your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>How to show affection to your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>If you are being a good partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>How much you can rely on your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>How your partner feels about your marriage?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>Your partner’s ability to provide support when you need it?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Your partner’s ability to communicate with you?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Your partner’s ability to show affection to you?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>How open your partner is with you?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>How much your partner cares about you?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>If your partner is being faithful?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>The future of your marriage?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>How to manage money you and your partner have?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td>How well you and your spouse can manage your relationships with extended family?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>If you and your partner share the same views on raising children?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>How much physical intimacy you should have with your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>How to have a satisfying sexual relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>21</td>
<td>How to resolve conflict in your marriage?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22</td>
<td>How you and your partner should divide up household tasks?</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>23</td>
<td>The amount of openness there is in your marriage?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>What you and your partner can and cannot say to each other?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25</td>
<td>How you and your partner should balance work and family?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26</td>
<td>How you and your partner support each other?</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>27</td>
<td>How you and your partner can communicate with each other?</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>28</td>
<td>How you and your partner show affection to each other?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29</td>
<td>How you and your partner should spend free time?</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>
Again, please continue thinking of the past month as you answer each of the following questions. Using the following scale, please mark the number that indicates how frequently each experience occurred in the past month.

<table>
<thead>
<tr>
<th>1</th>
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<th>4</th>
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</thead>
<tbody>
<tr>
<td>Never or not at all</td>
<td>Occasionally</td>
<td>Frequently</td>
<td>All of the time</td>
</tr>
</tbody>
</table>

**IN THE PAST MONTH, HOW OFTEN DID YOUR PARTNER . . .**

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<th>1</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Interfere with the plans you made</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Interfere with the amount of leisure time you had</td>
<td></td>
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<tr>
<td>3</td>
<td>Disrupt your daily routine</td>
<td></td>
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<tr>
<td>4</td>
<td>Interfere with the things you needed to do each day</td>
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<tr>
<td>5</td>
<td>Make it harder for you to schedule you activities</td>
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<tr>
<td>6</td>
<td>Help you to do the things you needed to do each day</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>Help you have leisure time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Make it easier for you to schedule you activities</td>
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<tr>
<td>9</td>
<td>Helped me to achieve the everyday goals I set for myself (for example, goals for exercise, diet, entertainment)</td>
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<tr>
<td>10</td>
<td>Help you to use your time well</td>
<td></td>
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<tr>
<td>11</td>
<td>Make it harder to take care of the children</td>
<td></td>
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<tr>
<td>12</td>
<td>Assist with caring for the children</td>
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</table>

No children
Continuing to think of the past month, please use the following scale to select the number that most closely describes HOW TRUE these statements are of you.

<p>| | | | | | |</p>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>NOT AT ALL TRUE</td>
<td>MODERATELY TRUE</td>
<td>DEFINITELY TRUE</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

1. I feel that I can confide my partner about virtually everything 1 2 3 4 5
2. I would do anything for my partner 1 2 3 4 5
3. If I could never be with my partner, I would feel miserable 1 2 3 4 5
4. If I were lonely, my first thought would be to seek my partner out 1 2 3 4 5
5. One of my primary concerns is my partner’s welfare 1 2 3 4 5
6. I would forgive my partner for practically anything 1 2 3 4 5
7. I feel responsible for my partner’s well-being 1 2 3 4 5
8. I greatly enjoy being confided in by my partner 1 2 3 4 5
9. It would be hard for me to get along without my partner 1 2 3 4 5

Please answer the following questions on their respective scales.

10. At this point in time, what do you feel the chance is of your relationship lasting a lifetime? (please circle a percentage)

0% 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100%

11. How certain are you about your answer to the previous question?

<p>| | | | | | |</p>
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<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Completely or almost completely uncertain</td>
<td>Mostly uncertain</td>
<td>Slightly more uncertain than certain</td>
<td>Slightly more certain than uncertain</td>
<td>Mostly certain</td>
<td>Completely or almost completely certain</td>
</tr>
</tbody>
</table>
As you continue to think of the past month, answer each of these questions. Please mark the number that best indicates your response to each item.

<table>
<thead>
<tr>
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<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How satisfied are you with your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>How committed are you to your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>How intimate is your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>How much do you trust your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>How passionate is your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>How much do you love your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>How content are you with your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>How dedicated are you to your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>How close is your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>How much can you count on your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>How much passion is in your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>How much do you adore your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>How happy are you with your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>How devoted are you to your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>How connected are you to your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>How dependable is your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>How sexually intense is your relationship?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>How much do you cherish your partner?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix G

*Stimulus Information*

**Your Task:**

Please imagine that this breast cancer scenario is actually happening to you and your partner. In a routine mammogram, you (your partner) were alerted to some abnormal tissue in your left breast. You (your partner) had a biopsy of the breast tissue, and that test confirmed that it is breast cancer. Specifically, your physician estimates that the tumor is around 3 cm across. Now, you and your partner are faced with a treatment decision. You and your partner must choose between two treatment options: (a) lumpectomy surgery with radiation or (b) mastectomy surgery. Specifically, you and your partner will take part in a discussion in which you must make a treatment decision for your breast cancer.

**What is Breast Cancer?**

Cancer develops when cells in a part of the body begin to grow out of control. Although there are many kinds of cancer, they all start because of out-of-control growth of abnormal cells. Breast cancer is a malignant (cancerous) tumor that starts from cells of the breast.

**What is Lumpectomy Surgery with Radiation?**

Lumpectomy removes only the breast lump and a surrounding margin of normal tissue. Radiation therapy is usually given after a lumpectomy. Radiation therapy is treatment with high-energy rays or particles that kill cancer cells.
**What is Mastectomy Surgery?**

Mastectomy involves removal of all of the breast tissue, sometimes along with other nearby tissues. During a mastectomy, the surgeon removes the entire breast, including the nipple, but does not remove underarm lymph nodes or muscle tissue from beneath the breast.
Appendix H

Information Provided to Participants

**Unique Information Set A:**

- Lumpectomy surgery is recommended for tumors less than 2 cm across, whereas mastectomy surgery is recommend for tumors larger than 2 cm across.
- Having a mastectomy will completely remove the cancerous tumor.
- Patients who receive breast radiation after lumpectomy are usually treated 5 days a week in an outpatient center for about 6 or 7 weeks.

**Unique Information Set B:**

- Greater survival rates are expected if mastectomy surgery is conducted when the tumor is greater than 2 cm.
- Following lumpectomy surgery, if the pathologist finds there is cancer at the edge of the piece of tissue removed during surgery, the surgeon will need to do surgery again.
- Radiation therapy following lumpectomy can cause swelling, heaviness, and tenderness in the breast. Also, the breast may become burnt and the patient may experience fatigue.

**Shared Information:**

- Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.
- Typically there is not a hospital stays following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.
Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.

Following mastectomy, side effects include numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.
Appendix I

Functional Theory Directions

Please read over the following decision making directions. You should use this information in order to help you make the breast cancer treatment decision. You can bring this sheet of paper with you when you and your partner make the treatment decision.

Instructions A: (Functional Theory)

People facing important decisions do so in different ways. We know that people make better choices when people follow the below steps. Therefore, please use the following steps to make your treatment decision between (a) lumpectomy with radiation or (b) mastectomy:

1. Begin by assessing the problem at hand.
2. Next, establish the criteria that will be used to evaluate possible solutions against. These standards should be used in order to judge if a particular option acceptable.
3. Next, generate a set of reasonable and realistic solution options.
4. Next, decide if each possible solution is acceptable given the criteria previously established.
5. Finally, select the solution that is most acceptable given the previously established criteria.

