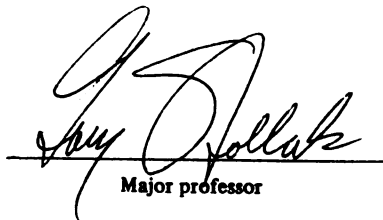This is to certify that the

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COMMUNICATION AND COGNITION IN MARRIAGE:
A MULTILEVEL, LONGITUDINAL STUDY OF
MARITAL PROCESS

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Keith Philip Sanford

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COMMUNICATION AND COGNITION IN MARRIAGE:
A MULTILEVEL, LONGITUDINAL STUDY OF MARITAL PROCESS

By

Keith Philip Sanford

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements for the degree of

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ABSTRACT

COMMUNICATION AND COGNITION IN MARRIAGE:
A MULTILEVEL, LONGITUDINAL STUDY OF MARITAL PROCESS

By

Keith Philip Sanford

In this multilevel, longitudinal study of marital process, instruments were devised

for assessing attributional blame, attributional concurrence, cognitive expectancies, issue

difficulty, and issue framing. Thirty-seven couples completed these instruments, along

with several self-report measures of current marital functioning, and were observed

engaging in four conflict-resolution conversations and one supportive conversation.

Assessments were conducted in two sessions spaced at least two weeks apart, and couples

were recontacted 3.5 years after the initial assessment to determine marital status and to

reassess marital satisfaction. Hierarchical Linear Modeling was used to analyze data

across multiple levels, revealing compositional effects for communication behavior.

Attributions, cognitive expectancies, issue framing, conflict resolution communication,

and supportive communication were all related to outcomes such as concurrent marital

functioning, change in marital satisfaction over time, and divorce. Issue difficulty was

not related to most outcomes. General traits regarding attributions were related to general

traits regarding communication behavior, but in examining communication in the context

of individual conversations, wives' cognitive expectancies were the best predictor of

communication behavior for both partners.

DEDICATION

Dedicated to my wife and partner, Kristen Sanford.

ACKNOWLEDGMENTS

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LIST OF ABBREVIATIONS

AOC   Areas of Change Questionnaire

DAS   Dyadic Adjustment Scale

DPA   Diffuse Physiological Arousal

HLM   Hierarchical Linear Modeling

IPT-15   Interpersonal Perception Task-15

MAPNU   Memory Accessibility of Partner Not Understanding

RCISS   Rapid Couples Interaction Scoring System

SOPERA   Schema of Partner Empathic Responding to Anger

INTRODUCTION

In this dissertation, I describe the results from a three-and-a-half year longitudinal study regarding marital process. The most important question addressed in this project pertains to relationships between communication behavior and three types of cognition: blaming attributions, concurrent attributions, and cognitive expectancies.[1] In addition to using these variables to predict concurrent and longitudinal marital outcomes, I also investigated the possible relationships among these variables across two levels of analysis, which I term the level of the conversation and the level of the person. To do this, it was necessary to expand upon the types of statistical procedures that are typically used in marital research. Thus, in this dissertation, I demonstrate the ways in which Hierarchical Linear Modeling, a statistical procedure commonly used in research in school psychology, can be used to address issues that have been raised in several theories of marital process – issues that researchers have previously been unable to empirically explore.

Some of the key issues and findings from this project are described in a self-standing chapter which is written to be read without needing to read other chapters in this dissertation. Thus, the reader who wants a concise overview of a few selected issues need only read Chapter 4 which is entitled, "Cognition, communication, and divorce: How variables function differently across multiple levels of marital process." For the reader wanting a more extensive discussion of the relevant literature and of the issues at

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[1] Notably, the types of cognition considered in this study will include primarily variables pertaining to conscious thought process and construal of interpersonal experiences within one's marriage.

hand, Chapter 1 includes a more thorough introduction and literature review. Chapters 2 and 3 include unabridged descriptions of the methods used in the study and the measures used in the study, respectively. These chapters provide more extensive information than what is provided in Chapter 4.

In addition to the selected issues regarding cognition and communication in marriage, the present project addressed other issues which expand upon the framework and the findings that are discussed in Chapter 4. These additional issues are described in Chapters 5, 6, and 7. Each of these chapters introduces a specific issue and then describes and discusses the data from the present project that bear on that issue. Specifically, the topics of these chapters include: communication behavior at the level of individual speaking turns (Chapter 5); the extent to which communication behavior observed in specific conflict-resolution conversations is influenced by the actual topics being discussed in those conversation (Chapter 6); communication behavior in supportive conversations where couples discuss daily hassles with each other (Chapter 7).

CHAPTER 1

Literature Review and Aims of the Study

Curious as to what I would find, I recently pulled nine current Introductory Psychology text books off my book shelf and began looking up the word marriage. Although these books reported that 95% of people in contemporary western culture marry, they devoted only an average of one-half page to the topic. Not only do most people in western culture enter the institution of marriage, but for many people, there is a close connection between marital quality and overall wellbeing. For those who enter this institution, a stable, loving, and satisfying relationship could be a key component to meaningful and fulfilling existence. In contrast, a relationship characterized by rage, contempt, and distrust could lead to years of loneliness and misery. The importance of marriage is indicated by research demonstrating a connection between various forms of marital quality and other outcomes such as life happiness, psychopathology, automobile accidents, physical illness, immune functioning, suicide, violence, homicide, and mortality (Berkman & Breslow, 1983; Bloom, Asher, & White, 1978; Burman & Margolin, 1992; Kiecolt-Glaser, et al., 1988; Lee, Seccombe, & Shehan, 1991). Moreover, marital distress is a common reason for seeking psychological help (e.g., Seligman, 1995; Veroff, Kulka, & Douvan, 1981) and the amelioration of marital distress alone has been found to be an effective treatment for depression (e.g., Beach, Whisman, & O'Leary, 1994). Accordingly, prominent marital researcher John Gottman (1994) describes the key goal on his research agenda as investigating: "why some marriages

appear to work as if by magic, whereas others are muddles of pure misery" (p. 28) – and certainly this is an important question to address.

The paucity of pages devoted to research on marriage in Introductory Psychology text books reflects the fact that this topic was originally considered as belonging to the domain of Sociology, and Psychologists have entered the field only recently. This trend is evident in the fact that the prominent sociological journal, *Journal of Marriage and the Family*, has been published since 1939, whereas the American Psychological Association did not begin publishing a journal in this area until 1991 when it acquired *Journal of Family Psychology* from Sage Publications who founded the journal only three years earlier. Sociological research on marriage began in the 1920ies and included a number of large sample questionnaire studies focussing on the relationship between self reported marital satisfaction and a range of demographic variables. Psychologists first began making a substantial contribution to this body of research in the early 1970ies, and since then, the psychological contribution has progressed largely (albeit, not exclusively) along three lines of research: research on communication behavior in marriage, research on attributions and other cognitive processes in marriage, and outcome research exploring the effectiveness of clinical interventions for couples.[2] The present project is a continuation of this story, a story that began almost 30 years ago when a handful of key researchers began pursuing these three lines of inquiry.

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[2] Examples of other important lines of research not discussed here include work on the "demand-withdrawal" pattern of marital interaction, the relationship between "neuroticism" and marital outcomes, and work on the nature of violence in marriage.

The first line of research pertains to communication behavior during couples' problem solving conversations (for more extensive historical reviews of this research, see Gottman, 1994; Weiss & Heyman, 1990, 1997). The hallmark of this line of research is an assessment procedure whereby couples come to a university communication laboratory where they discuss an unresolved issue in their relationship. Couples engage in a 10 to 15 minute problem solving conversation which is videotaped and later coded. Possibly, the best known researcher following this line of investigation is John Gottman, who originally worked at Indiana University with his graduate students Howard Markman and Cliff Notarius. This group identified several key predictors of marital distress such as negative reciprocity between partners and the ratio of positive to negative communication behaviors. Later, at University of Washington, and partly in collaboration with Robert Levenson, Gottman focused on using communication behavior along with concomitant affective and physiological variables to predict divorce. In general, Gottman (1994) has found that communication behavior correlates with several variables comprising his "cascade toward divorce," such as self reported marital quality, feeling flooded by negative emotion in one's relationship, and serious considerations of dissolution.

Another group which began studying couples' communication in the early 1970ies was Robert Weiss and his collaborators at University of Oregon. Largely influenced by Gerald Patterson's work regarding parent-child interaction, this group, including graduate students Gayla Margolin and Gary Birchler, is responsible for developing a variety of assessment methods such as the Marital Interaction Coding System and the Areas of Change Questionnaire. In summarizing several years of

research conducted on communication behavior, Weiss and Heyman (1990) report a robust connection between communication behavior and various measures of marital functioning.

The second major line of psychological research on marriage pertains to attributions. This research is largely influenced by Heider's (1958) formulation of attribution theory and the subsequent body of social psychological research regarding attributions and interpersonal relationships. Most notable in this area is the work of Frank Fincham and his graduate student Thomas Bradbury while they were both at University of Illinois at Urbana-Champaign in the late 1980ies (for a review of research on attributions in marriage, see Bradbury & Fincham, 1990). Their research and that of many others suggests that distressed couples have a tendency to make attributions in which partner negative behavior is viewed as having an internal locus of control and as being stable, global, intentional, selfish, and deserving of blame. Bradbury, now at UCLA, is currently expanding this line of research in a longitudinal study using a sample of newlywed couples (e.g., Bradbury, Cohan, & Karney, 1998).

The third major line of psychological research regarding marriage includes outcome research for clinical interventions. Neil Jacobson, typically regarded as the key pioneer in this area, began investigating the effectiveness of Behavioral Marital Therapy as a graduate student at University of North Carolina (e.g., Jacobson, 1977) and then later developed an extensive program of outcome research at University of Washington. Other contributions in this area include Donald Baucom's investigation of Cognitive Therapy (e.g., Baucom, Sayers, & Sher, 1990), Howard Markman's investigation of prophylactic programs for engaged couples (e.g., Markman, et al., 1993), Susan Johnson and Leslie

Greenberg's investigation of Emotionally Focused Couples Therapy (e.g., Johnson &

Greenberg, 1985) and Snyder and Wills' investigation of insight oriented therapy (e.g.,

Snyder & Wills, 1989). A general finding of this research is that all treatments tend to

produce significant improvement, but also tend to leave a large proportion of couples

somewhat distressed following treatment (Hahlweg & Markman, 1988; Jacobson &

Addis, 1993; Jacobson, et. al., 1984).

Notably, the first two lines of research, regarding communication behavior and

attributions, both study naturally occurring marital processes that correlate with various

measures of marital quality. In contrast, the third line of research, investigating

intervention outcomes, explores methods for altering unwanted processes in hopes of

improving marital quality. Of course, it is likely that research in the first two areas will

provide useful information for research in the third area. That is, clinicians may be better

equipped to change unsatisfying and dissolving relationships if more is known about the

processes that lead to marital satisfaction and stability in the first place.

Along this line, Gottman, Coan, and Swanson (1998) go so far as to suggest that

interventions for couples have been hampered to the extent that they have failed to build

on research on marital process. They state:

> What has happened in the field of marital therapy is that a psychotherapy of
> marriage has been constructed by extending methods of psychotherapy to the
> design of marital interventions, instead of building a marital therapy from the way
> people normally go about the process of staying happily married. (p. 5)

These authors would suggest that the key to developing effective intervention programs

for couples is to begin by conducting research on marital process – to clarify which

processes are naturally associated with relationship distress and which processes are

naturally associated with relationship stability. This line of reasoning highlights the

importance of research on both communication behavior and attributions, for both areas are highly salient to marital process.

Research on marital process has recently culminated in two important models suggesting possible paths by which variables such as communication behavior and attributions might influence marital outcomes. Specifically, Gottman (1993, 1994) has proposed a model in which the balance between communication behavior, cognition, and physiological responses predict a cascade toward divorce. I will refer to Gottman's model as the "cascade model." In addition, Bradbury and Fincham (1990) have proposed a path framework for understanding the connection between observable behavior, attributions, and relationship satisfaction. I will refer to the Bradbury and Fincham model as the "attribution model." These two models make an important contribution to marital process research. They both incorporate a large body of previous research and provide a framework for understanding this research. More importantly, they also both serve to identify and clarify important questions to be addressed in future research. I discuss these two models in more detail shortly. But first, I consider an additional, often neglected, issue, the importance of which is becoming increasingly evident in marital research. Moreover, this issue bears on the ways in which models of marital process are to be understood.

<u>Levels of Analysis</u>

There is one particular research issue that is ripe for introduction into marital research and that could add an important new dimension to models of marital process. Namely, it could be quite fruitful to take into account different levels of analysis. Along this line, Karney and Bradbury (1995) suggest that a key criterion for evaluating theories

of marital process is the extent to which theories "provide links between different levels of analysis" (p. 4). Traditionally, marital researchers have not paid close attention to whether variables are being assessed at the micro-level (e.g., the extent of defensiveness in a five-second speaking turn) or at the macro-level (e.g., a person's overall feelings of satisfaction in the relationship). However, the key process variables that influence a particular interaction for a particular couple might include both proximal (or micro-level) factors pertaining to the immediate context and distal (or macro-level) factors pertaining to habitual patterns in behavior developed over the entire relationship history.

Research issues relevant to levels of analysis in couples' interactions recently have been broached in a study by Carels and Baucom (1999). In this study, the authors sought to determine the extent to which a person's immediate perceptions of his or her partner are influenced by both proximal factors such as the partner's immediate behavior and distal factors such as one's overall sentiment in the relationship. These same issues can be extended to both the cascade model and the attribution model. As is described in more detail below, both models reflect underlying assumptions that some variables function at a proximal level and some function at a distal level. What researchers have been unable to do, however, is to move from simply assuming a variable functions at a particular level to testing whether a variable actually functions at the level where it is assumed to function. For example, in the Carels and Baucom (1999) study, observer ratings of partner communication behavior were presumed to represent a proximal variable. However, it is questionable whether their assessment of partner behavior was indeed tapping primarily variance that was unique to each proximal context or if it was really tapping the partner's habitual, trait-like ways of interacting over the entire course

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of the relationship. Thus, their investigation could not clarify whether it was the partner's immediately preceding behavior or the partner's long term habitual behavior that had the greatest influence on the participants in their study. Notably, tools for answering such questions are available.

The *Journal of Family Psychology* recently published a special section on "Methodological Advances in Family Psychology" which included an article by Raudenbush, Brennan, and Barnett (1995) proposing that Hierarchial Linear Modeling (HLM) could be useful for research on marriage. One way in which HLM could be useful is that it would allow researchers to specifically test relationships between variables across different levels (Bryk & Raudenbush, 1992). That is, it would allow a researcher to directly investigate the types of multilevel relationships implicitly being assumed in contemporary models of marital process.

Along this line, it is useful to review both the cascade model and the attribution model vis-à-vis levels of analysis. To aid this review, four levels of analysis need to be explicitly defined. The first level could be called the level of the speaking turn. This includes micro-level variables involving variance <u>between</u> individual speaking turns <u>within</u> conversations. For example, the amount of criticism in a single spoken sentence would be a speaking turn level variable. The second level could be called the level of relationship events. Notably, the most common relationship events studied by marital researchers are conversations; thus, the second level could also be called the level of the conversation. The level of relationship events, or conversations, includes primarily variance <u>between</u> conversations <u>within</u> people. For example, the amount of criticism voiced over an entire conversation would be an event level variable. Notably, event level

variables can also include any distinct relationship event that can be described as happening on a particular day at a particular time and that consists of a sequence of speaking turns or a sequence of behaviors. The third level could be called the level of the person and it includes variables pertaining to an individual person vis-à-vis his or her relationship. For example, the extent to which a person is typically critical when talking to his or her partner would be a person level variable. Person level variables would also include the types of thoughts or feelings a person typically has about his or her partner or about the relationship, and a person's overall appraisal of the relationship as a whole. The fourth level of analysis is the level of the couple, and this level includes any variable pertaining the couple as a whole. For example, the extent to which a couple tends to engage in reciprocal critical verbal exchanges would be a couple level variable. The following discussion will use these four levels of analysis to provide a framework for comparing and contrasting the cascade model with the attribution model.

Gottman's Cascade Model

Gottman (1993, 1994) has integrated the body of research produced by his lab over the last 20 years into a complex model of marital processes. This model is largely derived from his work on communication behavior. Thus, to best understand his model, it is necessary to understand Gottman's approach to investigating communication behavior. In Gottman's research, couples are asked to have a 15 minute conversation discussing an unresolved issue in their relationship. These conversations are videotaped and then transcribed. Trained coders rate every speaking turn in the conversation using a set of positive codes (e.g., assent, humor, positive facial expression) and a set of negative

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codes (e.g., criticize, defensive, put down).[3] Thus, the initial coding is at the level of

individual speaking turns.

These codes are then transformed into point graphs where the x-axis represents

the progression of speaking turns over time and the y-axis represents the cumulative sum

of all the previous positive codes minus all the previous negative codes. Sample point

graphs are depicted in Figure 1.1.
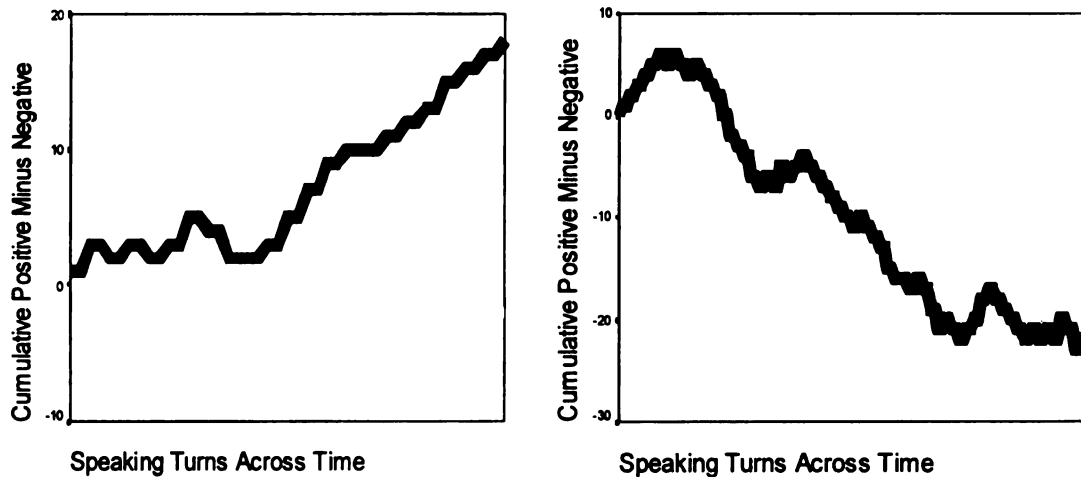
Figure 1.1

Sample Point Graphs From Two Conversations

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[3] Notably, Gottman's most recent coding system involves codes which are made in real time. For example, rather than coding a husband as using criticism on a particular speaking turn, coders identify the moment at which the husband's criticism began and the moment at which it ended. Thus, his new codes are not actually assigned to individual speaking turns. For the purpose of the present discussion, however, the concepts remain the same.

In the graph on the left, the person began the conversation using only slightly more positive than negative behavior, but then became consistently positive in the second half of the conversation. In the graph on the right, the person started off using a high concentration of positive behavior, but than quickly turned to using primarily negative behavior for the remainder of the conversation.

As a means for summarizing the information contained in these point graphs, Gottman computes the slope for the point graph for each conversation. Notably, this procedure actually produces a slope that is mathematically equivalent with mean score across all speaking turns for a given conversation. If a person has more positive than negative behaviors, the slope will be positive, and if a person has more negative than positive behaviors, the slope will be negative. For example, in the point graphs depicted in Figure 2, the graph on the right has a negative slope and the graph on the left has a positive slope. It is important to note that, although the initial coding for the point graphs involves a speaking turn level analysis, the slope represents a summary of an entire conversation, and as such, the slope is an event level variable.

Although the slope of a conversation is <u>assessed</u> as an event level summary of a conversation, the slope can be <u>presumed</u> to represent a construct that operates at other, higher levels as well. For example, Gottman suggests that in stable marriages, both partners typically have positive slopes with ratios of at least five positive behaviors for every one negative behavior. He also uses these graphs to classify couples into two groups which he calls regulated couples (i.e., those with positive slopes for both partners) and non-regulated couples (i.e., those with at least one negative slope). Notably, this nosology is based on an underlying assumption that the behavior observed in one

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conversation is representative of the types of communication behavior a person typically displays across most conversations with his or her partner. To assume that an individual slope represents something stable about the person is to conceptualize this variable as a person level variable. Or, to use the point graphs to classify couples into regulated and non-regulated groups is to conceptualize this variable as a couple level variable. Thus, although point graph slopes are technically event level variables, they could be conceptualized as representing an event level variable, a person level variable, or a couple level variable.

Point graph slopes play a key role in Gottman's cascade model of marital process. He illustrates the entire cascade model with a diagram (e.g., Gottman, 1994, p. 370), reproduced below as Figure 1.2.

The starting point for Gottman's theory is "P-space." This variable involves the extent to which the aggregate sum of communication behaviors across an entire interaction is either positive or negative. In other words, P-space is the slope for a single conversation. In Gottman's (1994) words, P-space is "the cumulative (or integrated) sum over time of positive minus negative behaviors. . . the P variables measure the total flow and accumulation of overall negativity over time, as the interaction proceeds" (1994, p. 333).

It is important to note that, in terms of levels of analysis, Gottman's description of P-space appears to be different from his conceptualization of the regulated/non-regulated classification. The manner in which he defines P-space would seem to suggest that this

P-space
(flow)

pos
minus
neg

t

Q-space
(Perceptions)

+1

t

-1
-1

The Core Triad
of Balance

Physiological
Responses

DPA and
Reactivity

Soothing

Increased stability and
globality of thoughts

Flooding and
Negative
Attributions

Distance and
Isolation
Cascade

Recasting the
Entire History
of the
Marriage

Divorce
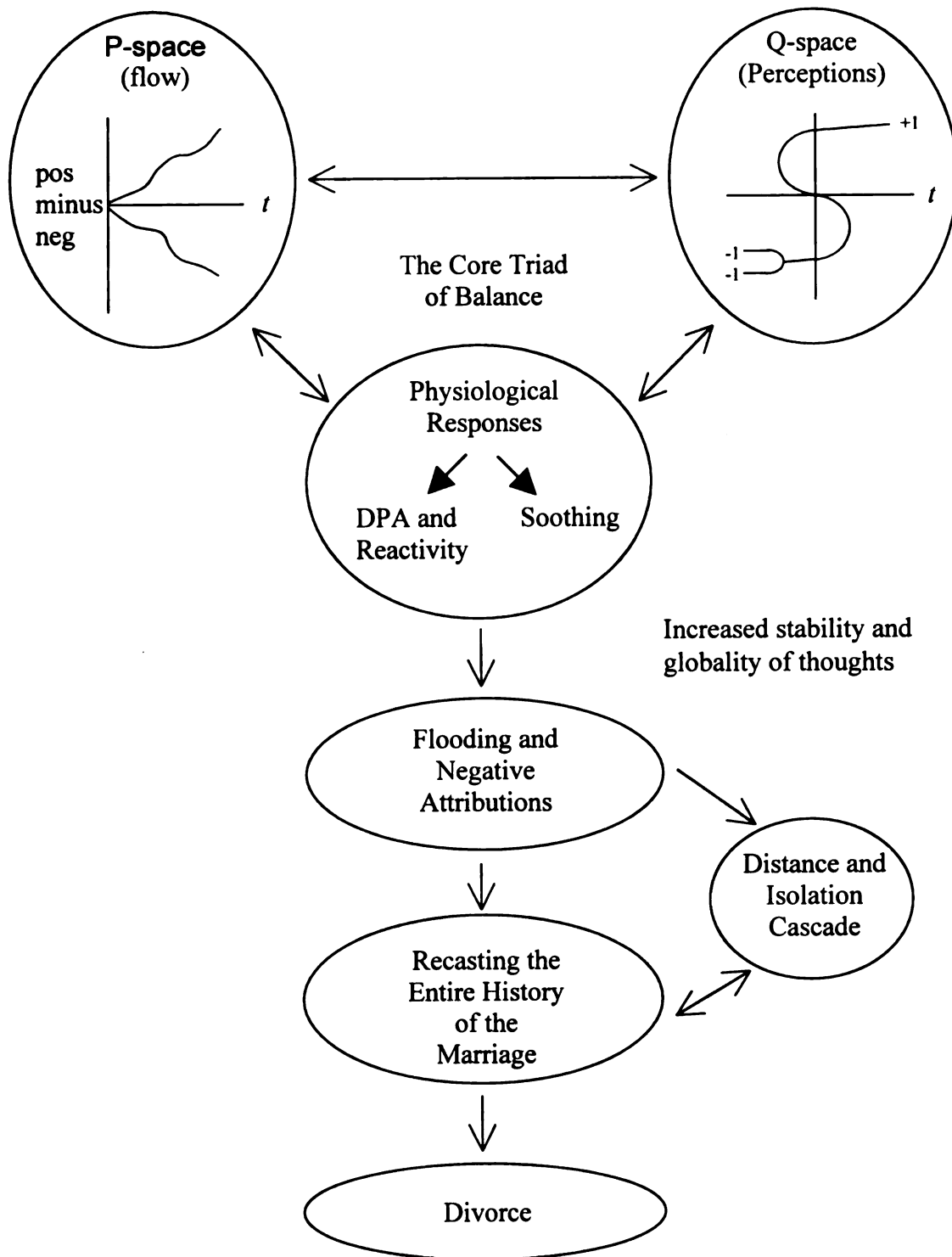
Figure 1.2

Gottman's Cascade Model

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variable is best understood as a conversation level variable and not as a person level variable. For example, when Gottman describes P-space he consistently uses words referring to "the interaction" in the singular. He describes P-space space as being the flow, or valence, of a particular, event level interaction and not necessarily a "bank account" of behaviors accumulated over the course of an entire relationship. More importantly, Gottman describes P-space as a variable that influences other variables that also function at the level of the conversation. That is, changes in P-space over the course of a single conversation are presumed to result in changes in two other variables also at the level of the conversation. These two other variables include a construct he calls "Q-space" and also physiological arousal. Below I outline Gottman's understanding of these two variables which he presumes to operate in conjunction with P-space at the level of the conversation.