Instructions B: (Free Format Discussion)

People facing important decisions do so in different ways. You have received information on two different treatment options: (a) lumpectomy with radiation or (b) mastectomy. During your
discussion, please make the best possible treatment decision you can. You should conduct this
discussion however you see fit. In other words, you should attempt to use the information to
make the best possible treatment decision in a discussion with your partner.
Appendix J

Post-Interaction Questionnaire

Thank you for taking part in that decision making task. We would now like you to reflect on how you communicated with your partner when you two were making the breast cancer treatment decision.

For each of the following statements, please mark the number that best indicates your level of agreement using the scale below.

| 1. I am satisfied with the treatment decision that my partner and I made | 1 2 3 4 5 |
| 2. The decision that my partner and I made is fulfilling to me | 1 2 3 4 5 |
| 3. I am pleased with the decision that we made | 1 2 3 4 5 |
| 4. I am dissatisfied with the decision that my partner and I made | 1 2 3 4 5 |
| 5. I am happy with the decision we made | 1 2 3 4 5 |

| 1. I think that we made a high quality decision | 1 2 3 4 5 |
| 2. My partner and I made a good decision | 1 2 3 4 5 |
| 3. The treatment decision my partner and I made is good | 1 2 3 4 5 |
| 4. We made an excellent treatment decision | 1 2 3 4 5 |
| 5. We made a poor treatment decision | 1 2 3 4 5 |

| 1. My partner and I had a good discussion before making the treatment decision | 1 2 3 4 5 |
| 2. We had a high quality treatment decision discussion | 1 2 3 4 5 |
| 3. Our treatment decision discussion was not very good | 1 2 3 4 5 |
| 4. I have doubts about the quality of the treatment discussion we had | 1 2 3 4 5 |
| 5. The decision my partner and I made was a good one | 1 2 3 4 5 |

| 1. My partner shared information with me during our discussion | 1 2 3 4 5 |
| 2. My partner made contributions to our discussion | 1 2 3 4 5 |
| 3. My partner revealed information to me throughout our discussion | 1 2 3 4 5 |
| 4. My partner did not share information with me as we discussed a treatment decision | 1 2 3 4 5 |
| 5. My partner was guarded in the information he/she shared with me | 1 2 3 4 5 |
Continue using the same scale for each of the following statements, please mark the number that best indicates your level of agreement using the scale below.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRONGLY DISAGREE</strong></td>
<td><strong>DISAGREE</strong></td>
<td><strong>NEITHER AGREE NOR DISAGREE</strong></td>
<td><strong>AGREE</strong></td>
<td><strong>STRONGLY AGREE</strong></td>
<td></td>
</tr>
<tr>
<td>1. I felt that my partner tried to discredit my statements</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. My partner tried to devalue my contributions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. My partner did not say anything positive about the contributions I made to the conversation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. My partner was hostile toward my contributions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. My partner was unreceptive toward the things I said during our conversation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. My partner reacted positively to the contributions I made to our conversation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. My partner agreed with my statements</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. My partner valued the input I had during our discussion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. My partner praised my contributions to the conversation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. My partner had positive things to say about the statements I made</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. My partner and I had an equal say in the decision</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. My partner and I contributed equally to the treatment that was chosen</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. My partner and I had the same amount of input in the decision</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. We both agreed on the final treatment decision</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. In the end, my partner and I agreed on the treatment that was chosen</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. I feel confident in the decision we made</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I am certain about the decision we made</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I feel sure about the decision my partner and I made</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I am uncertain about the decision my partner and I made</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I am confident in the decision my partner and I made</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
1. Reflecting on the conversation that you just had with your partner, please place an X in the location that best indicates the contribution you and your partner made to the final treatment decision: *(please an X along the following continuum)*

| I had more influence in the final decision | -----|-----|-----|-----|-----|-----|-----|-----| My partner had more influence in the final decision |
|------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|

For each of the following statements, please mark the number that best indicates your level of agreement using the scale below.

<table>
<thead>
<tr>
<th>1 2 3 4 5</th>
<th>STRONGLY DISAGREE</th>
<th>DISAGREE</th>
<th>NEITHER AGREE NOR DISAGREE</th>
<th>AGREE</th>
<th>STRONGLY AGREE</th>
</tr>
</thead>
</table>

**During the conversation with my partner . . .**

| 1. I was direct in my conversation with my partner during our treatment decision discussion | 1 2 3 4 5 |
| 2. I was subtle in the discussion I had with my partner about the treatment decision | 1 2 3 4 5 |
| 3. I was blunt and to the point with my partner during our discussion | 1 2 3 4 5 |
| 4. I was upfront with my partner during the treatment decision discussion | 1 2 3 4 5 |
| 5. I was straightforward with my partner about my thoughts about the treatment options | 1 2 3 4 5 |

| 1. I shared my thoughts and feelings with my partner during our treatment decision discussion | 1 2 3 4 5 |
| 2. I was guarded when discussing a treatment decision with my partner | 1 2 3 4 5 |
| 3. I revealed my thoughts about a treatment decision with my partner | 1 2 3 4 5 |
| 4. I openly told my partner how I felt during our treatment decision discussion | 1 2 3 4 5 |
| 5. During our discussion, I told my partner my true thoughts and feelings about treatment options | 1 2 3 4 5 |
For each of the following statements, please mark the number that best indicates your level of agreement using the scale below.

<table>
<thead>
<tr>
<th></th>
<th>STRONGLY DISAGREE</th>
<th>2</th>
<th>DISAGREE</th>
<th>3</th>
<th>NEITHER AGREE</th>
<th>4</th>
<th>AGREE</th>
<th>5</th>
<th>STRONGLY AGREE</th>
<th>NOR DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I focused on being positive when talking with my partner during our treatment decision discussion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I had a negative tone when talking with my partner during our treatment decision discussion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I tried to be upbeat during our treatment decision discussion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I tried to be encouraging when my partner and I discussed a treatment decision</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I had an unconstructive tone during our treatment decision discussion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please continue to think about the conversation you just had with your partner. Using the following scale, please respond to the following statement.

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

The CONVERSATION my partner and I had when making the breast cancer treatment decision was . . .

<table>
<thead>
<tr>
<th></th>
<th>Guarded</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Satisfying</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Fulfilling</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Supportive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Encouraging</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Comfortable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Relaxed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>Tense</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Stressful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Hopeful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>Positive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>Hard</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>Difficult</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14</td>
<td>Disconcerting</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>Upsetting</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Again, thinking about the conversation that you just had with your partner. Please respond to the following statement using this scale:

Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree

| During the conversation my partner and I just had, MY PARTNER MADE ME FEEL . . . |
|---------------------------------|---|---|---|---|---|
| 1. Hurt                         | 1 | 2 | 3 | 4 | 5 |
| 2. Sad                          | 1 | 2 | 3 | 4 | 5 |
| 3. Angry                        | 1 | 2 | 3 | 4 | 5 |
| 4. Happy                        | 1 | 2 | 3 | 4 | 5 |
| 5. Embarrassed                  | 1 | 2 | 3 | 4 | 5 |
| 6. Guilty                       | 1 | 2 | 3 | 4 | 5 |
| 7. Hopeless                     | 1 | 2 | 3 | 4 | 5 |
| 8. Surprised                    | 1 | 2 | 3 | 4 | 5 |
| 9. Jealous                      | 1 | 2 | 3 | 4 | 5 |
| 10. Scared                      | 1 | 2 | 3 | 4 | 5 |

Again, thinking about the conversation that you just had with your partner. Please respond to the following statement using this scale:

Strongly Disagree | 1 | 2 | 3 | 4 | 5 | Strongly Agree

| During the conversation my partner and I just had . . . |
|---------------------------------|---|---|---|---|---|
| 1. I dominated my partner       | 1 | 2 | 3 | 4 | 5 |
| 2. My partner dominated me      | 1 | 2 | 3 | 4 | 5 |
| 3. I was submissive to my partner | 1 | 2 | 3 | 4 | 5 |
| 4. I controlled my partner     | 1 | 2 | 3 | 4 | 5 |
| 5. My partner controlled me    | 1 | 2 | 3 | 4 | 5 |
| 6. My partner was submissive to me | 1 | 2 | 3 | 4 | 5 |
| 7. I expressed liking my partner | 1 | 2 | 3 | 4 | 5 |
| 8. My partner expressed liking me | 1 | 2 | 3 | 4 | 5 |
| 9. I was caring toward my partner | 1 | 2 | 3 | 4 | 5 |
| 10. My partner was caring toward me | 1 | 2 | 3 | 4 | 5 |
| 11. I was not affectionate toward my partner | 1 | 2 | 3 | 4 | 5 |
| 12. My partner was not affectionate toward me | 1 | 2 | 3 | 4 | 5 |
| 13. I was involved in the conversation | 1 | 2 | 3 | 4 | 5 |
| 14. My partner was involved in the conversation | 1 | 2 | 3 | 4 | 5 |
| 15. I did not contribute to the conversation | 1 | 2 | 3 | 4 | 5 |
| 16. My partner did not contribute to the conversation | 1 | 2 | 3 | 4 | 5 |
| 17. I was engaged in the conversation | 1 | 2 | 3 | 4 | 5 |
| 18. My partner was engaged in the conversation | 1 | 2 | 3 | 4 | 5 |
Please select the number that reflects how much you agree or disagree with each statement. The scale ranges from complete disagreement to complete agreement.

My partner . . .

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>1.</td>
<td>Was intensely involved in our conversation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Did not want a deeper relationship</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Was not attracted to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Seemed to find the conversation stimulating</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>Communicated coldness rather than warmth</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>Created a sense of distance between us</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>Acted bored by our conversation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8.</td>
<td>Was interested in talking to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>Made me feel similar to him/her</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10.</td>
<td>Tried to move the conversation to a deeper level</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11.</td>
<td>Desired further communication</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12.</td>
<td>Seemed to care if I liked him/her</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13.</td>
<td>Was sincere</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.</td>
<td>Was interested in talking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.</td>
<td>Wanted me to trust him/her</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16.</td>
<td>Was willing to listen</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17.</td>
<td>Was open to my ideas</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18.</td>
<td>Was honest in communicating with me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19.</td>
<td>Felt very tense talking to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20.</td>
<td>Was calm and poised</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21.</td>
<td>Was relaxed talking to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22.</td>
<td>Was nervous in my presence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23.</td>
<td>Was comfortable interacting with me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24.</td>
<td>Made the interaction informal</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25.</td>
<td>Wanted the discussion to be casual</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26.</td>
<td>Wanted the discussion to be informal</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
For the following questions please select the number that reflects how much you agree or disagree with each statement.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

The conversation I just had with my partner . . .

1. Was similar to others I’ve had with this person
2. Felt natural
3. Wasn’t typical for my partner and I
4. Seemed unrealistic
5. Is like others that happen often in our relationship
6. Made me think about my relationship with him/her
7. Was relevant to our relationship
8. Was about our relationship
9. Included information about our relationship

This concludes the study. Thank you for your participation! Your answers to these questions will help us to better understand how couples make medical treatment decisions together. We appreciate your time and your contribution to this program of research.

If you have questions about this study, please contact Kirsten Weber at kmm464@psu.edu, or Denise Solomon at dhs12@psu.edu.

If there are questions regarding rights as a research subject, then please contact the Office of Research Protections (814) 865-1775.
Appendix K

*Excerpts from the Presence of Information Training Instructions*

**Overview:**
— For this coding task we have two main goals:
  o **The first goal** is to identify the pieces of information that either of the participants mentioned during their discussion together. These pieces of information are labeled 1-14.
  o **The second goal** is to indicate if the person accurately or inaccurately represented the information they said. This accuracy judgment will only be given to codes 1-10.

**What to do:**
— First, place your initials and the date/time on the first page of the transcript.
— Then, read through the written transcript of the dyad’s discussion turn-by-turn.
  1. Specifically, you should read through 1 speaking turn at a time.
  2. Then, read that same speaking turn a second time to see if codes 1-7 are present.
  3. Following, read the same speaking turn a third time to see if codes 8-14 are present.
— As you read through the transcript, for each turn that is taken (i.e., the dialogue that appears on the left hand side of the page) you should circle the “code” (i.e., number on the right hand side of the page) that corresponds with the piece of information that is mentioned.
  1. In each speaking turn, you should circle all of the pieces of information that are mentioned. Therefore, you will circle between 0-14 pieces information for each turn that is taken. This means that in 1 speaking turn a person could mention multiple pieces of information and you should circle ALL of the pieces of information they mention. You should only circle the pieces of information that they have mentioned.
— After you have circled the code that corresponds to the piece of information, then you must indicate the accuracy of each piece of information that was mentioned. In other words, you are to indicate if the person accurately articulated the piece of information he/she mentioned. This accuracy judgment will only be made on codes 1-10. You should place a +, -, or ∅ after each piece of information that you have circled.
  1. + means the person mentioned the information accurately
  2. - means the person mentioned the information in an inaccurate way
  3. ∅ means that you can’t tell or unsure about the accuracy of the information
# Pieces of Information and Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Piece of information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lumpectomy surgery is recommended for tumors less than 2cm across, whereas mastectomy surgery is recommend for tumors larger than 2cm across.</td>
</tr>
<tr>
<td>2</td>
<td>Having a mastectomy will completely remove the cancerous tumor.</td>
</tr>
<tr>
<td>3</td>
<td>Patients who receive breast radiation after lumpectomy are usually treated 5 days a week in an outpatient center for about 6 or 7 weeks.</td>
</tr>
<tr>
<td>4</td>
<td>Lumpectomy surgery allows the patient to keep her breast; however, mastectomy surgery requires that the breast with cancer be completely removed.</td>
</tr>
<tr>
<td>5</td>
<td>Typically there is not a hospital stays following lumpectomy surgery. Hospital stays for mastectomy surgery average as much as 3 days.</td>
</tr>
<tr>
<td>6</td>
<td>Mastectomy surgery usually takes 1.5-2 hours, whereas lumpectomy surgery usually takes 15-45 minutes.</td>
</tr>
<tr>
<td>7</td>
<td>Following mastectomy, side effects include numbness, tenderness, sensitivity, and sometimes fluid collection under the scar. Following lumpectomy surgery, there is usually a loss of sensation in part of the breast, but some or most of this ability to feel can return.</td>
</tr>
<tr>
<td>8</td>
<td>Greater survival rates are expected if mastectomy surgery is conducted when the tumor is greater than 2cm.</td>
</tr>
<tr>
<td>9</td>
<td>Following lumpectomy surgery, if the pathologist finds there is cancer at the edge of the piece of tissue removed during surgery, the surgeon will need to do surgery again.</td>
</tr>
<tr>
<td>10</td>
<td>Radiation therapy following lumpectomy can cause swelling, heaviness, and tenderness in the breast. Also, the breast may become burnt and the patient may experience fatigue.</td>
</tr>
<tr>
<td>11</td>
<td>Information cited from a creditable source (for example, a doctor, a journal, a magazine, a NIH study, information about breast cancer that is not part of the above pieces of information)</td>
</tr>
<tr>
<td>12</td>
<td>Personal experiences with or references to one’s own breast cancer or one’s own experiences with a particular disease/medical condition/experience</td>
</tr>
<tr>
<td>13</td>
<td>References made about experiences that other people have had (this could include a reference they made about their partner, friends, relatives, or people in the media such as Elizabeth Edwards)</td>
</tr>
<tr>
<td>14</td>
<td>When a person expresses a personal opinion, reaction, belief, or feeling; for example, they want a particular treatment or they feel scared about a particular treatment. This would also include if a male speculates about what they would do if they had male breast cancer.</td>
</tr>
</tbody>
</table>
Sample Coding Sheet