Gottman's Q-space construct is the second variable in the cascade model. This variable represents a person's moment to moment cognitive and affective appraisal of the relationship. Gottman defines Q-space as being essentially dichotomous: either the person has "the perception of well-being and safety in the relationship (feeling loved and respected, in which case one can think of $Q = +1$) or the opposite perception" (p. 333). Notably, Gottman further subdivides the negative side of Q-space (i.e., $Q = -1$) into two varieties of perceived "non-well-being," the first primarily involving fear and the second primarily involving anger. In formulating his notion of Q-space, Gottman draws from catastrophe theory. The idea is that when gradual changes over time in P-space cross a certain threshold, there will be a sudden, or catastrophic, flip in Q-space. In other words,

Q-space is largely influenced by the ratio of positive to negative communication behavior observed within a given interaction.

Q-space is similar to P-space in that it represents an event level summary of an entire conversation which can be broken down into speaking turn level components. For example, Gottman's descriptions of Q-space suggest that the flips occur at the speaking turn level. A person could be in positive Q-space during one speaking turn, and then suddenly flip to negative Q-space on the subsequent turn. This is not to say, however, that Q-space functions as a speaking turn level variable in his model. Like P-space, Q-space can be broken down into speaking turn units, yet it plays a more important role at the level of the event. Specifically, what seems to be most important in Gottman's model is the cumulative amount of time a person spends in negative Q-space over the duration of an interaction. Along this line, conversations could be described in terms of whether a person flipped from positive to negative Q-space, and if so, the extent to which negative Q-space became a stable state. Like P-space, Q-space is best understood as a conversation level variable.

The third variable in Gottman's model is physiological arousal. In Gottman's model, physiological arousal joins with P-space and Q-space to comprise what he terms a "core triad of balance." All three variables in this core triad of balance operate at the event level. According to Gottman, a negative flow (P-space) and negative perceptions (Q-space) are likely to lead to diffuse physiological arousal (DPA) and physiological reactivity (e.g., activation of the sympathetic nervous system). However, when a person is able to sooth himself or herself, he or she will attenuate the impact of negative P-space and Q-space. Taken together, P-space, Q-space, and physiological arousal all interact

with each other at the level of the conversation. When these three components are functioning well, the conversation is described as being regulated. However, if any one component begins to dysfunction, it will influence the other two components and thereby the entire conversation can become unregulated.

In the cascade model, the core triad of balance, operating at the level of the event, predicts a set of more global cognitive variables conceptualized at the level of the person. These cognitive variables include the degree to which a person generally feels flooded by partner negative emotion, the degree to which a person typically makes negative attributions, the degree to which a person generally feels isolated and lonely in the relationship, and the degree to which a person remembers the history of the relationship in a negative framework. Unlike the core triad variables, which can change with the context of a single conversation, these variables are conceptualized as being more stable and built on a couple's entire history of relationship interaction. If the core triad of balance, at the level of specific events, remains unregulated across enough conversations, then this will set in motion a cascade toward divorce at the level of the person, which involves a person's characteristic appraisals of the relationship.

Overall, Gottman's model provides a good example of the extent to which levels of analysis are salient in theories of marital process. In discussing his model, it has also become clear that there is a need to provide further clarification regarding the function of different variables across different levels of analysis. Most notable is the fact that, in Gottman's work, communication behavior is initially assessed at the level of individual speaking turns, then transformed to a event level variable, which in turn, functions either as an event level variable when conceptualized as P-space in the cascade model or as a

person (or couple) level variable when used to classify couples into regulated and non-regulated categories. This raises questions about the extent to which communication behavior is best conceptualized as a stable trait, or as a behavior that fluctuates from one conversation to the next, or even as a behavior that changes from one speaking turn to the next. It is also unclear whether communication behavior interacts with other variables primarily at the event level, as proposed by the cascade model, or across several levels, a possibility which has actually been suggested in some of Gottman's other work that will be discussed later.

In addition to highlighting the need to further clarify the function of communication behavior at different levels of analysis, Gottman's model could also potentially play a special role by providing a theoretical link between the two major areas of research on marital process, communication, and attributions. One potentially intriguing aspect of the Q-space variable in Gottman's theory is that it involves a cognitive and affective appraisal of one's current interaction with a partner. As such, there is good reason to speculate about a possible close connection between Q-space and attributions. It would seem likely that if a person suddenly changes from good feelings associated with a perception of well-being to feelings of anger or fear, that there may be some key attributional processes underlying the shift in appraisal. That is, a perception that all is not well, and the associated feelings of anger or fear, may be the result of viewing the partner's negative behavior as stable, global, intentional, selfish, or blameworthy.

Notably, to suggest a possible link between Q-space and attributions is to stray from Gottman's original intention for this construct. Although Gottman would readily

agree that there is a close connection between Q-space and attributions, his model does not describe attributions as actually being components of Q-space or even serving as a mechanism potentially causing changes in Q-space. Whereas Q-space is a event level variable, Gottman conceptualizes attributions as a person level variable. In this way, attributions are not so much viewed as an appraisal being made at a specific moment in the context of a specific conversation, as they are viewed as a person's characteristic ways of appraising partner behavior across all relationship interactions. For example, he states:

> Attributions and general thought patterns about negative behaviors may, thus, be theoretically useful in providing a link between the immediate patterns of activity seen in behavioral interaction and physiological response and more long-lasting and global patterns that span longer time periods. (p. 350)

In other words, if a person begins to spend increasing amounts of time in negative Q-space, he or she may begin to develop trait-like thought processes involving negative attributions. In this manner, Q-space at the level of the event leads to attributions at the level of the person.

This conceptualization of attributions at the person level is largely consistent with current research on attributions in marriage. For example, the most popular questionnaires for assessing attributions asks respondents to report on the types of attributions they usually or typically make across a broad range of partner behavior and not on attributions pertaining to specific conversations or actual events. In other words, attributions are typically assessed at the level of the person and not at the level of specific conversations. The issue of whether attributions are best conceptualized at the level of the conversation or the level of the person, however, has not been addressed empirically. On one hand, if it turns out that attributions can reasonably be measured at the level of

the conversation, then they might also prove to be an important component of Q-space. On the other hand, it may be that attributions are indeed best conceptualized at the level of the person, as representing an individual's characteristic way of interpreting partner behavior. Of course, it is also possible that attributions are important at both levels.

In summary, Gottman has proposed a comprehensive theory of marital process that involves a path that begins with communication behavior assessed at the level of the conversation and leads to more global cognitive variables, assessed at the level of the person. In his model, Gottman places attributions at the level of the person, but there is reason to speculate that attributions might also be relevant at the level of the event. In addition, his model raises questions regarding the function of communication behavior at different levels of analysis.

Bradbury and Fincham's Attribution Model

The model proposed by Bradbury and Fincham is more narrowly focused than Gottman's model in that they limit it to describing relationships between behavior, attributions, and satisfaction. Like Gottman, they use a path diagram to illustrate their model and this diagram is reproduced below as Figure 1.3.

The majority of the attribution model is conceptualized as taking place at the level of the relationship event; however, the final stage of the model is conceptualized at the level of the person. Thus, this model is like Gottman's model in that it represents a progression from event level variables to more global person level variables. Moreover, the starting point in the attribution model bears some similarity to the starting point in
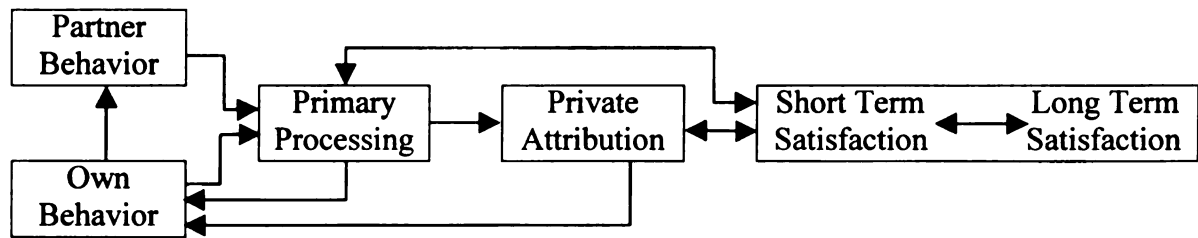
Figure 1.3

Bradbury and Fincham's Attribution Model

Gottman's model. For Bradbury and Fincham, the starting point is a combination of own

behavior and partner behavior. These variables would necessarily include

communication behavior, which, of course, is the starting point in Gottman's model.

Notably, Bradbury and Fincham appear to have something broader in mind here as they

leave these constructs open to include any form of observable behavior and not simply

communication. Thus, while Gottman's model is more detailed and specific in its focus

on communication behavior, there is a striking similarity between the two models in that

they both use observable interactions (including or limited to communication),

conceptualized at the level of the relationship event, as starting points.

The second step in the attribution model is primary processing. This term refers

to a preliminary information processing stage that includes attending to an event and

extracting information. According to their model, some relationship events will be

noticed and processed and others will be unnoticed. For example, in light of Gottman's

theory, it seems possible that people may most readily attend to positive behaviors when they are in positive Q-space and negative behaviors when in negative Q-space. Again, there is a core similarity between the two models. That is, they both suggest a close connection between observable interaction and cognitive processing and they both conceptualize these variables at the level of the relationship event.

Bradbury and Fincham's conceptualization of attributions, the third step in their model, is somewhat different from Gottman's. Although both models place attributions as a link between event level variables and more global person level variables, the attribution model places attributions on the event level side of the fence, whereas the cascade model places attributions on the person level side of the fence. Although Bradbury and Fincham conceptualize attributions at the level of the event in their model, they are quick to point out that the issue has not been addressed empirically. Along this line, they highlight the fact that researchers have commonly made untested assumptions about (1) the extent to which attributions might relate to behavior at the level of the event, and (2) the extent to which attributions might represent a stable personal style that is best conceptualized at the level of the person. To remedy this, they suggest that researchers begin by testing the latter assumption. Specifically, they propose a research program that would first make multiple assessments of attributions in response to a variety of different real-life, partner behaviors and then test for the presence of attributional style across these different contexts. They state:

> A systematic relation between various partner behaviors and attributions for those behaviors would suggest the absence of an attributional style, whereas relative independence between partner behaviors and subsequent attributions (which themselves demonstrate little variance) should support the presence of an attributional style. (p. 25)

In other words, attributional style would be indicated if the covariance observed between attributions and behavior is primarily limited to the level of the person and if there is little or no covariance at the level of the relationship event. Attributional style occurs when a person makes the same types of attributions irrespective of the context of the specific event. In contrast, a strong relationship between behavior and attributions at the level of specific events within persons would suggest the absence of attributional style. In this case, the attribution could be described more as the product of a particular context than as a consistent personal style. As is discussed in more detail below, Hierarchical Linear Modeling could be used to specifically address this issue.

Attributions also play a unique role in the Bradbury and Fincham model in that they mediate a relationship between event level behaviors and event level, short term, marital satisfaction. For example, they suggest that it is a "likely possibility that attributions will have a more consistent impact on transient rather than stable feelings about the marriage" (p. 24). This is the exact opposite of the way attributions are conceptualized in the cascade model. Indeed, for attributions to mediate a relationship between two event level variables, attributions would also need to be an event level variable as well. Thus, where Gottman describes person level attributions leading to other forms of person level cognition (namely the cascade toward divorce), Bradbury and Fincham describe event level attributions leading to other forms of event level cognition (namely, short term satisfaction). In summary, a key difference between the cascade model and the attribution model is whether attributions operate primarily at the level of the person or the level of the event.

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The final variable in Bradbury and Fincham's model is long term marital satisfaction. At this point, the attribution model becomes more similar to the cascade model again. Both long term satisfaction in the attribution model and the cascade toward divorce in the cascade model are person level cognitive variables. That is, both models suggest that communication behavior and attributions lead to global forms of cognition that pertain to the overall health of the relationship.

The preceding discussion of the cascade model and the attribution model has focused on the importance of both communication behavior and attributions in these models and has highlighted the extent to which these models broach unresolved issues pertaining to levels of analysis. Specifically, the cascade model and the attribution model differ in whether attributions are presumed to operate at the level of the event or the level of the person. Thus, it would be useful to clarify the relationship between attributions and communication behavior across these two levels of analysis. This issue served as the starting point for the present project. As previously mentioned, this issue could be addressed by using Hierarchical Linear Modeling (HLM). Below I describe the ways in which this form of analysis could be used in research on marital process.

Introduction to Hierarchical Linear Modeling

Hierarchical Linear Modeling enables researchers to analyze relationships between variables across multiple levels of analysis. For example, assume that we analyze both communication behavior and attributions using (for the sake of simplicity) only two levels of analysis: the level of the conversation and the level of the person. To do this, we would need to analyze both communication behavior and attributions on

multiple conversations for each person in a sample. In this situation, the conversation

level variables would be single scores pertaining to single conversations, and the person

level variables would be composite scores representing a person's average score across

all his or her conversations. An analysis of these data could reveal several different

possible outcomes. To illustrate these outcomes, it will be useful to consider three

hypothetical people in a study, each of whom completed four conversations. A possible

set of standardized scores regarding quality of communication behavior is depicted in

Figure 1.4.
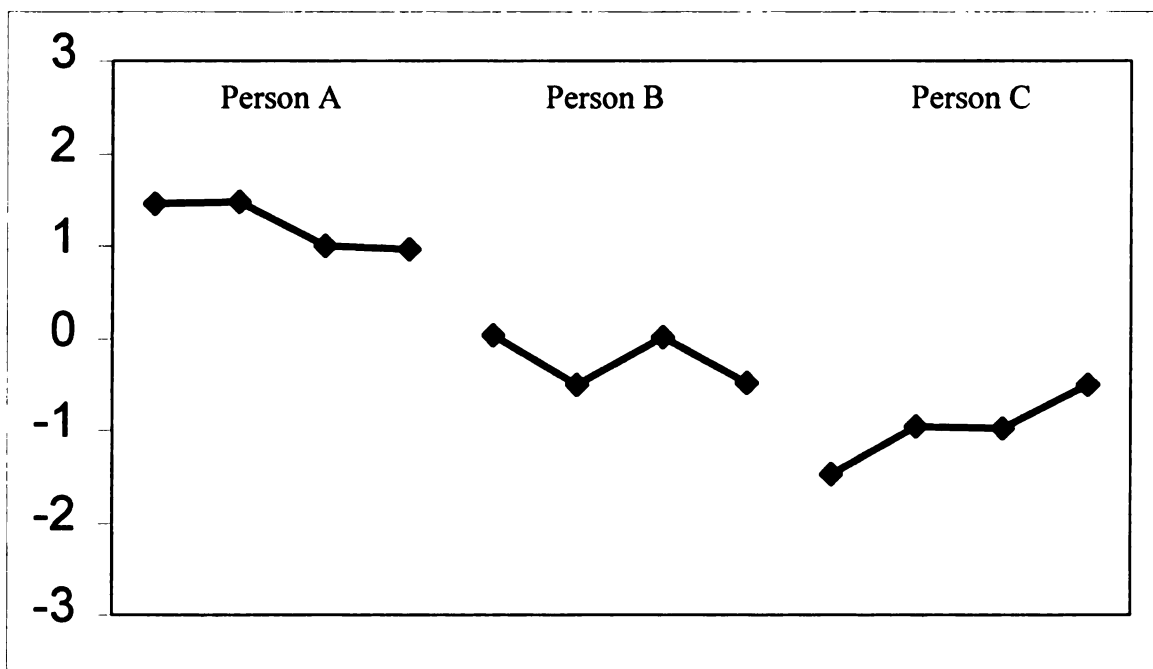
Figure 1.4

Communication in Four Conversations

In Figure 1.4, each person shows a degree of stability across conversations. Person A tends to use good quality communication behavior, Person B tends to use moderate quality communication behavior, and Person C tends to use poor quality communication behavior. Although there is a high degree of within-person stability, there remains a significant amount of variance within each person as well. No one person used the exact same quality of communication across all four conversations. Thus, there is variance both at the level of the person and at the level of the conversation.

Now, assume we want to use these communication behavior scores to predict post-conversation attributions. Below I consider four different types of results we might encounter. The first possibility is that there will simply be no effect at the level of the conversation or at the level of the person. This outcome is depicted in Figure 1.5.

In Figure 1.5, the attribution scores (dotted lines) have been superimposed on top of the communication scores (solid lines). Like the communication scores, there is a degree of stability across persons in attribution scores, with Person A and Person C generally scoring higher than Person B. Notably, in this example, there is no relationship between communication and attributions at either level of analysis. At the level of the person, both Person A and Person C have high mean attribution scores, but they have very different mean communication scores. At the level of the conversation, there is no correspondence between the shapes of the lines – a person's best communication score does not necessarily correspond with his or her best or worst attribution score. In an actual HLM analysis of these data, the coefficient for the person level relationship is -.03 and the coefficient for the conversation level relationship is -.02.
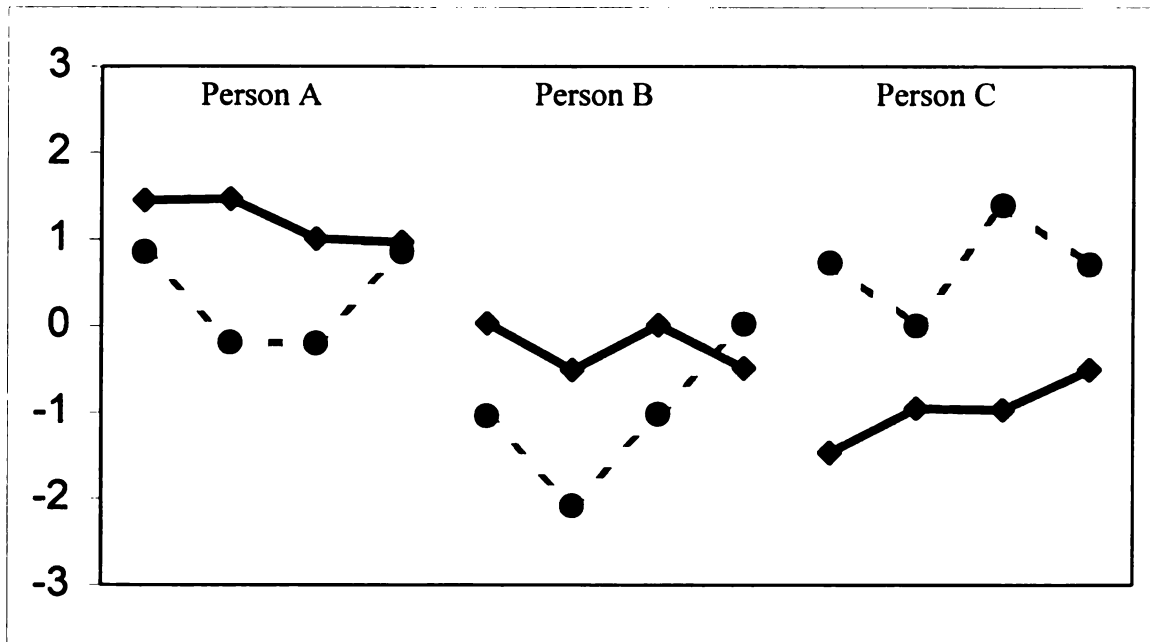
Figure 1.5.

Communication and Attributions in Four Conversations: No Effect

In contrast to the totally random relationship between communication and attributions depicted in Figure 1.5, another possibility is that there is a perfect linear relationship between these two variables. This possibility is depicted in Figure 1.6.

In Figure 1.6, the attribution scores (dotted lines) have again been superimposed on top of the communication scores (solid lines). In this example, there is a perfect positive relationship between communication and attributions at both levels of analysis. At the level of the person, the person with the highest mean communication score also

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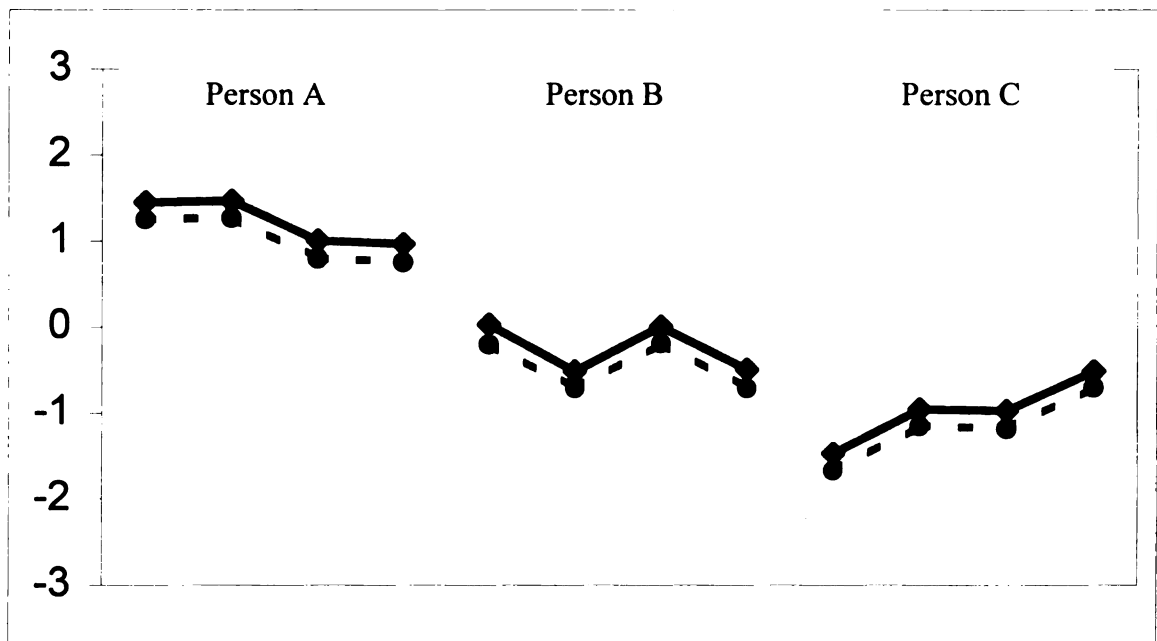
Figure 1.6.

Communication and Attributions in Four Conversations: Linear Relationship at Both Levels

has the highest mean attribution score. At the level of the conversation, there is a perfect correspondence between the shapes of the lines – a person's best communication score corresponds with his or her best attribution score. In an actual HLM analysis of these data, the coefficient for the person level relationship is 1.00 and the coefficient for the conversation level relationship is 1.01.[4]

In both the previous examples, the results were fairly straightforward. The results, however, could be more complex in that there could be an effect at one level but

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not at the other level. For example, there could be an effect at the level of the

conversation but not at the level of the person. This possibility is depicted in Figure 1.7.

In Figure 1.7, the attribution scores (dotted lines) have again been superimposed

on top of the communication scores (solid lines). In this example, there is no relationship

between communication and attributions at the level of the person, yet there is a strong

positive relationship at the level of the conversation. At the level of the person, both

Person A and Person C have high mean attribution scores, but they have very different
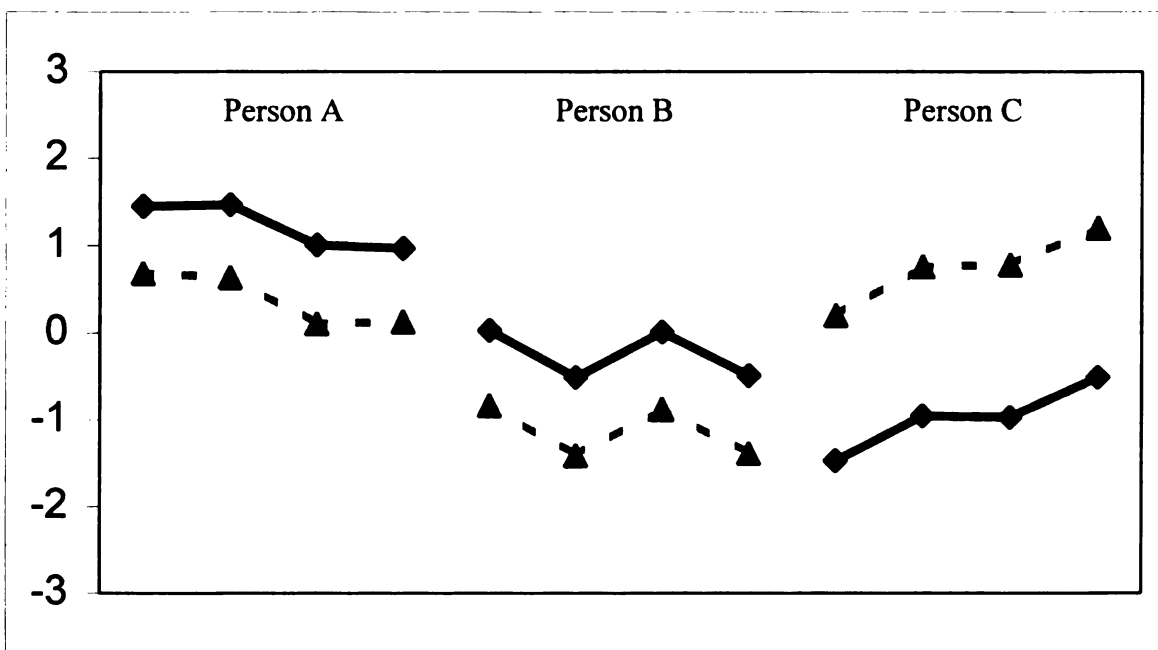
Figure 1.7.

Communication and Attributions in Four Conversations: Conversation Level
Effect Only

mean communication scores. At the level of the conversation, however, there is a perfect correspondence between the shapes of the lines – a person's best communication score corresponds with his or her best attribution score. In an actual HLM analysis of these data, the coefficient for the person level relationship is .01 and the coefficient for the conversation level relationship is 1.69.[4]

Notably, it would be somewhat unusual to have an effect only at the level of the conversation and not at the level of the person. In contrast, it would be quite common for the opposite to occur, to have an effect at the level of the person but not at the level of the conversation. This would be called a compositional effect. Essentially, a compositional effect is indicated when the relationship between two variables at one level of analysis is significantly stronger than the relationship between the same two variables when observed at a lower level of analysis. This happens quite frequently, for example, in research on schools (Bryk & Raudenbush, 1998). Schools with a high mean student SES also tend to have high mean student scores on nationally standardized achievement tests. However, within individual schools, the relationship between the SES of a single student and the academic achievement of that same student is generally quite weak. A student's score is determined more by the overall SES composition of his or her school than by his or her own personal SES. Figure 1.8 depicts a compositional effect for the example involving attributions and communication.

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[4] Notably, although the scores in this example are z-scores, they were not standardized at the level of the conversation. Thus, it is possible to get coefficients greater than one.
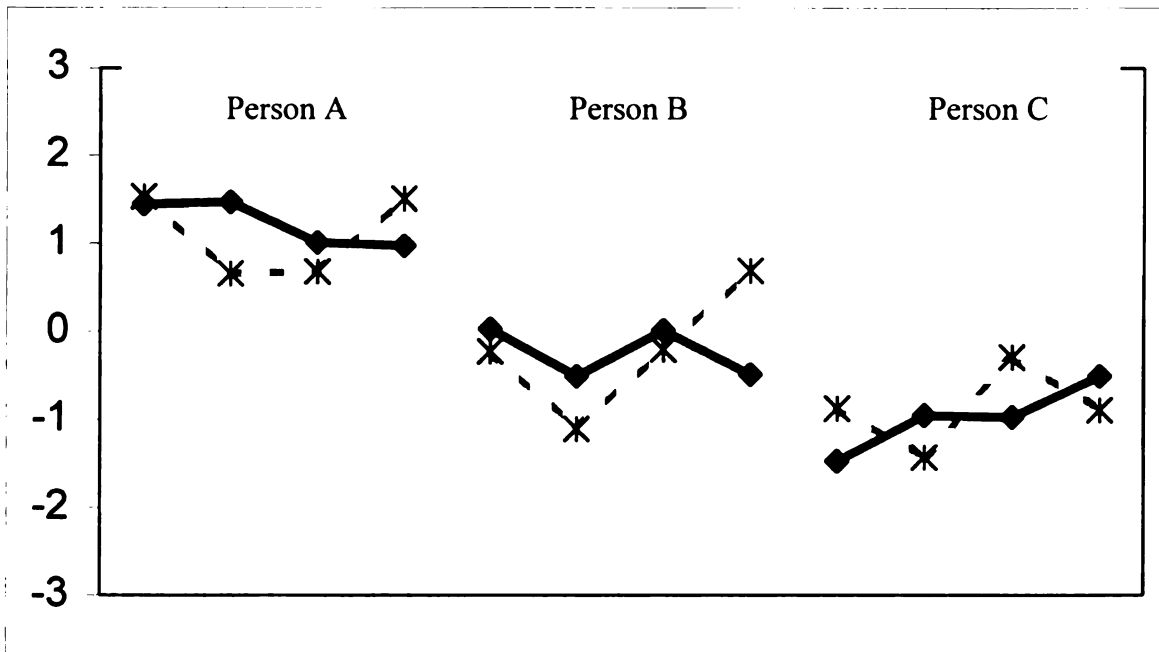
Figure 1.8.

Communication and Attributions in Four Conversations: Compositional Effect

In Figure 1.8, the attribution scores (dotted lines) have again been superimposed on top of the communication scores (solid lines). In this example, there is a perfect positive relationship between communication and attributions at the level of the person, yet there no relationship at the level of the conversation. At the level of the person, the person with the highest mean communication score also has the highest mean attribution score. At the level of the conversation, however, there is no correspondence between the shapes of the lines – a person's best communication score does not necessarily correspond with his or her best or worst attribution score. In an actual HLM analysis of

these data, the coefficient for the person level relationship is .89 and the coefficient for the conversation level relationship is -.03.

Notably, to be considered a compositional effect, the conversation level relationship simply needs to be smaller than the person level effect. That is, the conversation level effect does not necessarily need to be zero or even close to zero. In the case of attributions and communication behavior, a compositional effect would simply indicate that a person's attribution score is determined more by the composition, or stable traits, of the person as a whole than by the particular context of the specific situation in which the attribution is being made.

Issues to be Addressed

Having reviewed some of the basic concepts of HLM, we can consider the ways in which it might prove particularly useful for addressing questions that marital researchers have been attempting to raise yet unable to address. As previously discussed, a key question has to do with whether the relationship between communication behavior and attributions is best understood as a conversation level relationship or a person level relationship (or both). In addition to this issue, there is another issue that is important to raise, although it involves a variable that has received only minimal attention in the marital literature. Specifically, this second issue pertains to the relationship between cognitive expectancies and communication behavior across multiple levels of analysis. These two issues will be discussed below.

Attributions and Communication

In discussing the cascade model and the attribution model, I described how it remains uncertain whether the relationship between attributions and communication functions at the level of the conversation, as proposed by the attribution model, or at the level of the person, as proposed by the cascade model. There is already a body of research suggesting a correlation between communication behavior and attributions (Bradbury, Beach, Fincham, & Nelson, 1996; Bradbury & Fincham, 1992; Miller & Bradbury, 1995). However, whether this is a person level relationship, a conversation level relationship, or both has yet to be empirically investigated. Notably, researchers have been raising this question. For example, Bradbury and Fincham (1992) conducted a study in which they expected pre-conversation attributions to influence subsequent behavior observed during a conversation. In other words, they were expecting a relationship between these variables at the level of the conversation.

To investigate this issue, Bradbury and Fincham (1992) asked couples to make attributions pertaining to an unresolved issue in their relationship and then to engage in a problem solving discussion about that issue. Even after controlling for marital satisfaction, they found correlations between attributions and communication behavior on a number of dimensions, and this was especially true for distressed wives. Notably, both attributions and communication behavior were assessed at the level of the conversation, and the covariate, marital satisfaction, was assessed at the level of the person. The fact that an association between two conversation level variables remained after controlling for person level variance could be taken to indicate that there is indeed a conversation level relationship between these two variables. However, because attributions and

conversations were assessed only once in this study, it was not possible to directly test this possibility. That is, they were unable to determine whether fluctuations in a person's attributions across multiple occasions actually correspond with fluctuations in communication behavior across multiple occasions. As it stands, an alternative explanation to their findings is that the types of people who typically make negative attributions are also the types of people who typically use negative forms of communication behavior when interacting with their partners, and that this relationship holds true even after controlling for satisfaction. Thus, although there is evidence of a correlational relationship between attributions and communication behavior, research has yet to directly investigate whether this relationship exists at the level of the conversation, or at the level of the person, or both.

Cognitive Expectancies and Communication

A similar situation, where researchers are raising questions about levels of analysis that they are unable to address, exists in the case of research on cognitive expectancies. Baucom, Epstein, Sayers, and Sher (1989) have proposed that, in addition to attributions, expectations are an important form of cognition for understanding and predicting marital outcomes. Theoretically, the concept of cognitive expectancies has roots in Bandura's (1977) concept of self efficacy. In the early 1980ies, Doherty (1981a, 1981b) proposed that there are two types of cognitions that are most important in marriage: attributions regarding the causes of conflicts in a relationship and expectancies regarding whether the conflict is likely to be satisfactorily resolved. In contrast to attributions, which involve making explanations for a partner's past behavior, expectancies involve making predictions regarding a partner's future behavior. Research

has indicated that spouses' beliefs regarding their ability to resolve relationship conflicts is related to their satisfaction (Notarius & Vanzetti, 1983) and the types of attributions they make (Fincham & Bradbury, 1987).

The concept of expectancies is also quite similar to what some theorists have referred to as "faith" or "trust." For example, Rempel, Holmes, and Zanna (1985) defined faith as involving expectancies regarding unknown future events and developed a faith scale including items such as "I can rely on my partner to react in a positive way when I expose my weaknesses to him/her" (p. 102). In a longitudinal study using this scale, Kurdeck (1998) found faith, as assessed at year one, to be one of the strongest predictors of relationship satisfaction, assessed at year six. Kurdeck suggested that a lack in faith could decrease a person's motivation to engage in relationship maintenance behaviors. Along this line, expectancies regarding partner behavior in an upcoming conversation about an area of conflict in the relationship would be expected to influence a person's communication behavior in that actual conversation.

Although there is good theoretical rationale for predicting a relationship between cognitive expectancies and communication, it remains to be determined empirically whether such a relationship exists, and if so, whether it functions at the level of the conversation, at the level of the person, or both. As with attributions, researchers have been raising questions pertaining to the function of cognitive expectancies across multiple levels of analysis. For example, Vanzetti, Notarius, and NeeSmith (1992) conducted a study in which they assessed two types of expectancies: "specific expectancies" and "relational efficacy expectancies." In their study, specific expectancies were assessed immediately prior to a conversation about a selected

relationship issue by asking spouses to make predictions pertaining to the partner's relational behavior in the upcoming conversation. Relational efficacy was assessed by a questionnaire asking couples to indicate the degree to which they had confidence in their ability, as a couple, to resolve relationship issues. In other words, these researchers were intending to assess expectancies across two levels of analysis, the level of the person and the level of the conversation. Notably, they did find that these two types of expectancies were related to both relationship distress and attributions (unfortunately, communication behavior was not assessed in their study). However, as with the Bradbury and Fincham (1992) study on attributions, they did not directly test whether the variables in their study actually function at the levels where they were presumed to function. As it stands, both variables could have been measures of the same construct. Just because the specific expectancies variable was assessed in the context of specific conversations does not mean that it actually functions at this level.

Although previous research has been unable to directly address this issue, it certainly seems likely that a person's expectations, or predictions, prior to a conversation may be particularly salient to the course of that conversation. Communication behavior may be, in part, determined by the degree to which one expects the partner to come to understand one's own feelings and viewpoints on the issue being discussed. If, prior to a discussion on a certain topic, a person thinks, "my partner is not likely to come to understand my thoughts, feelings, desires, and motives on this issue," this person may enter the conversation primed to perceive misunderstanding and quick to use critical and defensive forms of communication.

Predicting Marital Outcomes

The major thrust of the present study includes two components: (1) clarifying the relationship between attributions and communication behavior across multiple levels of analysis, and (2) investigating the relationship between cognitive expectancies and communication behavior across multiple levels of analysis. The variables chosen for investigation – attributions, expectancies, and communication behavior – were selected, in part, because they were all believed to be important variables which play distinct roles in marital process. If this is true, then these variables would also be expected to predict important marital outcomes. Along this line, the present study addressed three further questions pertaining to these variables. To what degree do they predict divorce? To what degree do they predict change in satisfaction over time? And, to what degree do they predict concurrent marital functioning?

Notably both attributions and communication behavior have been found to predict concurrent marital functioning and change in satisfaction over time (Bradbury & Fincham, 1990; Karney & Bradbury, 1995) and communication behavior has been found to predict divorce (Gottman, 1994). However, the longitudinal findings have been based on only a few studies with small samples, and it would be beneficial if they can be replicated in other laboratories with other samples. In addition, there are several questions that have not been addressed in previous research. For example, previous research has not investigated whether attributions predict divorce and whether cognitive expectancies predict divorce or change in satisfaction over time.

In addition to predicting longitudinal outcomes, these variables would also be expected to correlate with various forms of concurrent marital functioning. As

previously discussed, for many of these variables, previous research has already demonstrated that this is indeed the case. However, in earlier work, I introduced some new measures of cognition in marriage pertaining to schemata of partner empathic responding to anger and accessibility of memories regarding incidents when one's partner is not understanding (Sanford, 1998). These types of cognitions would be expected to be especially salient in predicting communication behavior during a problem solving discussion. Presumably, if a person views his or her partner as a poor listener and has a large bank of memories of being misunderstood, then he or she would enter a problem solving discussion with pessimistic expectations that might readily lead to hostile or defensive forms of communication. Thus, it would be useful to both replicate the finding that communication, attributions, and expectancies are predictive of scores on standard measures of marital functioning and investigate the extent to which these variables are sufficiently robust to be predictive of other, newer, measures of marital functioning as well.

Ancillary Issues

Taken together, it was the goal of the present study to investigate attributions, expectancies, and communication behavior in marriage and to both examine multilevel relationships between these variables and examine the extent to which these variables predict important concurrent and longitudinal marital outcomes. In the process of following this research agenda, four additional, ancillary issues were broached as well. Each of these issues represents an important expansion on the framework that was used in the present study. Specifically, the present study broadened the framework for

investigating attributions, expectancies, and communication by: (1) expanding on the types of attributions that are traditionally considered, (2) expanding on the number of different levels of analysis that are considered, (3) expanding on the ways in which the common paradigm for assessing communication in marriage is best understood, and (4) expanding on the types of conversation contexts where communication behavior is believed to be important. Four ancillary issues pertaining to these four areas of expansion are discussed below.

Concurring Attributions

The first ancillary issue has to do with the types of attributions that are traditionally considered important. Although attributions have been found to be a robust predictor of many marital outcomes (Bradbury & Fincham, 1990), current attribution theory has been limited to the extent that attributions are viewed as a unidirectional phenomenon in which an observer makes an attribution for an actor's behavior without ever interacting with the actor and without ever having a conversation with the actor about the target incident. As I have argued previously (Sanford, 1999), in marriage, the initial attributions a person makes may not be as important as the attributions he or she makes after having an opportunity to talk with his or her partner about the target incident. Toward this end, I have suggested that the concept of attributional concurrence could be important. When both partners come to agree with each other and make the same attribution for the behavior of one partner or the other, then they would be making a concurring attribution. It would be expected that when couples use good communication skills in conversation about a target negative relationship incident, they are more likely to make concurring attributions following the conversation. Thus, concurring attributions

are a type of attribution that would be expected to be especially important in understanding marital process at the level of the conversation.

Speaking Turn Level of Analysis

The second ancillary issue has to do with the number of different levels of analysis that could be investigated. Although there is no limit to the number of different levels that could be identified, in discussing the Cascade model and the Attribution model, I specifically described four levels of analysis: levels pertaining to the couple, the person, the conversation, and the speaking turn. However, my subsequent discussion regarding relationships between communication, attributions, and expectancies has, up to this point, only focused on two of these levels: the level of the conversation and the level of the person. On one hand, to include all the possible levels of analysis in a single investigation would make the scope of the project overwhelmingly large. On the other hand, it may be valuable to at least consider other levels of analysis.

Toward this end, it is notable that John Gottman, James Murray, and their colleagues (e.g., Cook, et. al., 1995; Gottman, Swanson, & Murray, 1999) have conducted an extensive amount of work investigating communication at the level of the speaking turn. They have suggested that, at the level of the speaking turn, marital interaction can be best understood as a result of three key elements, which they term uninfluenced steady state, inertia, and influence. Inertia is a person's tendency to continue using the same type of behavior that was observed on an immediately preceding speaking turn. Influence is the extent to which a person's behavior on a particular speaking turn is influenced by the partner's behavior on an immediately preceding speaking turn. The uninfluenced steady state is a person's own base rate response on

speaking turns when the partner's influence is zero. As such, the uninfluenced steady state is believed to include any pre-existing dispositions partners bring to a conversation.

Notably, Gottman and Murray's work has focused on the construction of deterministic mathematical models – that is, their models do not include an allowance for error variance, and as such are not testable with inferential statistics. However, it would be possible to translate many (but not all) of their concepts into variables that could be tested using the HLM approach described earlier. This would both build on the work completed by Gottman and Murray, as well as allow the present study to expand on the number of different levels of analysis to be considered vis-à-vis marital process.

Issue Difficulty

The third ancillary issue has to do with the ways in which the common paradigm for assessing communication in marriage is best understood. As previously discussed, the common method for assessing communication in marriage is to invite couples to a special communication laboratory where they are instructed to select an unresolved issue in their relationship and then to engage in a brief conversation about that issue. A basic, implicit, assumption behind this procedure is that the communication behavior observed in the conversation is not highly dependent on the topic that is chosen. Couples are expected to show, pretty much, the same types of behavior regardless of which issue they choose to discuss. However, this assumption is questionable. Specifically, there are two qualities of the topic chosen for discussion that may be particularly salient: (1) the inherent difficulty or severity of the topic being broached, and (2) the extent to which a person thinks about a particular topic using a hostile affective frame. I will refer to these variables as issue difficulty and hostile frame, respectively.

Hostile frame is simply the degree to which a person frames an issue to be discussed using a hostile affective schema. That is, it would seem reasonable to expect that one of the key determinants of how a person talks about an issue during a conversation with his or her partner is the way in which the person thinks about the issue prior to the conversation. A person thinking about an issue from a hostile affective perspective would be expected to use more hostile forms of communication.

The other quality of the topic chosen for discussion that may be important is the overall issue difficulty. It may be that people simply show the worst communication behavior when discussing "hot" topics that any couple would have trouble addressing, and they show the best communication behavior when discussing issues that are easy to resolve. For example, resolving an extramarital affair may be more difficult than resolving where to squeeze the toothpaste. Notably, this issue is rarely broached in the traditional marital communication research paradigm where each married couple in the study selects an issue that is currently relevant in their relationship. While this is a useful method for insuring that couples discuss issues that are relevant to them, it results in couples discussing a variety of topics. Thus, the validity of this procedure is dependent upon an assumption that there is no systematic relationship across couples between the topics they choose for their discussions and communication behavior during those discussions. However, to my knowledge, this assumption has never been tested. Thus, although it is often assumed that issue difficulty does not influence communication behavior, there is no empirical evidence in support of this assumption, and there is good reason to suspect that issue difficulty may indeed influence communication behavior.

Providing Support in Conversations About Daily Hassles

The fourth ancillary issue pertains to the types of conversation contexts where communication behavior is believed to be important. Previous research on communication in marriage has focused almost exclusively on communication in conversations regarding areas of relationship conflict. However, it seems likely that communication is important for marriage in more contexts than simply resolving conflict. As has been suggested by Bradbury, Cohan, and Karney (1998), communication may also be important in conversations where couples provide personal support for each other. Notably, a few published studies have assessed communication in non-conflict conversations and these studies provide initial evidence that communication may be important across a broad range of relationship contexts (e.g., Cutrona & Suhr, 1994; Pasch & Bradbury, 1998). One type of support that may be particularly important is for partners to give to each other and to elicit from each other empathy and understanding regarding various daily hassles and life stressors. To the extent that couples fail in this task, their marriage may become unrewarding and they may become unmotivated to devote time and effort to relationship maintenance activities. Thus, communication skills in conversations about daily hassles would be expected to be predictive of concurrent marital functioning, change in satisfaction over time, and divorce.

Overview of Subsequent Chapters

In summary, the present project investigated two primary issues and four ancillary issues. The two primary issues were: (1) clarifying the relationship between attributions and communication across two levels analysis, and (2) exploring the relationship between

cognitive expectancies and communication across two levels of analysis. The four ancillary issues were: (1) investigating the salience of concurrent attributions, (2) examining communication behavior at the level of the speaking turn, (3) clarifying the importance of the discussion topics chosen by participants in the standard communication assessment paradigm, and (4) analyzing the importance of communication in supportive conversations about daily hassles.

Subsequent chapters include a complete description of the participants, the procedures, and the measures used in the present project. I then divide the results into four separate sections. Each section includes an introduction describing the specific issues to be addressed in that section, a description of the actual results obtained, and a discussion of those results. The first of these sections (Chapter 4) discusses the two primary issues being addressed in this study, as well as the first ancillary issue – that is, this section considers attributions (including concurring attributions), expectancies, and communication across two levels of analysis. Notably, this chapter is written as a self contained chapter that could be read and understood in and of itself. The second section (Chapter 5) is more technical than the others, and it uses HLM to investigate communication behavior at the level of the speaking turn. The third section (Chapter 6) includes an analysis of the topics chosen by participants completing the standard communication assessment procedure, and the fourth section (Chapter 7) investigates communication behavior in supportive conversations in which couples discuss daily hassles and stressors in their lives.

CHAPTER 2

Methods

Participants

Participants were 74 married individuals (37 couples) recruited through one of

three sources: (1) letters sent to residents of married student housing at a large university,

(2) letters sent home with elementary school children in a public school district, and (3)

letters sent to pastors at local churches. As compensation, a free marriage enhancement

seminar was offered for participating institutions and/or individuals. The participants had

an average age of 36 (range 18 to 66, sd = 11.68), an average of 1.7 children (range 0 to

8, with a mode of 0), and were married an average of 10 years (median = 5 years, range

less than one year to 43 years). Eleven percent of the participants had been married at

least once before, and 93 percent were Caucasian. The household annual income levels

were as follows: less than 25,000 (27%); 25,000 - 40,000 (19%); 40,000 - 75,000 (32%);

75,000 - 125,000 (19%); and greater than 125,000 (3%). In contrast to the usual

sampling bias in marital interaction research (couples responding to newspaper ads for

monetary compensation), most couples in the present sample likely participated because

either (1) the marriage enhancement seminar sounded interesting, or (2) they were part of

a group whose leader promoted the seminar. In terms of general satisfaction, the majority

of subjects were relatively nondistressed, producing an average score on the Dyadic

Adjustment Scale (Spanier, 1976) of 115.07 (sd = 12.17, range 89 to 136); however, 16%

of the sample scored in the distressed range with scores of 100 or less.

Procedure

All participants took part in two sessions which were held at least two weeks apart. Each session lasted about 1.5 to 2 hours, and both involved engaging in three communication exercises (which were videotaped) and completing a number of questionnaires. At the beginning of the first session, couples completed a set of initial questionnaires. Specifically, they completed a demographics page together, and then in separate rooms, individually completed the Dyadic Adjustment Scale (DAS, Spanier, 1976) and the Areas of Change questionnaire (AOC, Weiss, Hops, & Patterson, 1973; Weiss & Birchler, 1975).

Aside from these initial questionnaires, which were completed only during the first session, each of the two sessions followed one of two similar procedural sequences. One of the sequences involved an activity called the "Empathy Exercise" and will be referred to as "Sequence E." The other sequence involved an activity called the "TV Exercise" and will be referred to as "Sequence TV." The order of these two sequences was randomized such that some couples had Sequence E on the first visit and Sequence TV on the second visit, and other couples began with Sequence TV and ended with Sequence E. An overview of the two procedural sequences is listed in Table 2.1.

Both Sequence E and Sequence TV involved taking couples to separate rooms and asking them to follow a "Specific Incident" instruction page (reproduced in Appendix A). This form directed individuals to "pick two specific incidents that you believe illustrate the most relevant and important unresolved issue or issues in your relationship." Participants were given a pad of scratch paper and instructed to write

Table 2.1

Sequence of Assessment Procedures

Sequence E	Sequence TV
Initial Questionnaires (only on 1st session) • Demographics page • Dyadic Adjustment Scale • Areas of Change Questionnaire Questionnaires • Specific Incident instruction page • Hassles List Empathy Exercise Questionnaires • Schema of Partner Empathic Responding to Anger • Memories of Partner Not Understanding • Partner Prediction Form Problem Solving Exercise (1st topic) Attributions Questionnaire (1st topic) Problem Solving Exercise (2nd topic) Attributions Questionnaire (2nd topic)	Initial Questionnaires (only on 1st session) • Demographics page • Dyadic Adjustment Scale • Areas of Change Questionnaire Questionnaires • Specific Incident instruction page TV Exercise Questionnaires • Schema of Partner Empathic Responding to Anger • Memories of Partner Not Understanding • Partner Prediction Form Problem Solving Exercise (1st topic) Attributions Questionnaire (1st topic) Problem Solving Exercise (2nd topic) Attributions Questionnaire (2nd topic)

down, for each incident, (1) when the incident took place, (2) where the incident took place, and (3) what happened. These pieces of paper were then placed in separate envelopes.