**Dyad 001**  
**Information Presence: Name/date/time:** ______________________________

**Bolstering/Discounting: Name/date/time:** ______________________________

<p>| | | | | | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>F: When do you want us to start? Now, is. Oh, are we already being filmed?</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>M: Okay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.</td>
<td>F: I hope that this gets to Hollywood.</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>4.</td>
<td>M: laugh</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>F: All I want to know is what you said about us.</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>M: inaudible . . . assessing the problem, okay.</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7.</td>
<td>F: Oh my god, those questions were a little heavy. Okay I, I'll just tell you my views. I would have the mastectomy. What do you think?</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Appendix L

Information Bolstering Discounting Training

Bolstering is understood as communicative acts that privilege information brought forth by another group member (Cruz, Boster, & Rodríguez, 1997). In other words, bolstering information places more value on that piece of information. Conversely, discounting occurs when other group members discredit information presented to the group (Cruz, Boster, & Rodríguez, 1997). For example, information that is discounted is devalued in comparison to other pieces of information that the group encounters.

Bolstering is understood as any instance in which a speaker promotes the importance of a piece of information that is consistent with their position (Boster et al., 1990). On the other hand, discounting is defined as communicative acts in which a group member negates or contradicts the importance of a piece of information that is inconsistent with their position (Boster et al., 1990).

I was thinking the same thing. As I think about normative influence in groups, showing interest or encouraging someone to elaborate is quiet endorsement (a 1, rather than a 2). On the other hand, putting someone in the position of defending a position, while it might also require elaboration, is more of a discounting move. So, the +1 / -1 distinction might concern whether the overall tone is supportive or unsupportive (implicitly -- explicitly gets you a +2 or -2).

Overview:
— This task relates to the interactions that you had the opportunity to observe.
— For this coding task we have one main goal:
  o **Your goal** is to determine if partners are trying to bolster or discount information that is said to them by their significant other. You should do this by looking to the content of their response as well as their nonverbal communication including the way the person responses (i.e., tone of voice, inflection, sarcasm).
  o **Bolstering:** Occurs when some one agrees, enhances, or inflates the value of a piece of information.
    ▪ **Example 1:** A: I am afraid of hospital stays.
      B: You are right, staying in a hospital can be problematic.
    ▪ **Example 2:** A: I don’t think staying in a hospital is a big deal.
      B: You are right, you shouldn’t worry about staying in a hospital.
  o **Discounting:** Occurs when someone disagrees, decreases, or deflates the value of a piece of information.
    ▪ **Example 3:** A: I am afraid of hospital stays.
B: Don’t worry about the hospital stay, nothing bad is going to happen to you.

- **Example 4:**
  A: I don’t think staying in a hospital is a big deal.
  B: Well, you should, a lot of bad things can happen in a hospital.

- **Neutral:**
  When bolstering or discounting of the information cannot be determined.

- **Example 5:**
  A: I am afraid of hospital stays.
  B: Ohh.

- **Example 6:**
  A: I don’t think staying in a hospital is a big deal.
  B: Why do you feel that way?

**What to do:**

— First, place your initials and the date/time on the “**Bolstering/Discounting: Name/date/time**” line on the first page of the transcript.

— You will be simultaneously watching the dyad’s interaction and reading through a transcript of the interaction.

1. First, you should watch through the entire interaction one time to get an overall sense of the interaction.

2. Then, watch the interaction a second time and pause the DVD when you get to a piece of information that needs to be rated for bolstering or discounting.

3. You will be rating each piece of information that is marked on the transcript. In particular, you will code the immediate response (i.e., the next turn that is taken) to the piece of information that is presented in the conversation. If there are multiple pieces of information in one speaking turn, then you will rate for bolstering and discounting for each piece of information in the next turn that is taken.

For example, information codes 1, 5, 6, and 7 are present in speaking turn #1. Therefore you would rate for bolstering and discounting for each piece of information that is addressed in turn #2. Notice that the ratings for bolstering and discounting (for turn #1) are placed in turn #2.
### The rating scale:
— You will be rating bolstering and discounting on the following Likert-type scale.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Examples of possible responses?</th>
</tr>
</thead>
</table>
| -2     | Well, I completely disagree . . .  
        | That’s not what I read . . .    |
| -1     | Hmmm?                           
        | Really?                          |
| 0      | If the piece of information is not addressed in the response. Or, if the response does not bolster or discount the information given. |
| 1      | Um-hm.                          
        | Okay.                            
        | Right.                           |
| 2      | Well, I completely agree . . .  
        | You’re right about . . .         |

<table>
<thead>
<tr>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagrees, decreases, or deflates the value of a piece of information</td>
<td>Somewhat disagrees, decreases, or deflates the value of a piece of information</td>
<td>Neither agrees nor disagrees with the value of a piece of information.</td>
<td>Somewhat agrees, enhances, or inflates the value of a piece of information</td>
<td>Strongly agrees, enhances, or inflates the value of a piece of information</td>
</tr>
</tbody>
</table>
Appendix M

Fundamental Task Requirement Training

**Overview of the study:**
Couples were brought into the lab. They were asked to take part in a hypothetical treatment decision making task. Specifically, women were asked to pretend they had just received a diagnosis of breast cancer. Couples were given information about breast cancer and then asked to make a treatment decision together. In particular, they were asked to choose between (a) lumpectomy surgery with radiation and (b) mastectomy surgery.

**What is rating?**
- After conducting observational research, researchers need to develop a system for classifying or quantifying the frequency of communication behaviors.
- Therefore, you all will be assigning ratings to specific communication behavior.