If couples were completing Sequence E, they were also given a "Hassles List" (reproduced in Appendix A) at this time. This list contained 48 hassles (some of which were adapted from the Hassles and Uplifts Scale; Kanner, Coyne, Schaefer, & Lazarus, 1981) and the hassles were specifically chosen to reflect issues that would not typically be considered a potential area of conflict in one's relationship. For example, sample hassles include: "troublesome neighbors," "too many responsibilities," "job dissatisfaction," "feeling anxious," "conflict with children," "concerns about health," and "difficulties with friends." Couples were instructed to, "read through the list and choose one item which is most relevant or significant to you right now."

After completing the "Specific Incident" page (and the Hassles page if applicable), couples were reunited to complete a communication exercise. In Sequence E, couples were seated together with each partner holding his or her own completed Hassles list. The experimenter told couples that the exercise would provide "an opportunity for you to demonstrate your ability to listen to your partner and to reflect what it is you have heard" (see Appendix A for the entire set of instructions read to participants). The experimenter then handed the couple a notebook providing instructions on how to complete the exercise.

The notebook (reproduced in its entirety in Appendix A) contained eight pages, with each page containing detailed instructions directing individuals to take on specific listening or speaking roles. The first four pages included a practice exercise involving a

discussion about favorite foods. This was to be completed with the experimenter in the room to make sure that couples understood the instructions. The first page instructed the husband to be the listener and the wife to be the speaker, and the second page instructed the husband to paraphrase. The next two pages simply instructed couples to reverse roles. The second four pages followed an identical sequence; however, this sequence involved a discussion of the items couples checked on the Hassles list. This conversation, completed without the experimenter in the room, was videotaped.

This exercise was intended to elicit the best listening and speaking skills a couple could demonstrate in a videotaped conversation with each other. The notebook instructed the person in the listener role not to talk, but instead to:

Try to make your partner feel that you are listening intently and closely to what he or she is saying. Lean slightly toward your partner, look directly at your partner's eyes and face, and let your face show that you care about your partner.

The person in the speaker role was instructed to "focus on describing your own feelings, your own thoughts, and your own perceptions," for the selected hassle. The person in the paraphrase role was reminded to refrain from offering his or her own opinions, viewpoints, or solutions, and this person was instructed to:

Please paraphrase your partner's feeling message. In your own words, convince your partner that you understood what he or she was communicating. Demonstrate your ability to give an accurate and genuine reflection.

In contrast to Sequence E, couples did not engage in the empathy exercise when completing Sequence TV. Instead, couples were reunited after completing the Specific

Incident page to complete a problem solving discussion in front of a TV set. Data from this TV exercise are not used in the present study, and thus, this exercise is not described in detail here.

After completing either the Empathy exercise or the TV exercise, the remainder of the activities were identical for both Sequence E and Sequence TV. Immediately after completing either the Empathy exercise or the TV exercise, couples individually completed three additional measures while remaining in the same room. Prior to completing these measures, the experimenter placed a light-weight, opaque screen between the couple so they could not see each other. The measures completed at this point included the Schema of Partner Empathic Responding to Anger questionnaire, a four minute speeded test to assess Memory Accessibility of Partner Not Understanding, and a four item Partner Prediction questionnaire to measure their predictions regarding partner behavior in an upcoming problem solving conversation (all these measures are reproduced in Appendix A).

The screen was then removed, couples were given the envelopes containing their second most important specific incident and they were asked to engage in two 10 minute discussions, one for each incident, in which they attempted to resolve the issue (see Appendix A for the entire set of instructions read to participants). These conversations were videotaped for later coding. Finally, after each conversation, couples were given an open response questionnaire entitled "Possible Explanations" (reproduced in Appendix A) which they completed individually, separated by the screen. This questionnaire directed each spouse to make attributions for own behavior and for partner behavior in the specific incident listed on the piece of scratch paper.

Follow-up Procedure

Couples were re-contacted between three and a half and four years after the initial data collection. A packet was mailed to each couple containing a brief questionnaire for each partner (reproduced in Appendix A) and two business reply envelopes. Couples were instructed to complete the questionnaire and place it in the envelope without sharing their answers with each other. This questionnaire included items pertaining to current marital status, current marital satisfaction, and thoughts about divorce. A second questionnaire was mailed out to all couples not completing the first questionnaire, and attempts were made to contact couples by phone if the second questionnaire was not returned. All together, 34 of the 37 original couples were contacted. Of those couples, 30 were still together and 4 had divorced. Completed satisfaction questionnaires were received from 26 of the couples that were still together.

Data Analysis

To analyze data, the following statistical software programs were used: SPSS and HLM. When conducting Hierarchical Linear Modeling analyses, all variables were turned into z-scores using a combined sample of husbands and wives. This was done because coefficients based on standardized scores were easier to interpret than coefficients based on raw scores.

CHAPTER 3

Measures

<u>Communication Behavior</u>

<u>Problem Solving Discussion</u>

Each couple in the study (n = 37) engaged in four different problem solving

conversations, of 10 minutes duration each, completed in two sessions at least two weeks

apart. These conversations were videotaped. In addition, each conversation was

transcribed by an undergraduate research assistant using a format that broke each

conversation down into individual speaking turns and identified a speaker and an listener

for each turn. Each conversation was then coded using an adapted version of Gottman's

Rapid Couples Interaction Scoring System (RCISS) coding system. The original version

of the RCISS coding system involves 22 different dichotomous codes which are used to

rate every speaking turn in a conversation. A table summarizing these codes has been

reproduced as Table 3.1.

To make the RCISS coding system more manageable, it was adapted to the needs

of the present project by reducing the 22 categorical codes into four dimensions derived

from the four general coding categories depicted in Gottman's table. Each dimension

was rated on a 5-point scale with 1 being negative, 3 being neutral, and 5 being positive.

Every speaking turn in every conversation was assigned ratings on these four scales.

These scales are listed in Table 3.2.

Table 3.1

RCISS Codes

	Negative	Positive
Own	*Agenda Building*	
Views	1. Complain	12. Neutral or positive problem description
	2. Criticize	
	3. Negative relationship issue problem talk	13. Task-oriented relationship information
Response	4. Yes-but	14. Assent
	5. Defensive (protect self)	
	Emotional repair and maintenance	
	6. Put down	15. Humor/laugh
	7. Escalate negative affect	
	21. Other negative	22. Other positive
Listener	*Negative*	*Positive*
Codes	8. Absence of backchannels	16. Backchannels
	9. Absence of facial movement	17. Facial movement
	10. Negative facial expression	18. Positive facial expression
	11. Avoidant listener gaze pattern	19. Connected listener gaze pattern
		20. Responsive facial movement

Note. RCISS = Rapid Couples Interaction Scoring System. Reproduced from Gottman's RCISS coding manual (p. 5).

Table 3.2   Communication Behavior Coding Scales

Code	5-point Scale	Definition
Own Views	1 =	• Put down • Sarcasm • Strong criticism • Statement meets criteria in both categories listed for a "2" below
	2 =	Complain • Mild criticism • Negative relationship issue problem talk • "Always/never," "makes me," and "you" statements Negativity • Negative voice tone • Negative nonverbal cues
	3 =	Neutral
	4 =	• Problem description that is clearly not negative • Task oriented information • Polite general information
	5 =	• Polite sharing something about the self (desire, emotion, thought, opinion) • Compliment
Response	1 =	• Blatant invalidation • Mild invalidation stated with negative voice tone
	2 =	Mild Invalidation • Defensive • Explanations that invalidate • Corrections that invalidate • Topic direction change that invalidates • Loaded question
	3 =	Neutral
	4 =	• Assent
	5 =	• Paraphrase • Expansion of partner's statement • Validating humor

Table 3.2 (continued)

Code	5-point Scale	Definition
Emotion	1 =	- Clearly upset - Close to crying - Angry voice
	2 =	- Whine - Sad face - Frown
	3 =	Neutral
	4 =	- Genuine smile - Genuine humor
	5 =	- Laughter - Big smile - Strong positive emotion that dominates turn
Listening	1 =	- Clearly not liking what is being said - Invalidating body cues - Interrupts to invalidate
	2 =	- Slightly uncomfortable with what is being said - Uncomfortable listening - Planning own response - Interrupts out of impatience - Brick wall listening
	3 =	Neutral
	4 =	- Comfortable listening - Body cues (head nods, eye contact, responsive facial expression) - Touching to communicate immediacy
	5 =	Listening that meets more than one criteria for a "4"

These scales were intended to capture the essential qualities of Gottman's coding system while at the same time being somewhat easier for coders to master than a system involving 22 distinct codes. The first scale, Own Views, rates the degree to which a speaker politely and constructively expresses his or her own views. The second dimension, Response, rates the degree to which the speaker gives a validating versus defensive response to his or her partner's preceding statement. The third dimension, Emotion, simply rates the degree of positive versus negative emotion displayed by the speaker. And the fourth dimension, Listening, rates the degree to which the listener communicates that he or she values what is being said as precious.

Before beginning to code tapes, coders were required to complete a training module which included viewing the *Fighting For Your Marriage* video series, reading *We Can Work It Out*, becoming familiar with Gottman's RCISS coding manual, and using the training video tapes from Gottman's research to practice coding. Coders were also required to pass a coding test using a video tape including over 100 speaking turns from various couples who were not part of the present study. On this test, coders were required to produce codes that exactly matched a predetermined key on at least 80% of the speaking turns.

A total of five undergraduate research assistants satisfactorily completed the training and coded the problem solving discussion tapes. In general, each conversation was coded by only one coder. A special system was developed for determining the order of coding. This system specified that: (1) individual coders would not typically code more than one tape from the same couple, (2) coders would code a balanced range of couples across all levels of marital satisfaction (as indicated by the DAS), and (3) coders

would code an equal number of tapes drawn from couples' first, second, third, and fourth conversations.

Coder Reliability. To analyze coder reliability, two different conversations were selected from the data set to be used in reliability calculations. These conversations comprised over 200 speaking turns and included a range of conversation behaviors. These conversations were coded by all coders, and all coders coded both of these conversations twice. The first coding was near the beginning of the coding sequence and the second was near the end. In this way, it was possible to evaluate both inter-coder reliability and intra-coder reliability. Reliability analysis was conducted on four different codes. These codes included the three aforementioned speaker codes (Own Views, Response, and Emotion) and the one aforementioned listener code (Listening).

To examine inter-coder reliability and intra-coder reliability, each coded speaking turn from the two selected reliability conversations was used as a separate case. In this way, it was possible to determine the extent to which there was consistency in coding across individual speaking turns. To examine inter-coder reliability, alphas were computed for each code. In addition, item-total correlations were computed indicating the extent to which each individual coder correlated with the other four. The results from this analysis are listed in Table 3.3. Notably, alphas will give a slightly inflated estimate of reliability because it assumes that all five coders coded every conversation in the data set, when in actuality each conversation was only coded by one coder. Thus, the average of the item-total correlations is the most accurate estimate of reliability.

Table 3.3

Inter-Coder Reliability of Communication Codes

	Own Views	Response	Emotion	Listening
Chronbach's Alpha	.90	.93	.96	.93
Average Item-Total Correlation	.76	.82	.90	.82
Item-Total Correlations				
Coder 1	.71	.74	.90	.69
Coder 2	.75	.82	.91	.83
Coder 3	.83	.89	.91	.91
Coder 4	.75	.86	.87	.81
Coder 5	.78	.80	.90	.87

To examine intra-coder reliability, the scores for a coder's first coding of the reliability tapes were correlated with the scores for that coder's second coding of the reliability tapes. These results are listed in Table 3.4.

Given that there were two reliability conversations, and given that each conversation involved both a husband and a wife, there were a total of four individuals providing data for the reliability analysis. By averaging across speaking turns, it would be possible to compute a different mean score being assigned to each person by each

Table 3.4

Intra-Coder Reliability of Communication Codes

	Own Views	Response	Emotion	Listening
Average correlation	.79	.80	.86	.83
Test-retest correlations				
Coder 1	.77	.76	.87	.70
Coder 2	.83	.90	.91	.87
Coder 3	.91	.93	.94	.85
Coder 4	.80	.78	.87	.87
Coder 5	.64	.65	.71	.84

coder. Given that there are four persons and five coders, there would be 20 different mean scores all together. The variance across these 20 scores could be decomposed into two parts: variance between the four people and variance within people between coders. The variance between people could be viewed as representing the true variance between these different individuals. In contrast, the variance within people represents error variance produced by inconsistencies across the five coders. To provide a visual picture of the percent of variance between people and the percent of variance within people, a chart was created for each code with the four participants listed on the x-axis, the scores
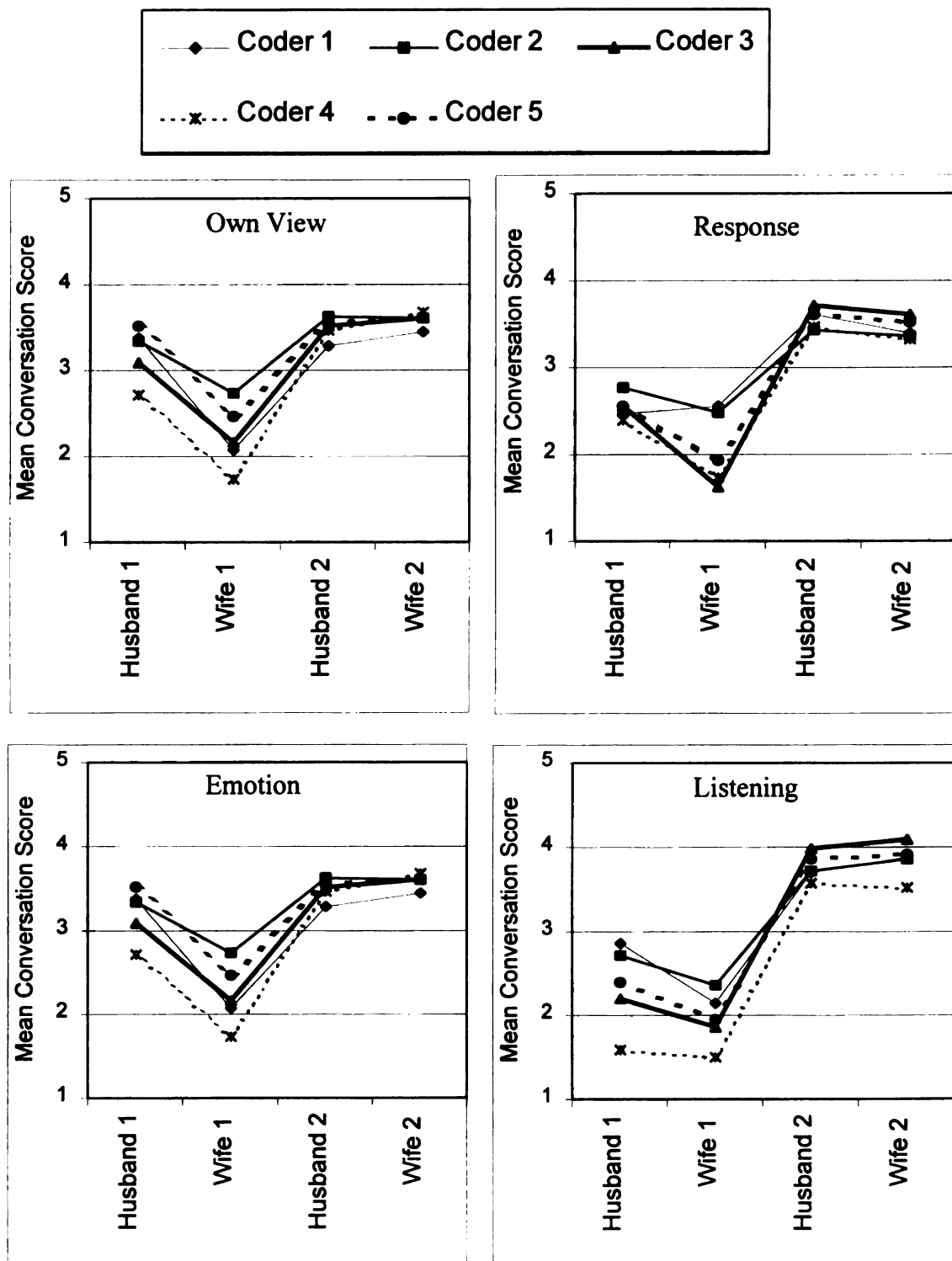
Figure 3.1

Error Variance and True Variance Across Four Participants

produced by the five coders plotted above each individual, and lines connecting the four scores for a single coder. The more spread out the lines, the higher the error variance and the lower the reliability. High reliability is indicated to the extent that all five lines are close together and form a common profile across the four participants. These charts are displayed as Figure 3.1.

From the data depicted in Figure 3.1, it is possible to compute an intraclass correlation. That is, the variance between people could be divided by the total variance (i.e., variance between people plus variance within people between coders) to give the percent of variance that is true variance. Intraclass correlations for all variables are listed in Table 3.5 and all correlations are quite strong. Taken together, all of the various methods used to assess reliability have concurred in suggesting that the video codes have adequate reliability.

Table 3.5

Intraclass Correlations for Communication Codes

	Intraclass correlation	$F_{(3, 16)}$
Own Views	.85	28.41
Response	.90	44.48
Emotion	.91	53.72
Listening	.90	44.40

Empathy Exercise

As previously mentioned, each couple in the study engaged in a videotaped Empathy Exercise where they were instructed to use good listening and speaking skills in sharing personal hassles with each other. Each video tape was coded by three undergraduate research assistants. Notably, the coding procedure for the Empathy Exercise was quite different from the coding system for the problem solving discussions. In the problem solving conversations, the video tapes were transcribed, every single speaking turn received a code, and generally, a single conversation was coded by only one person. In contrast, coding for the empathy exercise involved watching the conversation in its entirety, assigning three global ratings to the conversation as a whole, and having each conversation coded by multiple coders.

A coding system was developed specifically for the purpose of coding the empathy exercises. This coding system assessed three primary dimensions: (1) a person's comfort in sharing and listening to his or her partner, (2) a person's ability to clearly articulate his or her thoughts and feelings, and (3) a person's ability to communicate understanding when instructed to paraphrase his or her partner.

To prepare for coding the empathy exercise, all coders completed a four week seminar on marital research. The team of coders was then given a set of definitions for the constructs to be coded and a scale for each construct. The definitions and scales are listed in Table 3.6.

Table 3.6

Definitions of Constructs and Scales for Coding the Empathy Exercise

Comfort

Comfort is indicated when. . .

- the individual appears to find the activity pleasant and a best guess is that the person would choose to continue the activity if he or she was given the opportunity to do so.
- the person shows genuine smiles (not nervous smiles) and/or other forms of expressive facial movement.

Comfort is counterindicated when. . .

- there is evidence of anxiety, anger, or tenseness.
- the person maintains a stiff posture, a flat facial expression, or fidgets frequently.
- the person turns the instruction notebook page (to end his or her speaking turn) in haste, thereby giving the impression that the topic has not been completely discussed.

Clear articulation of own thoughts and feelings

Clear articulation is indicated when. . .

- several thoughts/feelings are discussed or one particular thought/feeling is discussed in detail.
- the statement is coherent and specific.

Clear articulation is counterindicated when. . .

- the message is ambiguous thereby making it difficult to determine exactly what the person was thinking or feeling or what the situation was.
- the person makes use of euphemisms and metaphors that detract from the specificity of the message.
- the person mumbles in a manner that would make it difficult for the listener to understand what is being said (this is NOT the same as simply speaking softly).
- there is poverty of content in the speaker's message.

Table 3.6 (continued)

Ability to communicate understanding

Understanding is indicated when. . .
- the paraphraser gives an accurate, substantial, and detailed paraphrase.
- the paraphraser sufficiently digests the speaker's message and as a result is able to expand upon what the speaker said in a manner that reinforces the accuracy and empathy of the paraphrase.
- the paraphraser's partner smiles, nods, or gives other cues that he or she perceives the paraphrase as empathic.

Understanding is counterindicated when. . .
- the paraphraser simply parrots back a few items mentioned by the speaker.
- the paraphrase seems insensitive, impoverished, or off track.
- the paraphraser fails to paraphrase or strays from the paraphrasing task.
- the paraphraser's partner appears unresponsive to the paraphrase.

Summary of codes

A. Comfort
B. Clear articulation of own thoughts and feelings
C. Ability to communicate understanding

Scale for codes

1. Construct is entirely absent.
2. Poor example of the construct.
3. Neutral -- not a distinctively good or bad example of the construct.
4. Some evidence of the construct being present.
5. Clearly an outstanding example of the construct.

The coders met as a group to view videos taken from the present study as well as videos from other research studies and to discuss and clarify their understanding of the definitions and the coding scales. Coders then worked on their own, with each person individually coding all the empathy exercise conversations in the data set.

To assess coder reliability, alphas were computed for each scale using the three coders as three items. These results are reported in Table 3.7 for wives and husbands separately. In general, most coefficients were quite reasonable, especially considering that there were only three coders. Notably, the reliability was a bit low on clear articulation for wives and on understanding for both partners.

Table 3.7

Reliability of Empathy Exercise Codes

	Wives	Husbands
Comfort	.80	.74
Clear Articulation	.60	.76
Understanding	.68	.69

Issue Topic Coding

As previously mentioned, to prepare for each conversation, subjects followed instructions on a Specific Incident Instruction Page. This page instructed participants to think of two specific conflict incidents related to unresolved issues in their relationship and to write a description of these incidents on a piece of paper. One of these incidents was discussed by the couple in a standard problem solving discussion task. The other incident was either discussed in the T.V. exercise or not used. These incidents are relevant to two variables that were expected to function as pre-conversation predictors of subsequent communication behavior. The variables were: (1) the extent of hostility in one's cognitive framing of the incident, and (2) issue difficulty. Keep in mind that, on each visit to the communication laboratory, couples completed one conversation for one of the wife's topics and one conversation for one of the husband's topics. Thus, although each person identified a total of four different topics, only two of these topics were actually discussed in a problem solving conversation. Further description of the measures used to assess these three variables follows.

Hostility in Issue Framing

The implicit hostility in the phrasing of each issue description was assessed in a two step coding procedure. One of the key goals of this procedure was to create an issue framing variable that was distinct from a variable pertaining to issue difficulty. The idea was to get a measure of the ways in which a person thinks about an issue without having this assessment being contaminated by the actual content of the issue. Along this line, as a first step in creating the issue framing variable, the topic description statements were transcribed, compiled, and rewritten so that the phrasing was maintained, yet the exact

content of the issue was masked. That is, the rewording made it impossible to determine whether the incident involved a disagreement over toothpaste, in-laws, child discipline, or an affair.

The masking procedure followed the following algorithm. First, each statement was rewritten so that the original issue content was changed to become a disagreement about cleanliness or organization in the kitchen. For example, if a participant wrote, "I found that you let the children buy candy at the store and I got mad because you always do this," this statement was rewritten to say, "I found that you let the kitchen get messy and I got mad because you always do this." As much as possible, the initial phrasing was maintained. In addition, other cues that would indicate hostility were preserved, including attributional words (including perceptions of globality, stability, locus, responsibility and blame), judgments regarding the internal experience of the partner (motivation, intent, mood, emotions), and perceptions of rudeness (attack, unfairness, and injustice). For the sake of expediency, extraneous details about the situation were eliminated (e.g., "it took place before the waitress brought dinner but after Bob asked your Mother about the trip"). In addition, all references to one's partner were altered, as necessary, so that they all referred to the partner as "you" (instead of giving the partner's actual name or simply referring to "my husband.").

The second step in creating the issue framing variable involved assigning ratings of hostility to the phrasing of each re-written issue description. Toward this end, the rewritten issue descriptions were compiled into a questionnaire that was completed by 48 students attending a course in Data Analysis in Psychological Research. To keep this questionnaire from becoming unreasonably long, only those topics that were actually

discussed in a problem solving conversation were used. In other words, this questionnaire was based on a total of 148 written topic descriptions: 37 couples times two partners times two issues for each partner. This questionnaire included an extensive set of written instructions on how to identify and rate hostility. In addition, the primary investigator of this study verbally reviewed these instructions with the students before they began making ratings. These instructions told students to:

> Imagine that the statement is being made to you. Use your personal experience (observing relationships and/or participating in relationships) to imagine how you would feel if you were on the receiving end of the statement, and to thereby judge the degree to which the statement is hostile.

Students were also given several different examples of statements, which were used to illustrate the ways in which different aspects of a statement such as phrasing, use of words like "always" or "never," and attributions could be taken to indicate the extent of hostility. Finally, students were given a 5 point scale providing a prototypical description of the types of statements that might fit each level. This scale is depicted in Table 3.8.

In addition to completing the rating questionnaire, all students completed the Interpersonal Perception Task-15 (IPT-15; Costanzo & Archer, 1993). This instrument involves watching a video tape with a series of 15 brief scenarios involving some form of human communication. Students watch each scenario and are then asked to make a judgement requiring social perception skills across dimensions pertaining to deception, intimacy, status, kinship, and competition. For example, they may be asked to judge whether they think a person is lying or to determine the relationship between two

Table 3.8

Scale for Hostility Ratings

Scale	Prototypical Definition		
1	**Content**	*Stated politely*	No perception of a problem.
2	**Desires a Change**	*Stated politely*	Perceives it as a relationship issue.
3	**Frustrated**	*Statement criticizes partner.*	Perceives the partner as responsible.
4	**Angry**	*Statement blames partner.*	Partner's behavior perceived as inexcusable.
5	**Contemptuous**	*Statement puts down partner.*	Partner's behavior perceived as an unjustified attack.

individuals. The IPT-15 has demonstrated good reliability, and validity research indicates that it may tap a person's ability to decode cues in interpersonal interaction (Costanzo & Archer, 1993).

The IPT was used because it seemed possible that some students might be more reliable observers of interpersonal behavior and thereby better coders of hostility than other students. Toward this end, a series of analyses were conducted to determine if there were any coding differences between students scoring high on the IPT and those scoring low. Results indicated that there was a marginally significant tendency for students with high IPT scores to rate the statements as less hostile than students with lower IPT scores ($r = -.27$, $p = .06$). Notably, IPT scores were also negatively correlated with students' standard deviations of ratings on the coding questionnaire ($r = -.29$, $p < .01$) – that is, people with higher IPT scores utilized a more constricted set of ratings.

As a next step in this analysis, the students were split into two groups: those scoring above the mean (i.e., 10.1) on the IPT and those scoring below the mean. Reliability analyses were then conducted for each group using each coder as a different variable (i.e., an indicator of hostility) and each statement on the questionnaire as a different case. In each group, there were 24 coders making ratings on 140 cases. For the high IPT group, the alphas for the hostility rating was .97 and all coders except one produced item-total correlations greater than .65. In the low IPT group, the alpha for the hostility rating was .96 and there were 5 coders producing item-total correlations below .65. Average item-total correlations for coders were .72 (sd = .08) and .69 (sd = .10) for the high and low IPT groups respectively (t (df = 46) = 1.30, n.s.). For each statement on the questionnaire, the mean rating for the high IPT coders was compared to the mean rating of the low IPT coders. Consistent with the previously reported marginal negative correlation between IPT and hostility ratings, the high IPT group made ratings that were slightly lower than the low IPT group (mean = 2.73, sd = .79 versus mean = 2.83, sd = .79 for high and low groups respectively, t (df = 139) = 4.94, p < .001).

Taken together, these results indicate that almost all the students, regardless of IPT score, were producing highly reliable codes. It appears that, when students are told to assess hostility, they are quite consistent in what is called hostile and what is called benign. Moreover, there were only a few differences between high and low IPT groups and these differences were quite small. Most notably, students with better interpersonal perception skills tended to perceive slightly less hostility in the statements.

Although there were no substantial differences between the high and low IPT groups, a highly conservative approach was used to create hostility scores for each

statement by using codes only from those 23 students who had both a IPT score above 10 and an item-total correlation above .65. Each written problem description made by a participant in the marriage study received a hostility in issue framing score that was the average hostility rating made across the 23 selected student coders.

Issue difficulty

In addition to the hostility rating, each written description of an issue to be discussed was given an issue difficulty rating. As previously mentioned, it was important to keep these two ratings separate so that hostility in framing pertained only to the way an issue was framed, and issue difficulty pertained only to the topic of the issue. The difficulty rating required a two part assessment to determine (1) the category of the topic of the issue being broached and (2) the difficulty of that particular category of topic. Separate procedures were used to address each of these assessment needs.

The first step, then, was to classify each written description of an unresolved incident into a topic category. To do this, a list of 24 different topics was created. This list was developed by reviewing the actual written descriptions in the data set, as well as various marital questionnaires such as the Dyadic Adjustment Scale (DAS, Spanier, 1976), the Areas of Change scale (AOC, Weiss, Hops, & Patterson, 1973; Weiss & Birchler, 1975), and the Relationship Problem Inventory (Knox, 1970). Efforts were made to make the list as short as possible without sacrificing potentially salient distinctions between issues.

This list of issue categories was given to four undergraduate research assistants who were instructed to identify one or two topics that best described the content of each written description. Notably, unlike the coding procedure for issue framing, all four topic

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descriptions were coded for each participant. In other words, coding was not limited to only the topics that were actually discussed in a problem solving conversation. This procedure produced an average rate of agreement of 66.55%. Table 3.9 lists the actual agreement rates between all the possible coder pairs.

Using the information provided by the coders, each written statement for each participant in the study was assigned to one or more topic categories. Specifically, statements were assigned to any category identified by at least two coders as fitting that statement. This resulted in 249 statements (or 84%) being placed in one category and 38 statements (or 13%) being placed in two categories, and 9 statements (or 3%) not being

Table 3.9

Agreement Between Coder Pairs on Topic Categories

	Agreement
Coder 1 with Coder 2	73%
Coder 1 with Coder 3	63%
Coder 1 with Coder 4	66%
Coder 2 with Coder 3	67%
Coder 2 with Coder 4	67%
Coder 3 with Coder 4	63%

placed in any category. No statements were placed in more than two categories. The 9 unclassified statements were then reviewed and discussed by the group of coders who then made a group decision on where the statement should be placed.

Having classified statements into categories, the next step was to assign a difficulty rating to each of these 24 categories. To do this, 12 licensed, Ph.D. psychologists who frequently work with couples in their practice were recruited to serve as a panel of experts. Each psychologist was mailed a questionnaire which listed the 24 categories. The questionnaire asked the psychologist to read each category description and, "give your best guess as to how difficult it was for the couples raising this issue to discuss and resolve the matter." Difficulty ratings were then assigned using a 5-point scale where: "1" indicated an extremely easy topic, "2" indicated a moderately easy topic, "3" indicated a medium topic, "4" indicated a moderately difficult topic, and "5" indicated an extremely difficult topic. Although there were several cases where two individual psychologists produced substantially discrepant ratings on a single item, taken as a whole, the ratings were highly reliable with an alpha of .93. Thus the panel of experts showed a high degree of consistency in identifying the difficulty level for each topic category. The list of topic categories and the mean difficulty rating for each category is listed in Table 3.10.

Each topic category was assigned a difficulty rating which was equal to the mean difficulty rating as determined by the panel of psychologists. These category difficulty ratings were then used to assign difficulty ratings to each of the actual written issue

Table 3.10
Topics Sorted by Mean Difficulty Rating

Difficulty Rating	Topic
4.58	Doubts about relationship future (divorce; separation)
4.50	Disrespectful behavior (intentional rudeness; contemptuous remarks; blatant disregard for partner's desires; lying)
4.42	Extramarital intimacy boundary issues (jealousy; use of pornography; dancing with other partners)
4.25	Excessive or inappropriate displays of anger (innocuous or innocent situation led to partner getting angry; unfair accusation; yelling or attacking)
4.17	Sexual interaction (initiation; arousal; frequency; interest)
4.00	Lack of communication (refusal to talk; not sharing feelings; not expressing desires)
3.83	In-laws and extended family (conflict with in-laws; time spent with relatives; spouse's behavior around extended family)
3.75	Confusing, erratic, or emotional behavior (suddenly becoming upset; sudden change of mind; behavior that contradicts a previous plan)
3.58	Criticism (correcting; blaming; explaining how partner should have done something; challenging partner's viewpoint)
3.46	Poor communication skills (being unclear or hard to understand; failure to negotiate)
3.42	Child rearing issues (discipline; expectations; partner's behavior in front of children)
3.42	Finances (how to spend money; dealing with bills; shopping)
3.09	Lack of follow-through (disregarding previous plans or commitments with partner; not doing something as agreed; forgetting to keep a promise)
3.08	Showing support in public or social situations (contradicting spouse in front of others; not standing up to others on spouse's behalf)
3.08	Showing affection (lack of comfort; showing affection; lack of romance)
3.08	Lack of listening (poor listening; not listening; problem solving instead of understanding; defensive listening)
2.75	Important decisions (major purchases; vacations; where to live; job change; retirement; schooling plans)
2.58	Extent or quality of time together (wanting more intimate time together; time for quality communication; being too tired or too busy to do activities together)
2.50	Careless or unthinking behavior (mistakes that cause inconvenience; forgetting something)
2.33	Household tasks (chores; cleanliness; responsibilities; standards and methods of household maintenance)
2.25	Showing recognition or appreciation (failure to notice or appreciate something; failure to acknowledge skills and competencies)
1.58	Outside frustration or potential stress (worries about a job; having a bad day)
1.33	Social and entertainment activities (whether to attend something)

descriptions made by the couples in the study. When an issue description had been coded into two categories, it was given a rating coinciding with the most difficult of the two categories.

Partner Prediction Questionnaire

The Partner Prediction Questionnaire is a brief 4 item instrument created specifically for the present study (for a copy of the questionnaire, see Appendix A). This questionnaire was given to couples once during each session, immediately prior to engaging in the problem solving discussions. Notably, at this point both partners had already followed the instructions on the specific incident form directing them to choose a specific incident pertaining to an unresolved issue in the relationship. The instructions to the Partner Prediction Questionnaire reminded participants, "You are about to have a conversation with your spouse in which you discuss the incident you chose to talk about," and asked participants to predict how well they thought their spouse will understand their: (1) feelings, (2) thoughts, (3) motives, and (4) desires. Each of these areas for potential understanding was to be rated on a 5 point scale. To compute a composite score on this measure, individual scores were summed. This scale demonstrated good reliability, with alpha coefficients of .85 for wives and .83 for husbands (alpha = .84 combined).

Attributions

After each of the 10 minute conversations, couples completed an open-ended attribution questionnaire in which they were asked to list possible explanations for their

own behavior and for their partner's behavior (for a copy of this questionnaire, see Appendix A). In my previous research (Sanford, 1999), I developed a coding system for this questionnaire and identified two salient partner attribution codes: Concurrence and Blame. Each individual attribution listed on a questionnaire was coded. An attribution that blamed the partner for negative behavior was given a blame score of +1, and an attribution that clearly excused the partner of blame was given a blame score of –1. Attributions were give a score of +1 for concurrence any time the attribution given by an individual to explain his or her partner's behavior matched the attribution the partner gave to explain his or her own behavior. Occasionally, a concurrence score of –1 was given when an attribution fit the requirements for concurrence, yet was phrased in a clearly sarcastic manner. Notably, partner attributions could also be placed in other, more neutral categories, such as codes for behavior caused by a person's psychological condition and behavior caused by a person's medical or physical condition.

Each attribution questionnaire was coded by three undergraduate research assistants. Each attribution listed on an individual questionnaire was coded separately. After coding was completed, each individual attribution score was weighted in proportion to the total number of attributions listed on the questionnaire from which the attribution was drawn. Scores on each questionnaire were then summed producing four sets of four attribution scores for each individual participant in the study, one set of scores for each of the four conversations. The codes for Blame and Concurrence were both found to have adequate reliability (Sanford, 1999).

In addition to these specific codes, each attribution page was given a global rating to reflect the overall amount of negativity or contempt indicated in all the attributions

listed on that page as a whole. This global rating was made on a six point scale. Coders were given descriptions of each point along this scale along with a set of target percentages regarding the approximate percent of codes they should be assigning to each level. These descriptions and percentages are listed in Table 3.11.

To determine the reliability of the overall contempt rating, an alpha was computed. Each coder was used as a separate indicator and each questionnaire was used as a separate case. This resulted in an alpha of .80. Thus, the overall contempt rating was judged to have acceptable reliability.

Other Questionnaires

Dyadic Adjustment Scale. The Dyadic Adjustment Scale (DAS, Spanier, 1976) is a widely used 32 item questionnaire for assessing dyadic adjustment and includes questions pertaining to Satisfaction, Consensus, Affectional Expression, and Cohesion. This questionnaire has a reported internal reliability of .96 (Spanier, 1976) and a two week test retest reliability of .87 (Carey, Spector, Lantinga, & Krauss, 1993). Validation studies have found that the DAS adequately discriminates between distressed and non-distressed couples (Spanier, 1976; Eddy, Heyman, & Weiss, 1991).

Areas of Change. The Areas of Change questionnaire (AOC, Weiss, Hops, & Patterson, 1973; Weiss & Birchler, 1975) asks participants to identify and rate areas where "I want my partner to change," and it contains 34 items that participants rate on a scale ranging from -3 to +3. The AOC questionnaire has a reported reliability of .88 (Weiss & Birchler, 1975) and discriminates between distressed and nondistressed couples (Birchler & Webb, 1977).

Table 3.11

Scale for Global Attribution Rating

Scale	Description	Suggested percent falling in this category.
1	Evidence of being friendly and polite	5%
2	Possibly friendly and polite	10%
3	Neutral	45%
4	Possibly hostile or contemptuous (or critical)	25%
5	Evidence of clear hostility or contempt	10%
6	High level of clear hostility or contempt	5%

Schema of Partner Empathic Responding to Anger. A participant's Schema of Partner Empathic Responding to Anger (SOPERA) was assessed using a 20 item Likert-type measure (Sanford, 1998; for a copy of this questionnaire, see Appendix A). This questionnaire is intended to assess the degree to which a person remembers his or her spouse as being an empathic, understanding listener during marital conflict and at times when the respondent felt angry. The items include examples of empathic responding and non-empathic responding, all of which were rated on a five-point scale. The questionnaire is scored so that a high score indicates greater endorsement of items describing one's partner as a good listener to angry feelings. Results based on data from

the present sample indicate that this scale has adequate reliability and validity (Sanford, 1998).

Memory Accessibility of Partner Not Understanding. Memory Accessibility of Partner Not Understanding (MAPNU) was assessed using an open response, four minute speeded test (Sanford, 1998; for a copy of this questionnaire, see Appendix A). This instrument is intended to assess the degree to which a person has ready access to many specific memories of not feeling understood. The score for this measure is computed by simply summing the number of such memories a person recalls and reports in a four minute time period. Results based on data from the present sample indicate that this instrument has adequate reliability and validity (Sanford, 1998).

The demographics questionnaire used in the present study included questions regarding age, number of children, household income, years married, religion, occupation, and previous marriages.

CHAPTER 4

Cognition, communication, and divorce:

How variables function differently across multiple levels of marital process

One of the key challenges for contemporary research on marriage is to provide a

clearer understanding of marital process (Gottman, 1994). Why is it that some marriages

become stable, satisfying partnerships whereas other marriages become bitter, lonely

battlegrounds? The issue, here, is not simply seeking to identify important predictors of

marital satisfaction or divorce, although this is certainly important, but rather to

understand, as well, how different predictor variables might relate to each other. Thus,

the goal behind research on marital process is to map out relationships between multiple

variables and to identify a multi-layered process of interpersonal interaction that is

important for understanding the trajectory of a couple's relationship (Karney & Bradbury,

1995). To actually accomplish this goal, however, marital researchers may need to

expand upon the methods and statistical procedures that have traditionally been used.

Along this line, this study first considered a set of key predictors of important marital

outcomes and then demonstrated how Hierarchical Linear Modeling, a statistical

technique recently introduced to the field of marital research by Raudenbush, Brennan,

and Barnett (1995), can be used to tease apart the ways in which these predictor variables

actually relate to each other.

Gottman (1993, 1994) has formulated a complex theory of marital process based

on years of research, and his work gives strong evidence that one of the most important

variables in understanding marital process is communication behavior. Specifically, he

has focused on analyzing the ways couples communicate when resolving conflicts, and his findings suggest that there are four types of communication that are particularly destructive: criticism, contempt, defensiveness, and withdrawal. Gottman has found that the proportion of a couple's total communication behavior falling in these four categories is a predictor of divorce.

In addition to research on communication, a second area of research that is highly salient to understanding marital process is cognition (Fincham, 1994). Most importantly, there is a substantial body of research regarding the role of attributions in marriage (Bradbury & Fincham, 1990). Although this research has explored many different attribution dimensions such as locus and stability, one of the most important dimensions appears to be the dimension of blame. For example, Fincham and Bradbury (1992) found that blame (or responsibility-blame) attributions mediate the relationship between other types of partner attributions and anger. Moreover, of the attributions studied to date, those involving responsibility-blame appear to have the strongest relationship with observed behavior during discussions in which couples attempt to resolve relationship conflicts (Bradbury, Beach, Fincham, & Nelson, 1996; Bradbury & Fincham, 1992; Miller & Bradbury, 1995).

Although attributions regarding blame are certainly important, attribution theory in general has yet to be fully exploited for its full potential to address issues pertaining to communication process in marriage. This is partly because the types of attribution dimensions typically studied are usually conceptualized as phenomena occurring entirely within an individual person irrespective of the partner. That is, attributions are commonly placed in a unidirectional framework in which an observer makes an

attribution for an actor's behavior without necessarily needing to interact with the actor or to have a discussion with the actor about the target event. However, in marriage where two partners participate in an ongoing relationship, an initial attribution could be altered, reversed, or confirmed on the basis of subsequent relationship interactions.

To better understand how attributions function as part of marital process, then, it would be useful to be able to explicitly assess attributions in the context of communication behavior. For example, if a wife comes home thirty minutes late, and if the couple has had an opportunity to discuss the matter, it could be important to assess whether the husband comes to make an attribution for his wife's behavior that matches her own explanation for her own behavior. Presumably, couples in satisfying, stable relationships are likely to have the types of conversations that result in agreement between both partners regarding the attributions they make for each other's behavior. Along this line, it may be useful to introduce the concept of attributional concurrence. If a husband's explanation for his wife's behavior matches the way she explains her own behavior, he would be making a concurring attribution. If a husband's explanation is different from his wife's, he would be making a non-concurring attribution.

In addition to attribution dimensions of blame and concurrence, another form of cognition that is especially important for understanding marital process is cognitive expectancies. In early work regarding cognitions and marriage, Doherty (1991a, 1991b) suggested that there are two important types of cognitions: the attributions couples make to explain the causes of relationship conflicts and the expectations couples have regarding their ability to effectively resolve conflicts. Along this line, Baucom, Epstein, Sayers, and Sher (1989) have proposed that there is a current need for research regarding

cognitive expectancies in marriage. Where attributions are explanations for a partner's past behavior, expectancies are predictions regarding a partner's future behavior. Such predictions would be expected to be especially important vis-à-vis communication behavior. For example, the extent to which a person predicts that his or her partner is likely to be understanding in an up-coming conversation about an area of conflict would be expected to influence the course of what actually happens in that conversation.

Taken together, communication behavior, attributional blame, attributional concurrence, and expectancies may all be important variables in understanding marital process. If this is true, then these variables would all be expected to predict important outcomes in marriage such as concurrent marital functioning, change in marital satisfaction over time, and divorce. Notably, there is currently evidence that communication behavior predicts divorce and that attributions predict change in satisfaction over time (Karney and Bradbury, 1995). However, much less is known, for example, about the extent to which attributions predict divorce. In addition, almost nothing is known about the extent to which attributional concurrence or expectancies predict important outcomes in marriage.

While it is useful to determine the importance of these variables in predicting outcomes in marriage, there remains a larger, and more complex, question regarding how these variables might relate to each other. What is the relationship between communication behavior and cognition? A foundational tenet in the present project is that, to address this question, it is necessary to consider different "levels of analysis." Traditionally, research on marital process has focused on identifying variables that are correlated with each other, and along this line, there is evidence that communication

behavior is, indeed, correlated with attributions (Bradbury, Beach, Fincham, & Nelson, 1996; Bradbury & Fincham, 1992; Miller & Bradbury, 1995). However, to simply determine that two variables are correlated fails to clarify the extent to which the relationship between the variables occurs at the level of the "person" and the extent to which the relationship occurs at the level of the "conversation." A person level relationship is essentially a correlation between two trait-like variables. That is, a person who, in general, uses a particular type of communication might also be the type of person who, in general, makes a particular type of attribution. This would be distinct from a conversation level relationship, which is a more context dependent relationship between two variables. At this level, a person's communication behavior in the context of a particular conversation might be related to the attributions he or she is making in the context of that same conversation.

Issues regarding levels of analysis are becoming increasingly salient in current research on marital process. For example, in a recent study conducted by Carels and Baucom (1999), potential predictors of communication behavior were classified as being either "proximal" predictors, presumed to function at the level of the conversation, or "distal" predictors, presumed to function at the level of the person. However, research directly testing whether different marital process variables actually function at specific levels of analysis has not typically been conducted. Notably, Hierarchical Linear Modeling (HLM) is a statistical tool that could be used to conduct such research (Bryk & Raudenbush, 1992).

Toward this end, the present study will not only investigate the degree to which the aforementioned communication and cognition variables predict important marital

outcomes, but also demonstrate the ways in which HLM can be used to investigate relationships between these variables across two levels of analysis. In terms of the HLM analysis, specific questions will be addressed regarding possible relationships (1) between communication and attributional blame, (2) between communication and attributional concurrence, and (3) between communication and expectancies.

Regarding the relationship between communication and attributional blame, it is not clear the extent to which the reported correlation between these variables represents a person level relationship and/or a conversation level relationship. Notably, Gottman's (1994) theory of marital process conceptualizes attributions as a trait-like variable, and this conceptualization is consistent with the design of most attribution questionnaires which are intended to assess the types of attributions a person typically makes and not the specific attributions a person makes in the context of a specific conversation (e.g., Fincham & Bradbury, 1992). This theoretical line would lead to the prediction that attributional blame functions primarily at the person level and that it is much less important for understanding unique variance in the context of individual conversations.

In contrast, Bradbury and Fincham (1990) have proposed a model of attributions in marriage suggesting that attributions are largely influenced by specific behavioral contexts. This model would leave open the possibility that attributional blame could function not only at the level of the person, but also at the level of the conversation. Taken together, it is debatable whether attributional blame would be expected to function primarily at one level (as implied in Gottman's model) or at both levels (as is allowable in the Bradbury and Fincham model). As noted by Bradbury and Fincham, there is a need to empirically address this issue and to explore the possibility that attributions may

reflect an overall attributional style more than they represent a person's specific response to a specific behavior.

In investigating attributional concurrence, there are two forms of communication behavior that would be expected to be especially salient: (1) the extent to which a person uses good listening at the level of the conversation, and (2) the extent to which one's partner uses good communication at the level of the conversation. Presumably, it is easier to make a concurring attribution, that is, to agree with the partner's viewpoint, if the partner does a good job of communicating his of her viewpoint, and if oneself does a good job of listening to that viewpoint. Thus, in contrast to attributional blame, which could potentially be less directly dependent on communication, attributional concurrence is expected to be specifically related to the communication behavior of one's partner, as well as one's own listening behavior, observed in the context of a specific conversation.

Finally, cognitive expectancies are presumed to be an especially important predictor of communication behavior at the level of the conversation. Specifically, a person's pre-conversation predictions about the extent to which the partner is likely to be understanding or empathic in an upcoming conversation would be expected to partially determine the course of what actually happens in that conversation. Not only might predictions of partner behavior accurately reflect what the partner is likely to do, but prediction's of partner behavior might also determine one's own behavior as well. A person who does not expect his or her partner to be understanding in an upcoming conversation may have little motivation to use good communication skills during that conversation.

To address these questions in this study, communication and cognition was assessed across four different conversations. Notably, it was necessary to assess variables across more than one conversation in order to address questions pertaining to multiple levels of analysis. To validate the overall importance of the proposed communication and cognition variables for understanding marital process, they were used to predict both longitudinal and concurrent outcomes. These included scores on four different measures of current marital functioning, as well as change in satisfaction over a three-and-a-half year time period, and divorce. After investigating the importance of these variables in predicting marital outcomes, HLM was then used to investigate relationships between communication and cognition at the level of the conversation and at the level of the person.

Methods

Participants

Participants were 74 married individuals (37 couples) recruited through one of three sources: (1) letters sent to residents of married student housing at a large university, (2) letters sent home with elementary school children in a public school district, and (3) letters sent to pastors at local churches. As compensation, a free marriage enhancement seminar was offered for participating institutions and/or individuals. The participants had an average age of 36 (range 18 to 66, sd = 11.68), an average of 1.7 children (range 0 to 8, with a mode of 0), and were married an average of 10 years (median = 5 years, range less than one year to 43 years). Eleven percent of the participants had been married at least once before, and 93 percent were Caucasian. The household annual income levels

were as follows: less than 25,000 (27%); 25,000 - 40,000 (19%); 40,000 - 75,000 (32%); 75,000 - 125,000 (19%); and greater than 125,000 (3%). In terms of general satisfaction, the majority of subjects were relatively nondistressed, producing an average score on the Dyadic Adjustment Scale (Spanier, 1976) of 115.07 (sd = 12.17, range 89 to 136); however, 16% of the sample scored in the distressed range with scores of 100 or less.