**Overview:**
- For this rating task our goal is to identify how well couples completed each of the steps in functional theory.
- Functional theory describes steps that help people make decisions.
- Following are the 5 steps established by the theory:
  - Begin by assessing the problem at hand.
  - Next, establish the criteria that will be used to evaluate possible solutions against. These standards should be used in order to judge if a particular option is acceptable.
  - Next, generate a set of reasonable and realistic solution options.
  - Next, decide if each possible solution is acceptable given the criteria previously established.
Finally, select the solution that is most acceptable given the previously established criteria.

The couples in our study were assigned to make a hypothetical treatment selection for a diagnosis of breast cancer. Your job is to identify (rate) if couples completed any part of these 5 functional steps.

**What to do:**

- First, place your initials and the date/time on the first page of the coding sheet. And, make sure that the dyad on your coding sheet matches the dyad number in the upper left hand corner of the screen (see noted exceptions).
- Then, watch the dyad’s interaction in its entirety as you following along with the transcript.
  - There may be markings on the transcript, but they don’t have anything to do with your task so you don’t have to worry about the markings.
- After you watch the entire interaction once, you should begin rating.
  - You will be rating the interactions at 2 minute intervals (from 0:00 to 1:59, from 2:00-2:59, from 3:00-3:59 etc.). Time 0:00 should begin when the “tape” begins.
- Therefore, you should begin rating by watching the first 2 minutes of the interaction for a second time. Then, pause the tape after you have watched the first 2 minutes and rate just that section. Once you have rated the first 2 minutes of the tape, you can move onto the second 2 minutes of the tape. Watch the second two minutes of the tape and pause the tape, then rate only the second 2 minutes of the tape. Continue this process until the interaction is done.
- When you pause the tape, you should circle the “rating” that represents to what extent each couple fulfilled (achieved) each of the functional theory steps. Therefore, for each 2 minute interval, you will be making 5 judgments (or assigning 5 codes).
Example rating sheet:

Dyad: ___________  Function Theory Rating
Judge: ___________  Date/time: ______________

<table>
<thead>
<tr>
<th>Minutes 0:00 – 1:59</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The problem was <strong>NOT</strong> thoroughly assessed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>No</strong> criteria were established to evaluate possible solutions/treatments.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>No</strong> set of reasonable and realistic solution/treatment options were generated.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Did <strong>NOT</strong> decide if each possible solution/treatment was acceptable given the previously established criteria.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Did <strong>not</strong> clearly select a solution/treatment based on previously established criteria.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minutes 2:00 – 3:59</th>
<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>The problem was <strong>NOT</strong> thoroughly assessed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>No</strong> criteria were established to evaluate possible solutions/treatments.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>No</strong> set of reasonable and realistic solution/treatment options were generated.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Did <strong>NOT</strong> decide if each possible solution/treatment was acceptable given the previously established criteria.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Did <strong>not</strong> clearly select a solution/treatment based on previously established criteria.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**Note:** 1 = none of the behavior is present 5 = a great deal of the behavior is present
**Rating/Understanding the steps of functional theory:**

**STEP 1: Assessing the problem at hand.**
- The couple must make a treatment decision between (a) lumpectomy surgery with radiation and (b) mastectomy surgery.
- Lumpectomy surgery is comprised of making a small surgical incision that removes the cancerous lump, but leaves the rest of the breast.
- Mastectomy surgery is the complete removal of the breast.
- Radiation therapy is treatment with high-energy rays or particles that kill cancer cells.
- Chemotherapy is the treatment of a disease with the use of chemicals aimed at killing cells.

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<thead>
<tr>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Don’t say what the problem is</td>
<td>– They mention that they have breast cancer, but they don’t elaborate. OR – They have breast cancer and they must make a treatment selection, but they don’t expand.</td>
<td>– Clearly define/describe the situation (for example indicating that it is a 2cm lump, in left breast etc.) – Talks through the meaning of the situation or shows correct understanding of the issue – Identifies that they must make a treatment selection – Mention both of the treatment options</td>
</tr>
</tbody>
</table>

- Keep in mind that the focus of this rating should be if they are discussing the initial criteria defining the problem.
  - In particular, that the woman was diagnosed with breast cancer. She has a lump in her left breast and it is around 2cm in size.
- Also, at different points throughout the discussion the couple may again talk about the lump being around 2 cm – this may warrant a rating of 2, but be careful not to just got whenever 2cm is mentioned.
STEP 2: Establish the criteria that will be used to evaluate possible solutions against. These standards should be used in order to judge if a particular option is acceptable. In other words, during this step the couple is to determine standards or characteristics that would make a solution acceptable.

- If we are thinking about our problem of going on spring break, this would be the time that you think of all the criteria that would make an acceptable spring break location.
  i. Typically, people want to go somewhere warm for spring break. So, that might be one criteria. Another might be to so some were secluded to “get away from it all.” Other criteria might be a cheap location, a place you don’t need a passport for, a place that you can fly direct to from the Atlanta airport etc.

<table>
<thead>
<tr>
<th>1</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t mention any criteria for evaluating possible solutions/treatments</td>
<td>Explicitly mention criteria that will be used to evaluate possible solutions/treatments against.</td>
</tr>
<tr>
<td></td>
<td>Another way to think about this is if they mention what they are going to base their decision on</td>
</tr>
<tr>
<td></td>
<td>For example, pain, length of survival, time away from work, loss of breast, hospitalization, anesthesia, kids . . .</td>
</tr>
<tr>
<td></td>
<td>Keep in mind that people may have just 1 criteria, but they may go into a great deal of depth about that 1 criteria.</td>
</tr>
<tr>
<td></td>
<td>Conversely, a person may list several different criteria that they have.</td>
</tr>
</tbody>
</table>

- Example 1: “If its an issue of survival and, umm, you know, the mastectomy is just the way to go and that’s what I based that on, rather have you alive-“
- Example 2: “I think probably in making a decision like this, too, we would both want to know what the ultimate goal is. Like is the ultimate goal just to survive or is the ultimate goal, um, uh deciding which gives the optimum quality of the life you have left. Whatever it is, uhm. And so, there’s where we might, we might differ in opinion on that.”

- Criteria may be implied or may be stated explicitly. In either case, the spirit of the interaction should be discussing criteria for evaluating solutions: not merely talking about side effects/outcomes/procedures etc.
  - Heart of the discussion: Gosh, I’m really scared to go under anesthesia. It would be hard for me to do a surgery that required me to be put to sleep.
  - Not heart of the discussion: The card said that you would need to be put to sleep to have the surgery.

STEP 3: Next, generate a set of reasonable and realistic solution options. During this step, the couple should talk about possible treatment options. They might list the treatment options we provided them with or they might generate different treatments than the two main options we gave them.
• One way to think about this is simply generating solutions to a problem. Like I mentioned before, if your problem is that you have to decide where you want to go on spring break – this stage would be when you are listing (or brainstorming) possible places to go.
  i. Hmm, possible places I might want to go to spring break: Jamaica, Hawaii, Miami, Greece, Costa Rica rain forest, Barbados, St. Kitts, Upper peninsula of Michigan, central Pennsylvania

• Therefore, couples at this stage should be listing possible treatment options (because treatment options are the “solution” to the problem of having breast cancer).
• Keep in mind, that in the study we gave each couple the possibility of either having (a) lumpectomy surgery with radiation treatment or (b) mastectomy surgery. Therefore, these are two possible “solutions” / treatments to having breast cancer.