<u>Procedure</u>

All participants took part in two sessions which were held at least two weeks apart. Each session lasted about 1.5 to 2 hours, and both involved engaging in several videotaped communication exercises and completing a number of questionnaires. At the beginning of the first session, couples completed a set of questionnaires including a demographics page, the Dyadic Adjustment Scale (DAS, Spanier, 1976) and the Areas of Change questionnaire (AOC, Weiss, Hops, & Patterson, 1973; Weiss & Birchler, 1975).

The majority of the data used in the present study were taken from a common assessment sequence that was identical on both the first assessment session and the second assessment session. This common sequence involved taking individuals to separate rooms and giving them a piece of scratch paper and a "Specific Incident" instruction page. The instruction page directed individuals to think of an "unresolved issue in your relationship" and then told them to use the piece of scratch paper to write down a specific incident, regarding an event that actually happened, pertaining to the unresolved issue. The piece of paper was then placed in a large envelope. After completing other assessment procedures unrelated to the present project, individuals completed three additional measures: the Schema of Partner Empathic Responding to Anger questionnaire (Sanford, 1998), the Memory Accessibility of Partner Not

Understanding four minute timed recall task (Sanford, 1998), and a four item Partner Prediction Questionnaire used to measure one's predictions regarding the partner's behavior in an upcoming conversation about an unresolved issue.

After completing these questionnaires, couples were reunited and given the envelopes containing their specific incident. They were then asked to engage in two 10 minute problem solving discussions, one for the wife's incident and one for the husband's incident, in which they attempted to resolve the issue. These conversations were videotaped for later coding. After each conversation, couples were given an open response questionnaire entitled "Possible Explanations" which they completed individually, separated by a screen. This questionnaire directed each spouse to make attributions for own behavior and for partner behavior in the specific incident listed on the piece of scratch paper that they were discussing. All together, couples completed a total of four conversations and a total of four attribution questionnaires, one for each conversation.

Between three-and-a-half and four years after the initial data collection, couples were re-contacted. A packet was mailed to each couple containing a brief questionnaire for each partner and two business reply envelopes. Couples were instructed to complete the questionnaire and to place it in the envelope without sharing their answers with each other. This questionnaire included items pertaining to current marital status and it also included the satisfaction subscale from the Dyadic Adjustment Scale. A second copy of the questionnaire was mailed out to all couples not completing the first questionnaire, and attempts were made to contact couples by phone if the second questionnaire was not returned. All together, 34 of the 37 original couples were recontacted. Of those couples,

30 were still together and 4 had divorced. Completed satisfaction questionnaires were received from 26 of the couples that were still together.

<center>Measures</center>

Communication Behavior Codes

Each couple in the study engaged in four different problem solving conversations. Each conversation was transcribed using a format that broke the conversation down into individual speaking turns and identified a speaker and an listener for each turn. Each conversation was then coded using an adapted version of Gottman's RCISS coding system. This adapted version used the 22 categorical codes from Gottman's RCISS system to form four dimensions with each dimension being rated on a five-point scale. Every speaking turn in every conversation was assigned ratings on these four scales with -2 being negative, 0 being neutral and +2 being positive. The first dimension, Own Views, is related to Gottman's concepts of criticism and contempt. A negative score is given when the speaker uses contempt and criticism to express his or her own views, and a positive score is given when a person politely and constructively expresses his or her own thoughts and feelings. The second dimension, Response, is related to Gottman's concept of defensiveness. A negative score is given when a speaker responds defensively to his or her partner, and a positive score is given when a speaker acknowledges or validates what his or her partner said on the previous speaking turn. The third dimension, Emotion, is less directly related to Gottman's coding system, and it simply rates the extent of positive versus negative emotion displayed by the speaker. Finally, the fourth dimension, Listening, is related to Gottman's concept of withdrawal. A negative score is

<center>91</center>

given when the listener appears withdrawn, or interrupts, or displays a "stonewall" facial expression while listening. A positive score is given when the listener shows responsive facial movement or appears to be comfortably enjoying listening to his or her partner.

Before beginning to code tapes, coders were required to complete a training module and to pass a coding test using a video tape including over 100 speaking turns from various couples who were not part of the present study. On this test, coders were required to produce codes that exactly matched a predetermined key on at least 80% of the speaking turns. A total of five undergraduate research assistants satisfactorily completed the training and were involved in coding the actual data. Aside from tapes selected for reliability analysis, each conversation was coded by only one coder.

To analyze coder reliability, two different conversations were selected from the data set be used in reliability calculations. These conversations comprised over 200 speaking turns and included a wide range of conversation behaviors. These conversations were coded by all coders, and all coders coded both of these conversations twice. The first coding was near the beginning of the coding sequence and the second was near the end. In this way, it was possible to evaluate both inter-coder reliability and intra-coder reliability.

To examine inter-coder reliability and intra-coder reliability, each coded speaking turn from the two selected reliability conversations was used as a separate case. To examine inter-coder reliability, item-total correlations were computed indicating the extent to which each individual coder correlated with the other four. The item-total correlations ranged between .69 and .91, and the average item-total correlation for each dimension is reported in Table 4.1. To examine intra-coder reliability, the scores for a

coder's first coding of the reliability tapes were correlated with the scores for that coder's second coding of the reliability tapes. These test-retest correlations ranged between .64 and .91, and the average test-retest correlation for each dimension is listed in Table 4.1. As an alternate method of examining reliability, intraclass correlations were also computed. Given that the reliability analysis included tapes from two couples, a total of four individual participants (two from each couple) were included in the reliability analysis, and each individual received scores from five different coders. Thus it was possible to compute intraclass correlations comparing the amount of true variance between people with the amount of error variance within people between coders. Intraclass correlations ranged between .85 and .91 and are also listed on Table 4.1. Taken together, all three methods used to assess reliability concurred in suggesting that the video codes have adequate reliability.

Table 4.1

Reliability of Communication Codes

	Own Views	Response	Emotion	Listening
Average inter-coder correlation	.76	.82	.90	.82
Average intra-coder correlation	.79	.80	.86	.83
Intraclass correlation	.85	.90	.91	.90

<u>Partner Prediction Questionnaire</u>

The Partner Prediction Questionnaire is a brief 4 item instrument created specifically for the present study. This questionnaire was given to couples once during each session immediately prior to engaging in the problem solving discussions. The instructions to the questionnaire reminded participants, "You are about to have a conversation with your spouse in which you discuss the incident you chose to talk about." Participants were then asked to predict how well they thought their spouse would understanding their: (1) feelings, (2) thoughts, (3) motives, and (4) desires. Each of these areas for potential understanding was rated on a five point scale. To compute a composite score on this measure, individual scores were summed. This scale demonstrated good reliability with alpha coefficients of .85 for wives and .83 for husbands.

<u>Attributions</u>

After each of the 10 minute conversations, couples completed an open-ended attribution questionnaire in which they were asked to list between one and six possible explanations for their own behavior and between one and six possible explanations for their partner's behavior. The coding system for these attributions is described in more detail elsewhere (Sanford, 1999). In brief, every questionnaire was coded by three different undergraduate research assistants using a coding system that included attribution dimensions pertaining to blame, concurrence, and other more neutral categories not relevant to the present project. Each attribution that blamed the partner for negative behavior was given a blame score of +1, and each attribution that clearly excused the partner of blame was given a blame score of −1. Attributions were give a score of +1 for

concurrence any time the attribution given by an individual to explain his or her partner's behavior matched the attribution the partner gave to explain his or her own behavior. Occasionally, a concurrence score of –1 was given when an attribution fit the requirements for concurrence yet was phrased in a clearly sarcastic manner. Each individual attribution score was weighted in proportion to the total number of attributions listed on a questionnaire. Scores on each questionnaire were summed for blame and for concurrence producing four pairs of scores for each individual, one pair for each of the four conversations.

Measures of Marital Functioning

The Dyadic Adjustment Scale (DAS, Spanier, 1976) is a widely used 32 item questionnaire for assessing dyadic adjustment and includes questions pertaining to Satisfaction, Consensus, Affectional Expression, and Cohesion. This questionnaire has a reported internal reliability of .96 (Spanier, 1976) and a two week test retest reliability of .87 (Carey, Spector, Lantinga, & Krauss, 1993). Validation studies have found that the DAS adequately discriminates between distressed and non-distressed couples (Spanier, 1976; Eddy, Heyman, & Weiss, 1991).

The Areas of Change questionnaire (AOC, Weiss, Hops, & Patterson, 1973; Weiss & Birchler, 1975) asks participants to identify and rate areas where "I want my partner to change," and it contains 34 items that participants rate on a scale ranging from -3 to +3. The AOC questionnaire has a reported reliability of .88 (Weiss & Birchler, 1975) and discriminates between distressed and nondistressed couples (Birchler & Webb, 1977).

A participant's Schema of Partner Empathic Responding to Anger (SOPERA) was assessed using a 20 item Likert-type measure (Sanford, 1998). This questionnaire is intended to assess the degree to which a person remembers his or her spouse as being an empathic, understanding listener during marital conflict and at times when the respondent felt angry. The items include examples of empathic responding and non-empathic responding, all of which were rated on a five point scale. The questionnaire is scored so that a high score indicates greater endorsement of items describing one's partner as a good listener to angry feelings. Results based on data from the present sample indicate that this scale has adequate reliability and validity (Sanford, 1998).

Memory Accessibility of Partner Not Understanding (MAPNU) was assessed using an open response, four minute speeded test (Sanford, 1998). This instrument is intended to assess the degree to which a person has ready access to many specific memories of not feeling understood. The score for this measure is computed by simply summing the number of such memories a person recalls and reports in a four minute time period. Results based on data from the present sample indicate that this instrument has adequate reliability and validity (Sanford, 1998).

Results

Using Communication and Cognition to Predict Marital Outcomes

Data analysis focused on seven variables believed to be important predictors of marital outcomes: four dimensions of communication (Own Views, Response, Emotion, and Listening) and three types of cognition (Attributional Blame, Attributional Concurrence, and Expectancies). The first set of questions to be addressed had to do with

the extent to which these variables indeed predicted outcomes such as current marital functioning, divorce, and change in satisfaction over time. To investigate current marital functioning, correlations were computed between each predictor variable and four different measures of current marital functioning: DAS, AOC, SOPERA, and MAPNU. To provide additional information regarding the risk of type I error in these analyses, multivariate correlations were also computed by regressing each of the predictor variables onto the four measures of marital functioning. Both the univariate correlations and the multivariate correlations are reported in Table 4.2. Of the 56 univariate correlations listed in Table 4.2, it is notable that every single correlation is in the expected direction and that most correlations are both substantial and significant. Most of the multivariate tests also reached significance, although four tests fell slightly short of significance.

To determine the extent to which the seven predictor variables were predictive of divorce over a three-and-a-half year period, a series of t-tests were computed comparing the group of stable couples with the group of couples who divorced. The results of these analyses are reported in Table 4.3. Although these results need to be interpreted cautiously given that there are only four divorced couples in the sample, the magnitude of difference between the two groups was consistently substantial. On average, there was approximately one-and-a-half standard deviations of difference between the two groups. In addition, all t-tests, save the comparison regarding wives' scores on Concurrence, reached significance.

Table 4.2

Communication and Cognition Correlations with Current Marital Functioning

	Univariate Correlations[a]				Multivariate
	DAS	AOC	SOPERA	MAPNU	Correlation
Wives					
Own Views	.39**	-.38*	.30*	-.40**	.50^m
Response	.52**	-.52**	.39**	-.36*	.60**
Emotion	.55**	-.53**	.39**	-.30*	.61**
Listening	.61**	-.63**	.52**	-.23	.68**
Concurrence	.24	-.39**	.30*	-.38*	.47^m
Blame	-.31*	.46**	-.38**	.26	.48^m
Expectation	.66**	-.56**	.77**	-.37*	.78***
Husbands					
Own Views	.54**	-.56**	.47**	-.41**	.70***
Response	.50**	-.52**	.44**	-.50**	.69***
Emotion	.59**	-.50**	.45**	-.41**	.70***
Listening	.54**	-.50**	.38*	-.48**	.72***
Concurrence	.10	-.38**	.11	-.23	.45
Blame	-.43**	.27	-.51**	.45**	.62**
Expectation	.62**	-.33*	.53**	-.46**	.73***

Note. DAS = Dyadic Adjustment Scale; AOC = Areas of Change questionnaire; SOPERA = Schema of Partner Empathic Responding to Anger; MAPNU = Memory Accessibility of Partner Not Understanding.
[a] Significance levels for univariate correlations are based on one-tailed tests.
^{m} Marginal significance
* p < .05, **p < .01, *** p < .001

Table 4.3

Communication and Cognition Predicting Divorce

		Intact Couples (n = 30)		Divorced Couples (n = 4)		
		Mean	sd	Mean	sd	*t*-value
Wives						
	Own Views	.08	.57	-.99	.66	3.43***
	Response	.17	.60	-1.32	1.16	4.17***
	Emotion	.10	.70	-1.19	1.35	3.11**
	Listening	.12	.66	-.87	.83	2.73**
	Concurrence	.18	.13	.09	.06	1.32
	Blame	.15	.17	.34	.24	1.98*
	Expectancies	3.89	.66	3.16	.78	2.05*
Husbands						
	Own Views	.27	.63	-.99	.98	3.52***
	Response	.21	.71	-.82	.92	2.63**
	Emotion	.21	.60	-.78	.60	3.09**
	Listening	.22	.60	-1.17	.76	4.23***
	Concurrence	.23	.14	.09	.14	1.87*
	Blame	-.02	.24	.32	.13	2.76**
	Expectancies	3.88	.65	3.25	.90	1.74*

Note. Multivariate significance tests based on the above table were significant for both wives (multivariate $F_{(7, 26)} = 3.27$, $p < .05$) and husbands (multivariate $F_{(7, 26)} = 2.58$, $p < .05$).
* $p < .05$, ** $p < .01$, *** $p < .001$

To analyze the extent to which the seven predictor variables predicted change in satisfaction over 3.5 years, regression analysis was used. As previously mentioned, 27 couples in the study completed the Satisfaction subscale on the DAS at the 3.5 year follow-up assessment. Each predictor variable was entered into a regression equation predicting satisfaction at time two after controlling for satisfaction at time one. The standardized beta weights for each predictor variable, along with significance tests for each beta weight, are reported in Table 4.4. As was the case in predicting divorce, the communication codes produced robust results. Every communication code, except for husbands' Emotion, was a significant predictor of a person's change in satisfaction over 3.5 years. The results for attributions were mixed with Concurrence reaching significance for husbands and Blame reaching significance for wives. Notably, unlike the results predicting divorce, the results for Expectancies were non-significant. This is not entirely surprising, however, given that both the Partner Prediction Questionnaire and the DAS are self report rating scales which are highly correlated. After controlling for satisfaction at time one, there may not have been enough unique variance in the Partner Prediction Questionnaire to add detectable predictive power in predicting satisfaction at time two.

HLM Results

Hierarchical Linear Modeling was used to analyze relationships between communication and cognition across two levels of analysis: the level of the conversation and the level of the person. To do this, a standard HLM equation was constructed to be used in all analyses. For each of the three cognitive variables (attributional blame,

Table 4.4

Communication and Cognition Predicting Change in Marital Satisfaction

	Correlation	Standardized Beta[a]	t-value
Wives (n = 25)			
Own Views	.29	.43	3.74***
Response	.44	.39	3.18**
Emotion	.53	.33	2.38*
Listening	.55	.27	2.03*
Concurrence	.39	.24	1.71
Blame	-.48	-.27	1.88*
Expectation	.43	.12	0.73
Husbands (n = 22)			
Own Views	.68	.49	3.10**
Response	.56	.34	1.94*
Emotion	.55	.27	1.35
Listening	.58	.39	2.48*
Concurrence	.40	.42	2.88**
Blame	-.38	-.24	1.40
Expectation	.62	.30	1.67

[a] Controlling for satisfaction at time one

* p < .05, ** p < .01, *** p < .001

attributional concurrence, and expectancies), separate analyses were conducted to examine relationships with each of the four communication behaviors (Own Views, Response, Emotion, and Listening). The standard HLM equation that was used in all these analyses can best be explained by way of example.

Consider the case in which a single type of communication behavior observed during couples' conversations is used to predict a single type of attribution made after each of the conversations. The first step in constructing the standard HLM equation is to begin at the conversation level. At this level, the four communication variable scores derived from the four observed conversations <u>for a single person</u> are used to predict that person's own scores on the attribution variable. This could be done using a standard regression equation as follows:

$$y_{cp} = \beta_{0p} + \beta_{1p}x_{cp} + e_{cp} \qquad \text{[equation 1]}$$

In equation 1, the dependent variable (y_{cp}) is the score on attribution variable "y" made immediately after conversation "c" for person "p." The intercept (β_{0p}) is the average attribution score for person "p." The slope (β_{1p}) is the expected change in attribution score for person "p" given a one unit increase on the communication variable "x" as assessed in conversation "c" for person "p." Notably, in this equation, scores on the communication variable "x" are centered within persons; thus, the slope (β_{1p}) pertains only to variance within persons. The error term (e_{cp}) is the residual variance in the attribution variable for each conversation "c" within person "p." Notably, at the level of the conversation, the parameters pertain to within-person variance, and thus, they can vary from one individual to the next.

The next step in creating a standard HLM equation is to define two different person level equations for predicting conversation level parameters. In contrast to the conversation level equations previously discussed, parameters in the person level equations will apply to the population of persons as a whole, and as such, they will not vary from one individual to the next. It is possible to define one person level equation for predicting the intercept in the conversation level equation, and to define one person level equation for defining the slope in the conversation level equation. These two person level equations are as follows:

$$\beta_{0p} = \gamma_{00} + \gamma_{01}x_p + u_{0p} \qquad \text{[equation 2]}$$

$$\beta_{1p} = \gamma_{10} \qquad \text{[equation 3]}$$

Equation 2 is a standard linear regression equation. The dependent variable (β_{0p}) is the conversation level intercept for person "p" from equation 1. In other words, the dependent variable is the average score, across four assessments, on the attribution variable for person "p." In this equation, the person level intercept (γ_{00}) is the population grand mean. That is, it is the average score on the attribution variable across the entire population of people. Similarly, the person level slope (γ_{01}) is the average slope across the entire population of people. In equation 2, the slope is multiplied by the average score, across four assessments, on the communication predictor variable "x" for person "p." The error term (u_{0p}) represents the variance in communication between people that is unexplained by the communication predictor variable.

Finally, in equation 3, the slope in the conversation level equation (β_{1p}) is simply constrained to be equal to the average slope across the entire population of people (γ_{10}).

Notably, in HLM, it is possible to predict variance in slopes across people; however, this was not necessary given the issues at hand in the present study.

Having defined equations at both levels of analysis, it is now possible to put them together. The conversation level equation and the two person level equations can be combined into a single HLM equation as follows:

$$y_{cp} = \gamma_{00} + \gamma_{01}X_p + \gamma_{10}X_{cp} + u_{0p} + e_{cp} \qquad \text{[equation 4]}$$

where:

- y_{cp} is the attribution outcome in conversation "c" for person "p."

- γ_{00} is the grand mean for the attribution score.

- γ_{01} is the slope for the person level communication scores, with each score being a person's average score across four conversations.

- γ_{10} is the average within-person slope regarding the degree to which individual communication scores predict individual attribution scores.

- $u_{0p} + e_{cp}$ is the unexplained variance at the level of the person and at the level of the conversation respectively.

To analyze the data in the present study, the HLM statistical program (Bryk, Raudenbush, & Congdon, 1998) was used to provide estimates for the parameters in equation 4 as well as significance tests for those estimates. To aid in the interpretation of results, all variables were standardized prior to analysis. The two parameters which are most important vis-à-vis the aims of the present study are γ_{01} and γ_{10}, which represent the person level effect and the conversation level effect respectively.

The HLM results pertaining to attributional blame are reported in Table 4.5. In separate analyses, each of the four communication codes was used to predict post-

Table 4.5

HLM Coefficients for Communication Predicting Attributional Blame

	Attributional Blame			
	Person Level		Conversation Level	
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	-.29*	-.51**	-.05	.11
Response	-.26*	-.59***	.00	-.18
Emotion	-.19	-.50**	.09	.00
Listening	-.25*	-.55**	.02	.07
Partner Behavior				
Own Views	-.26*	-.67***	.01	.01
Response	-.24*	-.53***	.06	-.05
Emotion	-.27*	-.40**	.19	.02
Listening	-.25*	-.52**	.03	.06

Note. See Appendix B (Table A.1) for the proportion of variance explained at each level of analysis.

* $p < .05$, ** $p < .01$, *** $p < .001$ (one tailed)

conversation attributional blame, and analyses were conducted for wives and husbands separately. In addition to using one's own behavior to predict one's own attributions, a second set of analyses were conducted using partner communication behavior to predict one's own attributions. These results are also reported in Table 4.5. Overall, there was a strikingly consistent pattern in which the person level effects were substantial and significant and the conversation level effects were substantially smaller, close to zero, and non-significant. Notably, there appeared to be a trend for the person level coefficients to be larger for husbands than for wives.

The HLM results pertaining to attributional concurrence are reported in Table 4.6. In separate analyses, each of the four communication codes was used to predict post-conversation attributional concurrence, and analyses were conducted for wives and husbands separately. Recall that, for attributional concurrence, specific hypotheses were formulated stating that both partner communication behavior and one's own listening behavior would predict concurring attributions at the level of the conversation. The results in Table 4.6 partly support this prediction, especially for husbands. That is, partner Own Response, partner Emotion, partner Listening, and self Listening all predicted concurring attributions for husbands at the level of the conversation. This means that husbands were most likely to make a concurring attribution after a conversation if, during the conversation, the wife utilized positive forms of Response, Emotion, and Listening and if the husband used positive forms of Listening. Notably, in predicting concurring attributions for wives, only the husbands' Own Views score was significant at the level of the conversation. At the level of the person, for both husbands

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Table 4.6

HLM Coefficients for Communication Predicting Attributional Concurrence

	Attributional Concurrence			
	Person Level		Conversation Level	
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	.25*	.37**	.01	.11
Response	.26*	.40**	-.01	.16
Emotion	.25*	.31*	.01	.19
Listening	.30*	.42**	.09	.32*
Partner Behavior				
Own Views	.18	.47**	.29*	-.04
Response	.17	.31*	.17	.43**
Emotion	.16	.25*	.19	.24*
Listening	.16	.42**	.04	.31*

Note. See Appendix B (Table A.2) for the proportion of variance explained at each level of analysis.

* $p < .05$, ** $p < .01$, *** $p < .001$ (one tailed)

and wives, one's own traits regarding communication were predictive of one's own traits regarding attributional concurrence. However, partner traits regarding communication were only significant in predicting the husbands' traits regarding attributional concurrence.

The relationship between cognitive expectancies and communication was analyzed using the same HLM equation as was used in the previous analyses. However, unlike attributions, which were assessed after each conversation, expectancies were assessed prior to each conversation. Thus, in the analyses regarding cognitive expectancies, communication became the outcome variable and expectancies became the predictor variable. In separate analyses, the pre-conversation cognitive expectancies variable was used to predict each of the four communication variables, and analyses were conducted for wives and husbands separately.

The HLM results regarding cognitive expectancies are reported in Table 4.7. Recall that hypotheses were formulated stating that expectancies would predict both one's own communication and partner communication at the level of the conversation. For wives, this hypothesis was supported. At the level of the conversation, more than half the coefficients for wives were significant, many were substantial, and all were in the expected direction. Thus, the pre-conversation cognitive predictions that wives made regarding their husbands' behavior was predictive, not only of their husbands' actual behavior in the conversation (including Response and Listening), but also of their own behavior in the conversation (including Own Views, Response, and Emotion). The results regarding husbands' expectancies, however, were strikingly different. With only

Table 4.7.

HLM Coefficients for Cognitive Expectancies Predicting Communication

	Cognitive Expectancies			
	Person Level		Conversation Level	
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	.44*	.44*	.65*	.17
Response	.47*	.51*	.35*	-.09
Emotion	.58*	.34*	.58*	.09
Listening	.50*	.33*	.36 ^{m}	.06
Partner Behavior				
Own Views	.40*	.23*	.06	.08
Response	.43*	.33*	.32*	-.01
Emotion	.43*	.30*	.29 ^{m}	.46*
Listening	.47*	.26*	.52*	.17

Note. See Appendix B (Table A.3) for the proportion of variance explained at each level of analysis.

^{m} Marginal significance

* $p < .05$, ** $p < .01$, *** $p < .001$ (one tailed)

one exception, the conversation level effects for husbands were consistently close to zero, non-significant, and substantially smaller in magnitude that the overall effects observed for wives. In contrast to wives, the pre-conversation cognitive predictions that the husbands made regarding their wives' behavior predicted very little of what actually transpired in the conversation. The one exception was that husbands' pre-conversation cognitive predictions did predict wives' emotional expression in the conversation. Notably, in contrast to apparent gender difference observed at the conversation level, the person level effects were consistently strong and significant for both wives and husbands. That is, both partner traits regarding cognitive expectancies and one's own traits regarding cognitive expectancies were predictive of one's own traits regarding communication behavior.

Discussion

In his previous longitudinal work, Gottman (1994) has reported that the ways couples communicate when resolving conflicts is predictive of whether they stay together or divorce. The present study, conducted in a separate laboratory using a slightly modified version of Gottman's coding system, produced similar findings. Not only did all of the communication codes considered in the present study significantly predict divorce, but there was on average about 1.5 standard deviations of difference between the couples who stayed together and couples who divorced. Notably, Karney and Bradbury's (1995) review of longitudinal marital research suggests that other studies specifically using communication to predict divorce have typically produced smaller effect sizes. Although the magnitude of difference observed in the present study needs to be

interpreted cautiously given that the standard error is large, the results clearly build on Gottman's work by suggesting that the relationship between communication behavior and divorce is robust.

The present study also expanded on Gottman's agenda by using communication to predict change in satisfaction over time. Specifically, each of the communication codes were used to predict satisfaction at time two after controlling for satisfaction at time one. The results were surprisingly powerful. In spite of the small sample size, almost all of the communication codes significantly predicted change in satisfaction for both husbands and wives, and moreover, many of the beta weights were quite substantial. Not only did communication predict important longitudinal outcomes, but also it produced strong correlations with several measures of concurrent marital functioning. This included established measures of marital satisfaction as well as two new measures proposed by Sanford (1998) regarding: (1) memories of partner empathic responding to anger and (2) the speed with which a person can access memories of times when his or her partner was not understanding. What can be concluded, then, is that there is a growing body of evidence that communication is of primary importance in understanding marital process.

The present study also builds on previous research regarding attributions in marriage. Fincham and Bradbury (1987) found that attributions of responsibility, as assessed via a composite rating scale which included attributional blame, significantly predicted change in satisfaction over a one-year period for wives. The present study assessed attributional blame using an open-ended questionnaire and produced a similar finding over a 3.5-year period. Specifically, attributional blame predicted change in

satisfaction for wives, yet fell short of significance for husbands. Moreover, the present study supports previous research suggesting strong correlations between attributions of blame and other measures of concurrent marital functioning (Bradbury and Fincham, 1990), and it expands on this line of research by demonstrating that attributions of blame are predictive of divorce for both husbands and wives.

Having demonstrated that both communication and attributional blame are important predictors of both concurrent marital functioning and longitudinal marital outcomes, the present study was then able to use HLM to investigate the relationship between these two predictor variables across two levels of analysis. The results strongly supported a person level relationship, yet provided no evidence for a conversation level relationship. This fits with Gottman's (1994) model in which attributions are conceptualized as a trait-like variable, established over time as a consequence of general patterns in communication behavior. In other words, it appears that blaming attributions have little to do with the unique communication behaviors that occur in a single, isolated, conversation, yet they have much to do with habitual patterns in communication that occur over time. It is important to note, however, that in the present study, attributions were assessed after each conversation and not before conversations. Although pre-conversation attributions and post-conversation attributions would be expected to be highly correlated, it will be important for future research to determine whether it makes a difference when attributions are assessed. For example, it remains possible that pre-conversation attributions could influence communication at the level of the conversation even if communication does not influence post-conversation attributions at the level of the conversation.

In addition to investigating blaming attributions, the present study introduced the concept of concurrent attributions. Concurring attributions were found to be related to measures of current marital functioning, change in satisfaction over time, and divorce. Although the magnitude of the observed effects and the frequency of significant results tended to be slightly less for concurring attributions than for some of the other variables considered in this study, certainly there was enough evidence to suggest that concurrence is an important variable for understanding marital process. More importantly, the present study provided evidence suggesting that concurring attributions may function differently than blaming attributions. Whereas partner cooperation is not needed in order to make a blaming attribution, it would seem difficult to make a concurring attribution, that is, to agree with the partner's viewpoint, unless the partner communicates his or her viewpoint well and unless oneself listens to that viewpoint well. Along this line, the results of this study provided partial support for the importance of conversation level communication behavior in predicting concurring attributions, especially for husbands.

One of the key findings of the present study was that different forms of cognition appear to have distinct functions across multiple levels of analysis. Not only was this true in comparing blaming attributions with concurring attributions, but even more striking were the results pertaining to cognitive expectancies. Like attributional blame, the present study found expectancies to produce strong correlations with other measures of concurrent marital functioning and to predict divorce, although notably the findings were not significant when expectancies were used to predict change in satisfaction over time. Overall, the results support the suggestion made by Baucom, Epstein, Sayers, and Sher (1989) that expectancies are important for understanding marital process.

Moreover, the HLM results suggest that, unlike attributional Blame which appears to function primarily at a trait level, wives' expectancies have a powerful effect on conversation level communication behavior. Specifically, the results suggest that a wife's prediction about what her husband is likely to do in an upcoming conversation is highly predictive of both her own behavior and her husband's behavior in that actual conversation. Moreover, there was a striking contrast between the conversation level effects for wives, most of which were significant and many of which were quite substantial, and the conversation level effects for husbands, which, with one exception, were all close to zero and non-significant. This finding is particularly interesting in light of Gottman's (1994) suggestion that, "wives are much more likely than husbands to take responsibility for regulating the affective balance and keeping the couple on problem-solving task during the problem-area marital interaction" (p. 108). These results suggest that a wife's pre-conversation expectancies might serve a crucial function in determining whether she will effectively carry out the task of regulating a conversation.

Notably, the one exception where husbands' expectancies did predict a conversation level outcome was when husbands' expectancies were used to predict wives' emotion. That is, a husband's prediction about what his wife is likely to do in an upcoming conversation is predictive of his wife's positive versus negative emotion displayed in that actual conversation. It is not entirely clear why a substantial effect was produced for wives' emotion when all the other conversation level effects for husbands' expectancies were close to zero and non-significant. In light of Gottman's (1994) suggestion that husbands are particularly sensitive to becoming flooded by negative emotion in their partners, it may be that husbands tend to be keenly aware of which

conversation topics are likely to produce negative emotion in their partners. Given that this particular finding was not predicted, however, it should be interpreted cautiously until it can be replicated in future research.

As a whole, the results of the present study could possibly shed light on other research regarding outcomes in clinical interventions for couples. Although cognitions have long been established as important in marriage, clinical outcome research has failed to demonstrate that a standard couples communication training intervention can be improved with the addition of a cognitive component (e.g., Baucon, Sayers, & Sher, 1990). The results of the present study, however, raise the possibility that cognitive interventions may become more effective if clinicians take into account the ways in which different cognitions serve different functions across different levels of analysis. For example, if a clinician is attempting to change behavior in the context of specific conversation, it may be more effective to target the wife's expectancies than to target attributions of blame made by the wife or by the husband.

Although the magnitude and consistency of many of the findings in the present study are certainly promising, there are a number of issues that could not be addressed by this study. Notably, the sample used was small. Thus, the range of possible sampling error is large. It is also notable that expectancies were assessed via a structured rating scale and that attributions were assessed via an open-response questionnaire. This leaves open the possibility that differences between expectancies and attributions could reflect differences between responses to structured rating scales and responses to open-response questionnaires. In addition, it would be useful for further research to compare the variables used in the present study with other similar variables commonly used within

other marital research. For example, the open-ended attribution measure used in the present study would be expected to correlate with other structured attribution questionnaires, but this has not been empirically tested.

Overall, the key role of the present study was to call attention to issues regarding levels of analysis in research on marital process and to demonstrate how HLM can be used to address these issues. Although previous research has indicated strong correlations between cognitive variables and communication variables in marriage, traditional statistical methods have a limited ability to provided information on the ways in which these variables actually relate to each other. The present study demonstrated the ways in which HLM can be used to tease apart the extent to which a relationship between two variables is best understood as being covariance between two traits and/or a direct relationship that can be observed in the context of a single conversation. Attributional blame, attributional concurrence, and expectancies were all found to predict communication behavior at a trait level, but not all of these variables appear to function at the conversation level. By far, the strongest conversation level predictor was wives' pre-conversation expectancies. In addition, there was partial support for attributional concurrence also functioning at the conversation level. Taken together, the present study takes an initial step in a research agenda seeking to identify and clarify the sets of variables that function at the level of the conversation and the sets of variables that function at a trait level. This in turn will have important implications both for theories of marital process as well as strategies for clinical intervention.

CHAPTER 5

Predictors of Speaking Turn Variance

In addition to Gottman's (1994, 1993) comprehensive cascade model of marital process, he has conducted a considerable amount of work analyzing communication behavior at the level of the speaking turn. Recently, Gottman has been working with James Murray, an applied mathematician at University of Washington who specializes in biological mathematical modeling. They have suggested that marital interaction at the level of the speaking turn can be best understood by considering three key variables: uninfluenced steady state, inertia, and influence (e.g., Cook, et. al., 1995; Gottman, Swanson, & Murray, 1999).

The uninfluenced steady state is a person's natural way of behaving when not influenced by his or her partner. They define it as a person's base rate response when the partner's previous response represents a score of zero. Conceptually, it is the portion of behavior that is uninfluenced by the immediate context of a particular speaking turn in a particular conversation. This could include that which a person brings to a conversation as event level "spillover" from an immediately preceding interaction, and also that which the person brings to the conversation in the form of person level traits and characteristics. The second important variable pertaining to speaking turn level analysis is inertia. This represents the extent to which a person tends to continue behaving in a manner that is similar to his or her behavior during his or her immediately preceding speaking turn. In other words, it is the degree to which a person is likely to continue a particular behavior from one turn to the next. The third important variable pertaining to speaking turn level

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analysis is partner influence. This simply represents the extent to which a person is influenced by the preceding behavior of his or her partner. Taken together, uninfluenced steady state, inertia, and partner influence may all be important predictors of communication processes that operate at the speaking turn level.

Gottman, Swanson, and Murray (1999) suggest that these three variables can be modeled using the following equations:

$$W_{t+1} = a + r_1 W_t + I_{HW}(H_t)$$

$$H_{t+1} = b + r_2 H_t + I_{WH}(W_t)$$

where:

- W_{t+1} is the wife's speaking behavior on turn t + 1; and H_{t+1} is the husband's speaking behavior on turn t + 1.

- **a** is the wife's uninfluenced steady state; and **b** is the husband's uninfluenced steady state.

- r_1 is the inertia from the wife's behavior on turn t (W_t); and r_2 is the inertia from the husband's behavior on turn t (H_t).

- I_{HW} is the husband to wife influence from the husband's behavior on turn t (H_t); and I_{WH} is the wife to husband influence from the wife's behavior on turn t (W_t).

In many ways, these equations are similar in form to a basic regression equation. Along this line, consider the comparison depicted below.

Gottman's equations:

$$W_{t+1} = a + r_1 W_t + I_{HW}(H_t)$$

$$H_{t+1} = b + r_2 H_t + I_{WH}(W_t)$$

Regression equation format:

$$w_{t+1} = \beta_0 + \beta_1 w_t + \beta_2 h_t + e$$

$$h_{t+1} = \beta_0 + \beta_1 h_t + \beta_2 w_t + e$$

Both Gottman's equations and the regression equations are designed to predict a person's communication behavior on a particular speaking turn (arbitrarily labeled turn t + 1). Both equations are using both a person's own communication behavior from an immediately preceding turn and partner communication behavior from an immediately preceding turn to predict this outcome. In comparing Gottman's equations to regression equations, the uninfluenced steady state (i.e., "a" or "b") could be considered analogous to an intercept. The inertia (i.e., "r_1" or "r_2") could be considered analogous to a beta weight for a person's observed behavior on his or her previous speaking turn. The influence function (i.e., "I_{HW}" or "I_{WH}") could be considered analogous to a beta weight for the partner's observed behavior on the previous speaking turn.

In spite of these similarities, there are some important distinctions between Gottman's equations and standard regression equations. First, Gottman uses the term "uninfluenced steady state" instead of "intercept" with the assumption that a person's behavior is uninfluenced when the score for the partner's preceding behavior is zero. What this means in practice, is that to calculate a person's uninfluenced steady state, Gottman only uses speaking turns where the partner's preceding behavior was given a score of zero. One notable difficulty in this practice is that marital coding scales can not be reasonably assumed to be ratio level scales. Thus, it is questionable whether a score of zero truly represents zero influence.

A second distinction between Gottman's equations and regression equations is that Gottman's equations are deterministic and not statistical. That is, there is no allowance for error variance. There is nothing analogous to "+ e" in Gottman's

equations. This means that it is not possible to statistically test the extent to which results based on a sample are actually representative of a population. In deterministic models, the results are simply assumed to represent the population perfectly. As Gottman notes, one value of deterministic models is that they can serve an important heuristic function by suggesting hypotheses that can be tested using statistical techniques.

A final distinction between Gottman's equations and standard regression equations is that Gottman's partner influence function is conceptualized as being non-linear. In Gottman's models, each speaking score for a person is first predicted using only uninfluenced steady state and inertia. Then the residuals from this estimation are plotted on a graph with the residuals on one axis and the scores from the partner's preceding turn on the other axis. A non-linear function is then fitted to this graph using least squares estimation.

Gottman's use of deterministic mathematical modeling is interesting and complex, and it has allowed him to explore some fascinating research questions such as whether the influence function has a different shape for distressed couples than it does for non-distressed couples. For the purposes of the present project, Gottman's research is relevant to the extent that it can be used to generate hypotheses about predictors of communication behavior at the level of the speaking turn. Thus, the goal of the present project is not so much to replicate Gottman's deterministic mathematical modeling equations as it is to use his research as a resource in generating hypotheses about marital process that can be tested using statistical methods.

Along this line, the present analysis will involve three constructs whose definitions have been heavily informed by the voice of Gottman's theory. The first

construct will be called steady state. This will be analogous to the *uninfluenced* steady state variable in Gottman's model; however, no assumptions will be made regarding whether a score of zero actually represents zero influence. Thus, it will simply represent the person's average mode of communication behavior across all turns and across all conversations. The second construct will be inertia. As in Gottman's model, this will be the extent to which a person's previous behavior predicts his or her subsequent behavior. The final construct will be partner influence. Although the general concept will remain the same as in Gottman's model, no attempts will be made to use deterministic, non-linear functions to represent this variable. Instead, it will simply reflect the extent to which partner behavior influences subsequent self behavior.

Specific Relationships Between Speaking Turn Level Variables

Before actually investigating these three constructs, it is necessary to first establish some operational definitions. A key issue, here, is whether it is possible to analyze distinct types of communication behavior or if communication behavior is better conceptualized as a global construct falling along a single positive/negative axis. Notably, both in Gottman's research and in the present project, communication behavior was coded on multiple dimensions. However, in Gottman's work with deterministic mathematical models, he typically combines all his codes into a single, global dimension. Thus, his three variables, uninfluenced steady state, inertia, and partner influence, are all based on global, composite communication scores and not individual, specific dimensions of communication. Yet, if there are important distinctions between the different dimensions of communication used both in Gottman's research and in the present project, then it may not make sense to simply combine all the codes into a single

dimension. For example, it may be possible to create a separate equation for each type of communication behavior.

Along this line, the following discussion explores ways of defining steady state, inertia, and partner influence such that distinctions between the different types of communication codes can be maintained. Specifically, distinctions will be made between the four communication codes used in the present project: Own Views, Response, Emotion, and Listening. Unfortunately, the price we must pay in order to keep these dimensions distinct is that the following discussion will become unavoidably complex. It will involve describing sequences of communication behavior across multiple speaking turns while at the same time making distinctions between different communication codes that are coded for the speaker and for the listener on each speaking turn.

Given the complexity that will be involved in creating operational definitions for these variables, I will begin by establishing some definitions. Imagine taking any arbitrary sequence of four speaking turns from a conversation. These turns will be arbitrarily labeled turn t-3, turn t-2, turn t-1, and turn t, for the first, second, third, and fourth turns in the sequence respectively. In addition, one person in the couple will be arbitrarily selected to be a target individual. The target individual will be called "self" and the partner of the target individual will be called "partner." Table 5.1 defines the specific codes that are assigned to both the self and the partner on each lag of the four turn speaking sequence.

Table 5.1

Definitions of Events Taking Place on Each Speaking Turn Lag

	turn t-3	*turn t-2*	*turn t-1*	*turn t*
roles	self listening partner speaking	self speaking partner listening	self listening partner speaking	self speaking partner listening
self codes	listening	own views response emotion	listening	own views response emotion
partner codes	own views response emotion	listening	own views response emotion	listening

Table 5.1 provides specific definitions for the events that take place on turn t-3, turn t-2, turn t-1, and turn t. The row in the table entitled "roles" provides definitions specifying which partner is listening and which partner is speaking on each of the four lags. For example, on the final lag, turn t, the individual labeled "self" is speaking and the individual labeled "partner" is listening. Recall from the descriptions of the communication coding dimensions that, for each turn, the speaker is coded on three dimensions (Own Views, Response, and Emotion) and the listener is coded on one listening dimension. On Table 5.1, the row entitled "self codes" identifies which codes will be coded for the target individual on each lag of the four turn sequence. Similarly, the row entitled "partner codes" identifies which codes will be coded for the partner on each lag of the sequence. Thus, in the final lag, turn t, the target individual will be

speaking and will be coded on dimensions of Own Views, Response, and Emotion. On this final lag, the partner will be listening and will be coded only on a single listening dimension.

Having provided a set of definitions regarding the events occurring in each turn of an arbitrary four lag sequence, it is possible to discuss specific ways of assessing variables pertaining to inertia and influence. I will begin by discussing influence. Keeping with the definitions of "partner" and "self" given above, influence could be defined as the degree to which immediately preceding partner behavior influences self behavior. In looking at Table 5.1, it is notable that partner influence could be operationalized in the context of two lag sequence. For example, partner influence could include the extent to which partner speaking on turn t-1 influences self speaking on turn t. Notably, in some circumstances, it might also be possible to consider partner influence in the context of a zero-lag sequence. For example, it might be reasonable to suggest that partner speaking on turn t-1 may influence self listening also on turn t-1.

In contrast to partner influence, inertia would be best operationalized in the context of a sequence spanning three lags. Inertia could be defined as the extent to which self behavior from a preceding turn tends to continue on a subsequent turn, and in looking at Table 5.1, it is notable that a person never receives the same set of codes on two adjacent turns. If a person receives speaking codes on one turn, he or she will receive listening codes on the next turn. This is why it is necessary to observe three lags in order to assess inertia. Self speaking inertia would be the extent to which self speaking on turn t-2 predicts self speaking on turn t. Self listening inertia would be the extent to which self listening on turn t-3 predicts self listening on turn t-1.

In summary, Table 5.1 can be used to map out different potential ways for defining inertia and for defining partner influence. Given that there are four different types of communication codes being used, it is possible to ask the question: which specific codes are the best predictors of which specific outcomes? In considering inertia, where self behavior is used to predict self behavior, the answer would seem to be fairly straight forward. The strongest relationship would be expected between two variables drawn from the same code. For example, it would be expected that own views on turn t-2 will predict subsequent own views on turn t better than any other code for turn t.

In the case of partner influence, a slightly different pattern would be expected. Specifically, reciprocal relationships would be expected between speaking and responding and also between speaking and listening. For example, the way in which a partner expresses his or her Own Views would be expected to predict the way in which the target individual responds to and listens to those views. That is, partner Own View should be the best predictor of both self Response and self Listening. Conversely, the way in which a person expresses his or her own views is expected to be determined by the extent to which the partner has been receptive and responsive on previous turns. If the partner is being defensive and listening poorly, then the target individual would be expected to resort to more negative expressions of his or her own views. Thus, both partner Response and partner Listening would be expected to be the best predictors of self Own Views. Notably, the expected outcome for the emotion code would be more straight forward. In line with Gottman's (1994) notion of negative escalation, it is likely that couples sometimes engage in interactions where they reciprocate each others negative affect. The target individual may show more negative emotion in response to a

partner who is showing negative emotion. Notably, it is also possible that couples will sometimes reciprocate positive affect as well. Taken together, this line of reasoning would suggest that the best predictor of self Emotion will be partner Emotion on the preceding turn.

The reasoning outlined in this discussion led to the following hypotheses:

Hypothesis 1: *Self own views on turn t will be best predicted by partner response on turn t-1 and by self own views on turn t-2.*

Hypothesis 2: *Self response on turn t will be best predicted by partner own views on turn t-1 and by self response on turn t-2.*

Hypothesis 3: *Self emotion on turn t will be best predicted by partner emotion on turn t-1 and by self emotion on turn t-2.*

Hypothesis 4: *Self listening on turn t-1 will be best predicted by partner own views on that same turn (t-1) and by self listening on turn t-3.*

Essentially, these hypotheses can be viewed as tests of discriminant validity for the four different coding dimensions. If the four coding dimensions are all valid indicators of four distinct dimensions as defined previously, then these hypotheses should be confirmed. An alternate hypothesis, of course, is that the four different coding dimensions are really all tapping the same underlying construct and that they are not actually distinct from each other. If this were the case, then the indicators self inertia and partner influence might still predict speaking turn level outcomes in general; however, there would be no distinctive pattern between predictors and outcomes.

Procedures

To investigate these hypotheses, it was necessary to be able to examine communication sequences ranging from zero to three lags in length. Note that, although Table 5.1 defines a sequence of four lags, in actuality, it is never necessary to use more that three lags to operationalize variables pertaining to inertia and partner influence. Along this line, each conversation was broken down into units consisting of three speaking turns each. The final turn in each three lag unit was arbitrarily designated as the target turn, and codes for this turn were used as the outcome variables. Notably, this means that for any given individual, half of the units will end with a target turn involving speaking codes and half of the units will end with a target turn involving the listening code. Thus, units could represent either a sequence running from lag t-2 to lag t, or a sequence running from lag t-3 to lag t-2 depending on whether the target person is listening or speaking in the final lag.

Results

Relationships Between Four Codes

To analyze the relationships between speaking turn level variables, a series of HLM equations were estimated. For each of the three speaker codes (Own View, Response, and Emotion), one equation was used to test codes pertaining to inertia and a separate equation was used to test codes pertaining to partner influence. The influence equation used partner own views, partner response, and partner emotion on turn t-1 to predict each of the outcomes on turn t. The inertia equation used self scores for own views, response, and emotion on turn t-2 to predict each of the outcomes on turn t. These

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analyses were limited to explaining within conversation variance – that is, predictor variables were centered within conversations. The two basic equations that were used are depicted below.

$$Y_{tj} = B_0 + B_1 (PV_{t-1j}) + B_2 (PR_{t-1j}) + B_3 (PE_{t-1j}) + U + R + E$$

$$Y_{tj} = B_0 + B_1 (SV_{t-2j}) + B_2 (SR_{t-2j}) + B_3 (SE_{t-2j}) + U + R + E$$

where:

- Y_{tj} is the outcome behavior on turn t for person j.

- B_0 is the overall grand mean on the outcome behavior variable.

- B_1 is the coefficient for either Partner Views on turn t-1 for person j (PV_{t-1j}) or Self Views on turn t-2 for person j (SV_{t-2j}).

- B_2 is the coefficient for either Partner Response on turn t −1 for person j (PR_{t-1j}) or Self Response on turn t-2 for person j (SR_{t-2j}).

- B_3 is the coefficient for either Partner Emotion on turn t-1 for person j (PE_{t-1j}) or Self Emotion on turn t-2 for person j (SE_{t-2j}).

- $U + R + E$ represent unexplained variance between people, between conversations, and within conversations respectively.

Results from this analysis are listed in Table 5.2. The results on the left columns of the table report the results for partner influence, that is the degree to which partner behavior on turn t-2 influences self behavior on turn t. The results in the right columns of the table report the results for inertia, that is the degree to which self behavior on turn t-2 predicts self behavior on turn t. In looking at partner influence, the results show a

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Table 5.2

HLM Coefficients for Predicting Own Views, Response, and Emotion

| | Influence | | | Inertia | | |
| | Partner t-1 | | | Self t-2 | | |
	Own View	Response	Emotion	Own View	Response	Emotion
Wives						
Own Views	-.05*	.17***	.03	.28***	-.02	.06*
Response	.22***	.05*	.05*	.04	.21***	.04
Emotion	.04	.05	.33***	.02	.03	.25***
Husbands						
Own Views	-.02	.18***	.05*	.30***	.01	.07**
Response	.24***	-.02	.09**	.02	.15***	.08**
Emotion	.05*	.02	.26***	.07**	.06**	.19***

Note. See Appendix B (Table A.4) for the proportion of variance at the level of the speaking turn explained by these equations.

* $P < .05$, ** $P < .01$, *** $P < .001$

striking pattern that supports the validity of the three codes. As would be expected, for both wives and husbands, partner Own Views had the greatest influence on self Response, whereas Partner Response had the greatest influence on self Own Views. Partner Emotion had the greatest influence on self Emotion.

In looking at inertia, the results again show the expected pattern that supports the validity of the codes. That is, for both wives and husbands the highest coefficients are between two measures of the same construct across two occasions. These results support Hypotheses 1, 2, and 3.