<table>
<thead>
<tr>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>They don’t mention any possible solutions/treatments</td>
<td>They mention 1 treatment option but not the other</td>
<td>Mentions both treatment options</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Could mention other possible treatment options in addition to lumpectomy surgery with radiation or mastectomy surgery</td>
</tr>
</tbody>
</table>

• Again, the spirit of this “step” is generating solutions options. If they just mention mastectomy during the conversation it isn’t enough to warrant giving a code of 5. Try to think of this step as more than just saying mastectomy or lumpectomy. Rather, think as to whether the participants spent time actually thinking about what options they have.
  o Spirit of generating solutions: *I mean, I guess there is the possibility of doing a mastectomy. On the other hand, I could have a lumpectomy with radiation.*
  o No spirit of generating solutions: *It says that the mastectomy requires a hospital stay of 3 or so days, but that lumpectomy is outpatient.*

**STEP 4: Next, decide if each possible solution is acceptable given the criteria previously established.** (For more examples see “Pieces of Information” below)
• During this stage, the couple should be comparing their criteria for an acceptable solution with their possible treatment options.
• Therefore, there should be some discussion as to whether either of the treatment options meets any of the criteria the couple discussed.
• Using the spring break example:
  i. Criteria (step 2): go to a place that is both warm and secluded
  ii. Possible solutions (step 3): Jamaica, Hawaii, Miami, Greece, Costa Rica rain forest, Barbados, St. Kitts, Upper peninsula of Michigan, central Pennsylvania
  iii. Comparing criteria and possible solutions (current step) would look like this: Michigan and Pennsylvania are secluded, but not warm. Jamaica,
Hawaii, Miami, & Greece are warm, but not secluded. Barbados & St. Kitts are both warm and secluded.

<table>
<thead>
<tr>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>– They don’t compare their possible solutions/treatments to any criteria</td>
<td>– They don’t seem to make an in-depth or direct comparison between possible solutions/treatments and criteria for evaluating solutions/treatments.</td>
<td>– They compare their solutions/treatments with the criteria that they came up with.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– For example, a criterion might be <em>what treatment will allow me to miss the least amount of work</em> – the couple would make some sort of assessment as to whether lumpectomy surgery with radiation or mastectomy surgery (possible solutions/treatments) would allow them to keep going to work.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– In this stage, the couple may focus in on just one particular criteria (such as the loss of a breast) or they may discuss several different criteria.</td>
</tr>
</tbody>
</table>
STEP 5: Finally, select the solution that is most acceptable given the previously established criteria. This is the portion of the conversation dedicated to making a decision.

- Keep in mind, that at this stage the couple should reflect on which treatment would be the best given the criteria they’ve established and discussed. Therefore, it isn’t enough that they make a decision, rather, they need to make a decision clearly based on their criteria.
- Spring break based on criteria: Well, given that I really want to go somewhere warm and it is important that I go somewhere secluded, I guess I’ll go to Barbados.
- Spring break NOT based on criteria: I just want to go to Barbados.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>They don’t select a solution/make a treatment selection based on previously established criteria.</td>
<td>They clearly select a solution/make a treatment selection that is based on their criteria.</td>
</tr>
<tr>
<td>NOT based on criteria: Well, I know we’ve talked about all this, but I just want to get a mastectomy.</td>
<td>For example, “because I don’t want to miss work, and lumpectomy surgery allows me to keep going to work, I would select the lumpectomy surgery with radiation.”</td>
</tr>
</tbody>
</table>

- Be sure to code this even if neither participant explicitly says “I choose mastectomy/lumpectomy.” As we’ve seen, it is easy to tell that the participants have a preference for one or the other treatment, but merely say something like “we’ve made a decision.”

- Be sure to make the distinction between an individual stating a personal preference and the couple making a decision together. Throughout the video, one person may state a personal preference. However, coding this step as a 5 should be used when the couple comes to a decision together (if they do).
Appendix N

Tables and Figures

Table 1

*Participants’ Post-Interaction Treatment Selection by Pre-Interaction Treatment Preference*

<table>
<thead>
<tr>
<th>Pre-Interaction Preference</th>
<th>Lumpectomy Surgery</th>
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*Dyads’ Post-Interaction Treatment Selection by Pre-Interaction Agreement*

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*Fulfillment of Fundamental Task Requirements by Experimental Condition*

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*Note.* $N = 107$ couples.
Table 4

*Correlations among Continuous Variables*

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*Note.* Due to missing data, Ns ranged from 211-214.

*p < .05. **p < .01.
Table 5

*T-tests for Couples’ Continuous Variables by Objective Decision Quality and Completion of the Functional Theory*

**Fundament Tasks**

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<th>Partner Uncertainty</th>
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<th>Information Sharing</th>
<th>Information Bolstering</th>
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<th>Conversational Length</th>
<th>Decision Satisfaction</th>
<th>Subjective Decision Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2.39</td>
<td>10.98</td>
<td>4.70</td>
<td>4.69</td>
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<tr>
<td></td>
<td>(1.00)</td>
<td>(7.63)</td>
<td>(0.35)</td>
<td>(0.37)</td>
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<tr>
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<td>2.20</td>
<td>9.84</td>
<td>4.55</td>
<td>4.58</td>
</tr>
<tr>
<td></td>
<td>(0.89)</td>
<td>(5.60)</td>
<td>(0.46)</td>
<td>(0.44)</td>
</tr>
<tr>
<td></td>
<td><strong>-1.08</strong></td>
<td><strong>-0.89</strong></td>
<td><strong>-1.80</strong></td>
<td><strong>-1.41</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Selected Solution</th>
<th>Conversational Difficulty</th>
<th>Conversational Length</th>
<th>Decision Satisfaction</th>
<th>Subjective Decision Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2.30</td>
<td>10.23</td>
<td>4.60</td>
<td>4.62</td>
</tr>
<tr>
<td></td>
<td>(0.92)</td>
<td>(6.38)</td>
<td>(0.44)</td>
<td>(0.43)</td>
</tr>
<tr>
<td>No</td>
<td>2.16</td>
<td>11.00</td>
<td>4.71</td>
<td>4.69</td>
</tr>
<tr>
<td></td>
<td>(1.10)</td>
<td>(7.80)</td>
<td>(0.29)</td>
<td>(0.28)</td>
</tr>
<tr>
<td></td>
<td><strong>-0.51</strong></td>
<td><strong>0.41</strong></td>
<td><strong>0.88</strong></td>
<td><strong>0.62</strong></td>
</tr>
</tbody>
</table>

*Note. N = 107 couples. Cell entries are means, with SD in parends, and t-value in bold-face.*

*p < .05. **p < .01.
### Table 6

*Fulfillment of Functional Theory’s Tasks by Objective Decision Quality*

<table>
<thead>
<tr>
<th></th>
<th>Objective Decision Quality</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lumpectomy Surgery</td>
<td>Mastectomy Surgery</td>
<td></td>
</tr>
<tr>
<td>Assessed the Problem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>25</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Developed Criteria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>27</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Developed Solutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>27</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Assessed Solutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>27</td>
<td>34</td>
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</tr>
<tr>
<td>Yes</td>
<td>16</td>
<td>30</td>
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</tr>
<tr>
<td>Selected a Solution</td>
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<td>No</td>
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<tr>
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<td>36</td>
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</tr>
</tbody>
</table>

*Note. $N = 107$ couples.*
Table 7

*Results for the Hierarchical Linear Model Predicting Subjective Decision Quality from*

*Completion of the Five Fundamental Tasks*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.51</td>
<td>.05</td>
<td>98.25**</td>
</tr>
<tr>
<td>Conversational Difficulty</td>
<td>-0.11</td>
<td>.03</td>
<td>-3.55**</td>
</tr>
<tr>
<td>Interaction Length</td>
<td>-0.01</td>
<td>.01</td>
<td>-1.69t</td>
</tr>
<tr>
<td>Pre-Interaction Agreement</td>
<td>0.02</td>
<td>.06</td>
<td>3.89**</td>
</tr>
<tr>
<td>Assessed Problem</td>
<td>0.12</td>
<td>.09</td>
<td>1.27</td>
</tr>
<tr>
<td>Developed Criteria</td>
<td>-0.17</td>
<td>.07</td>
<td>-2.54**</td>
</tr>
<tr>
<td>Developed Solutions</td>
<td>-0.04</td>
<td>.10</td>
<td>-0.35</td>
</tr>
<tr>
<td>Assessed Solutions</td>
<td>0.15</td>
<td>.07</td>
<td>2.03*</td>
</tr>
<tr>
<td>Selected a Solution</td>
<td>-0.09</td>
<td>.08</td>
<td>-1.12</td>
</tr>
</tbody>
</table>

*Note. N = 214 for Level-1 variables with 98 degrees of freedom; N = 107 for Level-2 variables.*

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

*The Regression of Objective Decision Quality onto Measures of the Five Fundamental Tasks*

<table>
<thead>
<tr>
<th>Step 1: $R^2$</th>
<th>( \beta )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversational Difficulty</td>
<td>.22</td>
</tr>
<tr>
<td>Length of Conversation</td>
<td>-.24*</td>
</tr>
<tr>
<td>Pre-interaction agreement</td>
<td>-.16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2: $R^2\Delta$</th>
<th>( \beta )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversational Difficulty</td>
<td>.11</td>
</tr>
<tr>
<td>Length of Conversation</td>
<td>-.23*</td>
</tr>
<tr>
<td>Pre-interaction agreement</td>
<td>-.15</td>
</tr>
<tr>
<td>Assessing the Problem</td>
<td>-.19</td>
</tr>
<tr>
<td>Developing Criteria</td>
<td>.12</td>
</tr>
<tr>
<td>Developing Solutions</td>
<td>-.11</td>
</tr>
<tr>
<td>Assessing Solutions</td>
<td>.16</td>
</tr>
<tr>
<td>Selecting a Solution</td>
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</table>

*Note. N = 107.*

*p < .05. **p < .01.*
Table 9

*Results for the Hierarchical Linear Model Predicting Subjective Decision Quality from Individual and Partner Information Sharing*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 Intercept</td>
<td>4.49</td>
<td>.06</td>
<td>76.15**</td>
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<tr>
<td>Conversational Difficulty</td>
<td>-0.11</td>
<td>.03</td>
<td>-3.06**</td>
</tr>
<tr>
<td>Interaction Length</td>
<td>-0.01</td>
<td>.01</td>
<td>-1.31</td>
</tr>
<tr>
<td>Pre-Interaction Agreement</td>
<td>0.01</td>
<td>.01</td>
<td>4.13**</td>
</tr>
<tr>
<td>Individual Information Sharing Slope</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.00</td>
<td>.01</td>
<td>-0.11</td>
</tr>
<tr>
<td>Conversational Difficulty</td>
<td>0.00</td>
<td>.00</td>
<td>0.58</td>
</tr>
<tr>
<td>Interaction Length</td>
<td>0.00</td>
<td>.00</td>
<td>-0.15</td>
</tr>
<tr>
<td>Pre-Interaction Agreement</td>
<td>0.01</td>
<td>.01</td>
<td>1.12</td>
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<tr>
<td>Partner Information Sharing Slope</td>
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<td></td>
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</tr>
<tr>
<td>Intercept</td>
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<td>.01</td>
<td>-0.94</td>
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<td>Pre-Interaction Agreement</td>
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<td>.01</td>
<td>1.29</td>
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</tbody>
</table>

*Note. N = 214 for Level-1 variables with 103 degrees of freedom; N = 107 for Level-2 variables with 202 degrees of freedom*

*p < .05. **p < .01.
Table 10

The Regression of Objective Decision Quality onto Measures of Female and Male Information Sharing

<table>
<thead>
<tr>
<th>Step 1: $R^2$</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>.06</td>
</tr>
<tr>
<td>Conversational Difficulty $\beta$</td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td>Length of Conversation $\beta$</td>
<td>-.24*</td>
<td></td>
</tr>
<tr>
<td>Pre-interaction agreement $\beta$</td>
<td>-.16</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2 $R^2 \Delta$</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.03</td>
</tr>
<tr>
<td>Conversational Difficulty $\beta$</td>
<td>.13</td>
</tr>
<tr>
<td>Length of Conversation $\beta$</td>
<td>-.34*</td>
</tr>
<tr>
<td>Pre-interaction agreement $\beta$</td>
<td>-.17</td>
</tr>
<tr>
<td>Female Information Sharing $\beta$</td>
<td>.24</td>
</tr>
<tr>
<td>Male Information Sharing $\beta$</td>
<td>-.07</td>
</tr>
</tbody>
</table>

Note. $N = 107$.

*p < .05. **p < .01.
Table 11

*Results for the Hierarchical Linear Model Predicting Decision Satisfaction from Individual and Partner Information Bolstering*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1 Intercept</strong></td>
<td>4.51</td>
<td>.06</td>
<td>80.24**</td>
</tr>
<tr>
<td>Conversational Difficulty</td>
<td>-0.08</td>
<td>.03</td>
<td>-2.52*</td>
</tr>
<tr>
<td>Interaction Length</td>
<td>-0.02</td>
<td>.01</td>
<td>-3.10**</td>
</tr>
<tr>
<td>Pre-Interaction Agreement</td>
<td>0.24</td>
<td>.07</td>
<td>3.28**</td>
</tr>
<tr>
<td><strong>Individual Information Bolstering Slope</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.24</td>
<td>.13</td>
<td>1.89</td>
</tr>
<tr>
<td>Conversational Difficulty</td>
<td>0.20</td>
<td>.10</td>
<td>2.04*</td>
</tr>
<tr>
<td>Interaction Length</td>
<td>0.04</td>
<td>.02</td>
<td>2.40*</td>
</tr>
<tr>
<td>Pre-Interaction Agreement</td>
<td>-0.02</td>
<td>.16</td>
<td>-0.12</td>
</tr>
<tr>
<td><strong>Partner Information Bolstering Slope</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.09</td>
<td>.13</td>
<td>-0.70</td>
</tr>
<tr>
<td>Conversational Difficulty</td>
<td>0.00</td>
<td>.10</td>
<td>-0.09</td>
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<td>Interaction Length</td>
<td>0.00</td>
<td>.02</td>
<td>0.65</td>
</tr>
<tr>
<td>Pre-Interaction Agreement</td>
<td>0.26</td>
<td>.16</td>
<td>1.58</td>
</tr>
</tbody>
</table>

*Note. N = 214 for Level-1 variables with 103 degrees of freedom; N = 107 for Level-2 variables with 202 degrees of freedom.

*p < .05. **p < .01.
Table 12

*Results for the Hierarchical Linear Model Predicting Subjective Decision Quality from Individual and Partner Information Bolstering*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1 Intercept</strong></td>
<td>4.55</td>
<td>.05</td>
<td>85.88**</td>
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<tr>
<td>Conversational Difficulty</td>
<td>-0.11</td>
<td>.03</td>
<td>-.321**</td>
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<tr>
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<td>-0.01</td>
<td>.01</td>
<td>-2.51**</td>
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<tr>
<td>Pre-Interaction Agreement</td>
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<td>2.93**</td>
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</table>

**Individual Information Bolstering Slope**

<table>
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<th>Predictor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.27</td>
<td>.12</td>
<td>2.27*</td>
</tr>
<tr>
<td>Conversational Difficulty</td>
<td>0.15</td>
<td>.10</td>
<td>1.57</td>
</tr>
<tr>
<td>Interaction Length</td>
<td>0.06</td>
<td>.01</td>
<td>4.24**</td>
</tr>
<tr>
<td>Pre-Interaction Agreement</td>
<td>0.17</td>
<td>.18</td>
<td>0.92</td>
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</table>

**Partner Information Bolstering Slope**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.01</td>
<td>.13</td>
<td>0.08</td>
</tr>
<tr>
<td>Conversational Difficulty</td>
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<td>1.57</td>
</tr>
<tr>
<td>Interaction Length</td>
<td>0.00</td>
<td>.02</td>
<td>-0.17</td>
</tr>
<tr>
<td>Pre-Interaction Agreement</td>
<td>-0.05</td>
<td>.18</td>
<td>-0.28</td>
</tr>
</tbody>
</table>

*Note. N = 214 for Level-1 variables with 103 degrees of freedom and 107 for Level-2 variables with 202 degrees of freedom.*

*p < .05. **p < .01.
Table 13

*The Regression of Objective Decision Quality onto Measures of Female and Male Information Bolstering*

<table>
<thead>
<tr>
<th>Step 1: ( R^2 )</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversational Difficulty ( \beta )</td>
<td>.13</td>
</tr>
<tr>
<td>Length of Conversation ( \beta )</td>
<td>-.24*</td>
</tr>
<tr>
<td>Pre-interaction agreement ( \beta )</td>
<td>-.16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2 ( R^2 \Delta )</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversational Difficulty ( \beta )</td>
<td>.15</td>
</tr>
<tr>
<td>Length of Conversation ( \beta )</td>
<td>-.24*</td>
</tr>
<tr>
<td>Pre-interaction agreement ( \beta )</td>
<td>-.23*</td>
</tr>
<tr>
<td>Female Information Bolstering ( \beta )</td>
<td>.12</td>
</tr>
<tr>
<td>Male Information Bolstering ( \beta )</td>
<td>.29*</td>
</tr>
</tbody>
</table>

*Note. \( N = 107 \).*

*\( p < .05 \). **\( p < .01 \).*
Table 14

*The Fit Indices for H4 and H5 Structural Equations*

<table>
<thead>
<tr>
<th>Outcome</th>
<th>$\chi^2$/df</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
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<tbody>
<tr>
<td>Assessing the Problem</td>
<td>1.26</td>
<td>0.99</td>
<td>0.05</td>
</tr>
<tr>
<td>Developing Criteria</td>
<td>1.54</td>
<td>0.99</td>
<td>0.07</td>
</tr>
<tr>
<td>Developing Solutions</td>
<td>2.00</td>
<td>1.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Assessing Solutions</td>
<td>1.09</td>
<td>1.00</td>
<td>0.03</td>
</tr>
<tr>
<td>Selecting a Solution</td>
<td>0.91</td>
<td>1.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Female and Male Information Sharing</td>
<td>1.04</td>
<td>1.00</td>
<td>0.02</td>
</tr>
<tr>
<td>Female and Male Information Bolstering</td>
<td>1.26</td>
<td>0.99</td>
<td>0.05</td>
</tr>
</tbody>
</table>

*Note. N = 107.*
Table 15

*Standardized Path Coefficients for Structural Equation Models Depicted in Figure 2.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h</th>
<th>i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing the Problem</td>
<td>.01</td>
<td>.65**</td>
<td>.31</td>
<td>.33</td>
<td>.67**</td>
<td>.01</td>
<td>-.16</td>
<td>.06</td>
<td>-.07</td>
</tr>
<tr>
<td>Developing Criteria</td>
<td>-.20</td>
<td>.66**</td>
<td>.31</td>
<td>.31</td>
<td>.68**</td>
<td>.30*</td>
<td>-.07</td>
<td>-.07</td>
<td>-.13</td>
</tr>
<tr>
<td>Developing Solutions</td>
<td>.04</td>
<td>.65**</td>
<td>.30</td>
<td>.33</td>
<td>.68**</td>
<td>.03</td>
<td>-.26</td>
<td>.10</td>
<td>.09</td>
</tr>
<tr>
<td>Assessing Solutions</td>
<td>.20</td>
<td>.65**</td>
<td>.31</td>
<td>.33</td>
<td>.67**</td>
<td>.18</td>
<td>-.13</td>
<td>.08</td>
<td>-.10</td>
</tr>
<tr>
<td>Selecting Solutions</td>
<td>.15</td>
<td>.65**</td>
<td>.31</td>
<td>.33</td>
<td>.67**</td>
<td>.22</td>
<td>-.19</td>
<td>-.16</td>
<td>-.03</td>
</tr>
<tr>
<td>Information Sharing</td>
<td>---</td>
<td>.69**</td>
<td>.31</td>
<td>.29</td>
<td>.68**</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Male</td>
<td>-.26*</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>.29*</td>
<td>-.12</td>
<td>-.13</td>
<td>.01</td>
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<tr>
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<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>-.03</td>
<td>-.18</td>
<td>.05</td>
<td>-.06</td>
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<tr>
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<td>.64**</td>
<td>.31</td>
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<td>.68**</td>
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</table>

*Note. N = 107.*

*p < .05. **p < .01.
Predicted SEM Model for H4 and H5 when One Dependent Variable Exists

Figure 1

Wives’ Self Uncertainty → Wives’ Relationship Uncertainty
Wives’ Partner Uncertainty → Wives’ Relationship Uncertainty
Wives’ Partner Interference → Outcome Variable
Couples’ Pre-interaction Agreement → Outcome Variable
Husbands’ Partner Interference → Outcome Variable
Husbands’ Self Uncertainty → Husbands’ Relationship Uncertainty
Husbands’ Partner Uncertainty → Husbands’ Relationship Uncertainty
Figure 2

Predicted SEM Model for H4 and H5 when Two Dependent Variables Exist

- Wives' Self Uncertainty
- Wives' Partner Uncertainty
- Wives' Relationship Uncertainty
- Wives' Partner Interference
- Couples' Pre-interaction Agreement
- Husbands' Partner Interference
- Husbands' Self Uncertainty
- Husbands' Partner Uncertainty
- Husbands' Relationship Uncertainty
- Wives' Outcome Variable
- Husbands' Outcome Variable

Variables and Their Interactions:

- $b (+)$
- $d (+)$
- $h_w (+)$
- $h_h (+)$
- $i_w (+)$
- $i_h (+)$
- $c (+)$
- $e (+)$
- $f_w (-)$
- $f_h (-)$
- $g_w (-)$
- $g_h (-)$
VITA

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