Notably, the analyses reported above did not include variables pertaining to listening. This is because the analyses of influence and inertia for the listening codes required the use of slightly different equations. In these equations, both listening codes and speaking codes were used together. Given that listening codes for an individual person were not assessed on the same turn as the speaking codes, predictors within each individual equation were taken from more than one lag in the sequence. This means that some predictors will be more proximal in time to the target outcome and that others will be more distal. Thus, by adding listening to the analysis a potential confound is added as well. However, this concern was not judged to be so extensive as to preclude analysis.

The actual equations used to analyze listening are as follows:

$$Y_{t-1j} = B_0 + B_1 (PV_{t-1j}) + B_2 (PR_{t-1j}) + B_3 (PE_{t-1j}) + B_4 (PL_{t-2j}) + U + R + E$$

$$Y_{t-1j} = B_0 + B_1 (SV_{t-2j}) + B_2 (SR_{t-2j}) + B_3 (SE_{t-2j}) + B_4 (SL_{t-3j}) + U + R + E$$

where:

- Y_{t-1j} is the outcome behavior on turn t-1 for person j (notice that for the listening outcome variable, turn t-1 is used rather than turn t).

- B_0 is the overall grand mean on the outcome behavior variable.

- B_1 is the coefficient for either Partner Views on turn t-1 for person j (PV_{t-1j}) or Self Views on turn t-2 for person j (SV_{t-2j}).

- B_2 is the coefficient for either Partner Response on turn t −1 for person j (PR_{t-1j}) or Self Response on turn t-2 for person j (SR_{t-2j}).

- B_3 is the coefficient for either Partner Emotion on turn t-1 for person j (PE_{t-1j}) or Self Emotion on turn t-2 for person j (SE_{t-2j}).

- B_4 is the coefficient for either Partner Listening on turn t-2 for person j (PL_{t-2j}) or Self Listening on turn t-3 for person j (SL_{t-3j}).

- $U + R + E$ represent unexplained variance between people, between conversations, and within conversations respectively.

Results from this analysis are listed in Table 5.3. With the aforementioned caveat in mind regarding the potential confound in time, it is notable that the results do indeed reveal the expected trend. Listening behavior on turn t-1 was best predicted by partner own views on turn t-1 and by one's own listening on turn t-3. Notably, the results are not as clean as the results for the speaker codes. For example, husband listening on turn t-3 predicted subsequent listening on turn t-1 essentially as well as the more proximal response code from turn t-2. On the whole, however, these results supported Hypothesis 4.

Table 5.3

HLM Coefficients for Predicting Listening

	Own View	Response	Emotion	Listening
Wife				
Inertia (Self variables)	-.01	.10***	.09***	.25***
Influence (Partner variables)	.41***	.00	.17***	.03
Husband				
Inertia (Self variables)	.02	.13***	.09***	.16***
Influence (Partner variables)	.30***	-.03	.15***	.03

Note. See Appendix B (Table A.4) for the proportion of variance at the level of the

speaking turn explained by these equations.

*** P < .001

Base Rate, Influence, and Inertia

       The previous results regarding relationships between speaking turn level

communication codes serve to address the question of whether the constructs of inertia,

partner influence, and base rate should be defined in terms of distinct types of

communication behavior or whether they are better conceptualized as more global

constructs simply representing a single positive/negative axis. Specifically, the results

just reported indicated that it is possible to make valid distinctions between the

communication behavior codes: Own Views, Response, Emotion, and Listening. Thus, it

would be reasonable to create distinct operational definitions for each different communication code regarding inertia, partner influence, and base rate. For example, inertia for Own Views would be the extent to which self Own Views on turn t-2 predicts self Own Views on turn t. Inertia for Response would be the extent to which self Response on turn t-2 predicts self Response on turn t. Base rate for Own Views would be a person's average score for Own Views for a single conversation, and base rate for Response would be a person's average score for Response for a single conversation. The partner influence construct, however, would follow a slightly different pattern. Given the reciprocal relationship between partner Own Views and self Response, partner influence for self Own Views would be the extent to which partner Response on turn t-1 predicts self Own Views on turn t. Similarly, partner influence for Response would be the extent to which partner Own Views on turn t-1 predicts self Response on turn t. Table 5.4 lists

Table 5.4

Definitions for Base Rate, Inertia, and Partner Influence

Outcome Self Codes	Base Rate Self Codes	Inertia Self Codes	Influence Partner Codes
Own View *(turn t)*	Mean Own View	Own View *(turn t-2)*	Response *(turn t-1)*
Response *(turn t)*	Mean Response	Response *(turn t-2)*	Own View *(turn t-1)*
Emotion *(turn t)*	Mean Emotion	Emotion *(turn t-2)*	Emotion *(turn t-1)*
Listening *(turn t-1)*	Mean Listening	Listening *(turn t-3)*	Own View *(turn t-1)*

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all the definitions regarding base rate, inertia, and partner influence for each of the communication codes (Own View, Response, Emotion, and Listening).

In light of Gottman's work, it was expected that, for each of the four communication codes, base rate, inertia, and influence would all be important predictors of speaking turn level variance in communication behavior. Accordingly, Hypothesis 5 is as follows:

Hypothesis 5: *Base rate, inertia, and partner influence will all predict communication behavior at the level of the speaking turn.*

To test Hypothesis 5, a total of eight models were tested. These included four models for wives (Own Views, Response, Emotion, and Listening) and four models for husbands. Each model was based on the following general equation:

$$Y_{tj} = B_0 + B_1(\text{mean}_{\,j}) + B_2(\text{partner}_{t\text{-}1j}) + B_3(\text{self}_{t\text{-}2j}) + U + R + E$$

where:

- Y_{tj} is the outcome behavior on turn i for person j.

- B_0 is the overall grand mean on the outcome behavior variable.

- $\text{mean}_{\,j}$ is the average score on the outcome behavior for person j across all turns across all conversations *(this represents a person's steady state)*.

- $\text{partner}_{t\text{-}1j}$ is the score for the partner's behavior on the previous turn $(t-1)$ *(this represents partner influence)*. This variable is centered within conversations so that it will be limited to explaining only within-conversation variance.

- $\text{self}_{t\text{-}2j}$ is the score for the outcome behavior from for one's own previous speaking turn $(t-2)$ *(this represents one's own inertia)*. This variable is

centered within conversations so that it will be limited to explaining only within-conversation variance.

- U + R + E represent unexplained variance between people, between conversations, and within conversations respectively.

Coefficients for base rate, influence, and inertia for each variable are listed in Table 5.5. These results support the importance of all three components, base rate, partner influence, and inertia, in predicting behavior on individual speaking turns. Thus, these results support Hypothesis 5. Notably, in all cases, base rate was a stronger predictor than partner influence or inertia within conversations.

Compositional Effects

It is especially interesting to compare the results for base rate and for inertia. In both cases, self behavior is being used to predict self behavior. For inertia, self behavior on one speaking turn is used to predict self behavior on a subsequent speaking turn. For base rate, average self behavior across an entire conversation is used to predict self behavior on a specific speaking turn. The trend for base rate to produce a substantially larger effect than inertia is suggestive of a compositional effect. Recall that I introduced the idea of compositional effects when I first reviewed the various types of results we could potentially encounter when conducting HLM analyses. At that point, I defined a compositional effect as a situation where the relationship between two variables at one level of analysis is significantly stronger than the relationship between the same two variables when observed at a lower level of analysis.

Table 5.5

HLM Coefficients for Base Rate, Influence, and Inertia Predicting Communication

	Base Rate	Influence	Inertia
Wives			
Own Views	.47***	.12***	.27***
Response	.46***	.19***	.18***
Emotion	.49***	.28***	.19***
Listening	.62***	.39***	.22***
Husbands			
Own Views	.57***	.13***	.28***
Response	.47***	.24***	.12***
Emotion	.45***	.23***	.13***
Listening	.57***	.30***	.17***

Note. Definitions for Base Rate, Influence, and Inertia are provided on Table 5.4. See Appendix B (Table A.4) for the proportion of total variance explained by these equations.

*** P < .001

The key issue, here, is whether the whole is greater than the sum of the parts. In the above analysis, inertia involves an analysis at the level of the individual parts – that is, at the level of individual speaking turns. The results were significant for all speaking codes. This suggests that a person's communication behavior on one speaking turn is predictive of his or her communication behavior on a subsequent speaking turn. Where inertia represents the individual parts of a conversation, the base rate variable is essentially a sum of the parts – that is, it is the average communication behavior score across all speaking turns in a conversation. Thus, if there is an effect at the level of individual speaking turns, then there is likely to be at least an equal effect at the level of the base rate. The whole should be at least equal to the sum of the parts. If a negative behavior on turn "A" predicts negative behavior on turn "B," then a person's average score for all "A" turns in a conversation would be predictive of his or her average score for all "B" turns in a conversation. Thus, the effect for base rate should be at least equal to the effect for inertia.

If the effect for base rate is simply equal to the effect for inertia, then there would be no compositional effect. In this case, negative behavior on turn "A" would always predict the same behavior on turn "B" regardless of whether turn "A" occurred in the context of a conversation involving primarily positive behavior or in the context of a conversation involving primarily negative behavior. However, if the effect for base rate is stronger than the effect for inertia, then there would be a compositional effect. That is, the whole would be greater than the sum of the parts. In this case, negative behavior on turn "A" would predict a more negative outcome in the context of a conversation involving primarily negative behavior than it would in the context of a conversation

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involving primarily positive behavior. Likewise, positive behavior on turn "A" would predict a more positive outcome on turn "B" in the context of a conversation involving primarily positive behavior than in the context of a conversation involving primarily negative behavior.

It is notable that, although the previous results were suggestive of a compositional effect, they did not directly test for the presence of a compositional effect. Because this analysis included partner influence in the equations, it is possible that the effects for inertia may have been attenuated owing to shared variance with partner influence. In addition, the previous analysis did not test whether the difference between the effect for inertia and the effect for base rate was statistically significant. Such an analysis, however, can be conducted. Moreover, it is possible to test for compositional effects both at the level of the conversation and at the level of the person.

Notably, there is a strong rationale to expect compositional effects for the communication behavior codes. Gottman has suggested that, for distressed couples, negative reciprocity becomes an "absorbing state" (e.g., 1994, p. 33). That is, once a distressed couple enters a negative interaction, they can not exit. Similarly, Gottman has found that distressed couples are more likely than non-distressed couples to have interactions characterized by escalating negative affect (1994), and specifically interactions in which the husband rejects the influence of his wife's criticism by becoming more negative (1998). Taken together, this would suggest that, in the context of a conversation or relationship characterized by extensive negativity, mildly negative behavior would lead to a much more negative response than if the same mildly negative

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behavior occurred in the context of a conversation or relationship characterized by more positive interaction. This leads to the following hypothesis:

Hypothesis 6: *There will be a significant compositional effect for all the speaking turn level predictors of communication behavior.*

Bryk and Raudenbush (1992) describe methods for examining context effects across multiple levels of analysis. Namely, a predictor variable can be entered multiple times into an equation, once at each level of analysis. For example, Own Views on turn t could be predicted by (1) the inertia variable, which is a person's Own Views score on turn t-2, (2) the base rate variable, which is a person's mean Own View score computed for each separate conversation, and (3) a person's mean Own View score across all of his or her conversations. Notably, in conducting HLM, it is typical to center each independent variable. For example, typically all speaking turn variables would be centered within conversations and all conversation variables would be centered within persons. This provides the most accurate estimates for effects actually occurring at each level. However, if the variables are entered uncentered, then each coefficient will provide an estimate of the effect at that level after controlling for the effect at lower levels. Thus, if the effect for mean conversation Own View is significant after controlling for the fact that these variables are related at the speaking turn level, then there would be a compositional effect. This analysis was conducted for each of the self and partner predictors of speaking turn level communication behavior and the results are reported in Table 5.6.

Table 5.6

HLM Coefficients Testing for Compositional Effects Using Uncentered Variables

	Wives			Husbands		
	Speaking turn level	Event level	Person level	Speaking turn level	Event level	Person level
Predicting Own View						
Self View	.28***	.35***	-.02	.29***	.38***	.04
Partner Response	.18***	.20**	.03	.20***	.11*	.20**
Predicting Response						
Self Response	.20***	.35***	.01	.16***	.30***	.10*
Partner Own View	.22***	.03	.25**	.26***	.04	.16*
Predicting Emotion						
Self Emotion	.24***	.33***	.03	.19***	.39***	-.02
Partner Emotion	.34***	.32***	.01	.27***	.18***	-.01
Predicting Listening						
Self Listening	.29***	.40***	.05	.23***	.41***	.03
Partner Own View	.45***	.11*	.16*	.33***	.09**	.22**

* $P < .05$, ** $P < .01$, *** $P < .001$ (one tailed)

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The results in Table 5.6 strongly support Hypothesis 6 in that compositional effects were observed for all variables. The majority of these compositional effects occurred at the level of the event. Even after controlling for the relationship between variables at the level of the speaking turn, there was a substantial amount of variance explained at the level of the conversation for most of the variables. Thus, inertia and partner influence operate differently in the context of a generally positive conversation than they do in the context of a generally negative conversation. Specifically, they become positively biased in generally positive conversations and negatively biased in generally negative conversations, such that the exact same speaking turn would lead to different outcomes depending on the composition of the conversation as a whole. It could be said that when there is a large amount of negativity in a conversation, a person develops an extremely sensitive set of negativity triggers.

A few compositional effects were also observed at the level of the person. Notably, five of the six person level compositional effects for partner speaking behavior (partner Own Views and partner Response) were significant. In contrast, only one of the person level compositional effects for self speaking behavior reached significance. It is important to keep in mind that if there is a compositional effect at the level of the conversation, then this means that a person who participates in frequent negative conversations will necessarily already have a negative biased sensitivity to negativity. Compositional effects at the level of the person, however, suggest something more than this. Person level compositional effects occur when this negativity bias is even stronger than would be expected simply on the basis of a person's frequency of negative conversations.

Discussion

The preceding analyses served to demonstrate some of the ways in which Hierarchical Linear Modeling can be useful in research on marital process. These analyses examined communication behavior at the level of the speaking turn, at the level of the conversation, and at the level of the person. The relationships between variables at the level of the speaking turn supported the overall validity of the four communication codes used in the present study. As hypothesized, the ways in which a person expresses his or her own views was best predicted by how he or she expressed his or her own views on a previous turn and by the ways in which his or her partner previously responded to those views. The ways in which a person responds to his or her partner was best predicted by the ways in which the person previously responded to the partner and by the ways in which the partner expressed his or her own views. Taken together, there appear to be important, detectable differences between the functions of these different variables at the level of the speaking turn.

The results also support the importance of constructs pertaining to base rate, inertia, and partner influence. This builds on the work of Gottman and Murray (e.g., Cook, et. al., 1995; Gottman, Swanson, & Murray, 1999). The present study took general constructs that were developed from deterministic mathematical modeling and used them in multilevel statistical models. Variables analogous to the ones proposed by Gottman and Murray were indeed found to be significant predictors of outcomes at the level of the speaking turn. This suggests that variables such as these are robust in explaining components of marital process.

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The current results also provide clues as to how consistency in communication behavior is to be understood. As suggested by Gottman's (1994) concept of Q-space, communication behavior is presumably highly related to underlying cognitive and affective perceptual processes. For example, a person changing from a perception that all is well to a perception that he or she is receiving an unjustified attack would be expected to produce a corresponding change in his or her communication behavior. Conversely, consistency in cognitive and affective perceptual processes would be expected to produce consistency in communication behavior. Therefore, the level at which consistency in behavior can be observed should bear upon the level at which underlying cognitive and affective perceptual processes should be understood to operate.

If consistency in communication behavior can be explained entirely in terms of variance occurring at the level of the speaking turn, then any cognitive or affective appraisal that causes communication behavior would likely be occurring at the level of the speaking turn as well. That is, people would likely be appraising each individual speaking turn in a conversation. However, if consistency in communication behavior is best explained by variance occurring at the level of the conversation, then any cognitive or affective appraisal that causes communication behavior would likely be best conceptualized at the level of the conversation as well. In this case, people would be expected to make a general appraisal about the conversation as a whole, and this appraisal would be more important than individual micro-appraisals made in response to individual speaking turns. Finally, if consistency in communication behavior is best explained by variance occurring at the level of the person, than any cognitive or affective appraisal that causes communication would likely be best conceptualized as a habitual

trait. In this case, communication would likely be the product of long-term habitual traits, responses, and appraisals that are generally not dependent on the context of individual conversations or the context of individual speaking turns.

With this in mind, the results from the present study regarding compositional effects are particularly interesting. Notably, slightly different patterns were observed for self behaviors versus partner behaviors. For self behavior, strong compositional effects were observed at the level of the conversation, and compositional effects were generally limited to the level of the conversation. This suggest that, although individual speaking turns are important, something about the context of a conversation as a whole is typically more important in determining the extent to which a person will show consistency over time in his or her own communication behavior. Thus, future research seeking to identify cognitive or affective processes that determine consistency versus change in one's own communication behavior may be most successful by focusing on predictors that operate at the level of the conversation.

However, the results regarding compositional effects for partner speaking behavior (partner Own Views and partner Response) were notably different. Here, the compositional effects generally extended to the level of the person. This suggests that, although individual speaking turns and individual conversations are important, something about the characteristic traits of the partner as a whole typically has more influence on one's own communication behavior. Notably, this is not entirely consistent with model proposed by Gottman in which the partner influence function is conceptualized as operating at the level of individual speaking turns. What the present results indicate is that the influence from one's partner has to do more with the partner's long-term

communication traits than with the partner's communication behavior observed on individual speaking turns.

Taken together, these results raise questions about the ways in which people process information about their marriages. There may be some cognitive and affective processes that involve appraisals being made at the level of the conversation. These processes may be responsible for determining consistency in one's own communication behavior over the course of the conversation. In contrast, other cognitive and affective processes may involve appraisals pertaining to the entire relationship history. These appraisals may represent more global schemata which are relatively insensitive to changes taking place in the context of individual conversations. Moreover, these processes may best explain the ways in which one's own communication behavior is influenced by the behavior of one's partner. Of course, it remains for further research to explore these possibilities. The key contribution of the present study is that it increases understanding of communication processes across multiple levels of analysis, and thereby provides direction for future research seeking to understand the causes and predictors of communication behavior in marriage.

CHAPTER 6

Communication Behavior in Marriage:

Do the Topics Couples Choose to Discuss Make a Difference?

The common research paradigm for studying communication in marriage is to recruit couples to visit a special communication laboratory where they are asked to first identify a current area of conflict in their relationship and then to have a conversation in which they attempt to resolve the issue (Markman & Notarius, 1987). The observed communication behavior in these conversations has been found to be predictive of many forms of concurrent marital functioning as well as important longitudinal outcomes such as divorce (Gottman, 1994; Karney & Bradbury, 1995; Weiss & Heyman, 1990, 1997). It is somewhat surprising to note, however, that virtually no research has been published regarding the first step in this assessment procedure, the part where couples select a topic to discuss. This matter, however, is of crucial importance on two grounds. First, variance in the types of topics selected by couples could bear on the overall validity of the standard communication assessment procedure. Second, the topic selection task itself might provide useful data that could advance current understanding regarding both concurrent marital functioning and longitudinal marital process.

When couples are asked to identify an area of conflict in their relationship, there are two aspects of the issues they select that may be particularly salient. The first aspect is simply the inherent difficulty or severity of the topic being identified. The second aspect is the manner in which the topic is cognitively framed.

Regarding issue difficulty, presumably some topics are inherently more difficult to discuss and resolve than other topics. For example, it would seem easier to resolve a disagreement about what to do on Friday night than a disagreement about whether one spouse is having an affair. However, if this is true, then it raises important questions about the validity of the communication assessment procedures where couples are allowed to choose topics that are relevant to them to discuss. The implicit assumption behind these procedures is that the communication behavior observed in one couple will essentially look similar in any conversation that couple has about an area of conflict in their relationship regardless of the actual topic that they choose to discuss. It is possible, however, that people show the worst communication behavior when discussing "hot" topics that any couple would have trouble addressing, and they show the best communication behavior when discussing issues that are easy to resolve. Thus, the fact that distressed couples show the worst communication could be confounded with the fact that distressed couples might also choose the most difficult topics to discuss.

Notably, there are two sides of opinion on this issue. For example Markman and his colleagues (Lindahl, Clements, & Markman, 1998; Storaasli & Markman, 1990, Notarius & Markman, 1993) have noted that all relationships will experience conflict from time to time and they claim that the content of the conflict is not as important as the way the conflict is handled (also see Peterson, 1968, for a similar proposal). It is not *what* couples disagree about but rather *how* they resolve the disagreement that matters. This position would certainly support the validity of the traditional communication research paradigm in which couples choose their own issues to discuss. However, this viewpoint would be contested by other researchers. For example, a research study

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reported in an unpublished manuscript by Vivian, Heyman, and Langhinrichsen-Rohling (cited in Weiss and Heyman, 1997) raises the possibility that the context of a conversation is actually important. Specifically, they reported that distressed women are more likely to raise issues pertaining to respect and empowerment than are men or non-distressed women. Although this does not directly speak to the issue of whether the topics chosen by couples influence the nature of communication behavior observed in their conversations, it does at least suggest that the types of topics couples choose is more than trivial. Moreover, other researchers have specifically raised concerns that the topics chosen by couples might directly influence their conversations. For example, in describing their results in a research study that used the standard communication assessment paradigm, Bradbury and Fincham (1992) noted that, "distressed couples may have discussed issues that were more serious or difficult than those discussed by nondistressed couples" (p. 625). Taken together, the issue of whether topic difficulty influences communication behavior is keen, and this issue has yet to be resolved empirically.

It is important to note that the issue here is not simply whether topic difficulty and communication behavior are correlated. The issue is more complex than this because there are two levels at which the relationship between topic difficulty and communication behavior could be examined, the level of the person and the level of the conversation. At the level of the person, it is possible that a person who, in general, has a trait of choosing difficult topics might also be the type of person who, in general, uses negative forms of communication when discussing those topics. For this to be true, a person's worst conversations need not necessarily occur in the context of discussing his or her most

difficult topics. That is, it would be possible for these variables to be correlated at the level of personal traits even if topic difficulty does not have a direct influence on communication behavior in the context of individual conversations. This would be different from a relationship between these variables occurring at the level of the conversation whereby the difficulty of the topic chosen is directly related to communication behaviors observed in a specific conversation about that topic. In this case, there would be a direct correspondence between person's worst conversations and his or her most difficult topics. Notably, the presence of a person level relationship between issue difficulty and communication behavior would not be a threat to the validity of the standard communication assessment protocol. The presence of a conversation level relationship would. In other words, the concern is not whether distressed couples might both discuss difficult topics and also use poor communication, but rather, whether the communication behavior observed in a specific conversation can be explained simply by the difficulty of the topic chosen. Thus, it would be useful to examine the relationship between issue difficulty and communication behavior both at the level of the person and at the level of the conversation.

In addition to examining issue difficulty, it may also be useful to look at the way people frame the topics they choose to discuss. Any given area of conflict within a relationship could obviously be thought of from many different perspectives. For example, a person wanting to broach an issue pertaining to his or her partner being overly lenient in disciplining children could think, "I am tired of my spouse always being incompetent and careless in handling the children because it undermines my authority." Or, regarding the same issue, a person could think, "We have different ways of

disciplining our children, and I would like to negotiate with my spouse what our approach will be." Both of these thoughts represent potential ways of framing the exact same issue, although notably the former could be described as being a hostile frame and the latter could be described as being a polite frame. It would seem reasonable to expect that one of the key determinants of the way in which a person talks about an issue during a conversation with his or her partner is the way in which the person thinks about the issue prior to the conversation. A person thinking about an issue from a hostile affective perspective would be expected to use more hostile forms of communication.

This line of reasoning would predict that there will be both a person level and a conversation level relationship between issue framing and communication behavior. At the person level, people who typically use a hostile frame when thinking about areas of conflict in their relationship would also be expected to be people who typically use hostile forms of communication in their relationship. At the conversation level, a person's cognitive frame prior to a particular conversation would be expected to be directly related to the types of communication behavior the person uses during that conversation. Unlike issue difficulty, however, the outcome here will not bear on the overall validity of the standard communication assessment paradigm. Rather, to confirm these hypotheses would simply serve to increase understanding regarding which types of cognitions are predictive of communication behavior across multiple levels of analysis. In addition, by examining issue framing along with topic difficulty, it is possible to investigate whether one of these variables is comparatively more important than the other in predicting communication.

Beyond using issue difficulty and issue framing to predict communication behavior, these two variables also have the potential to contribute to a broader understanding of marital process. For example, over time, couples with poor marital functioning would be expected to acquire a large set of conflict issues that are unresolved and highly difficult to discuss. Thus, when asked to chose an area of conflict to discuss, they would be expected to be more likely to choose a difficult issue. In addition, continued accumulation of unresolved, difficult issues could lead to declines in overall marital satisfaction over time and possibly even to divorce. Similarly, couples with poor marital functioning would be expected to habitually use more hostile frames when thinking about unresolved issues in their relationship. Moreover, couples who persistently use hostile frames would be expected to experience declines in satisfaction over time and to be at risk for divorce. Taken together, both issue difficulty and issue framing would be expected to predict important marital outcomes, such as concurrent marital functioning, change in marital satisfaction over time, and divorce.

An additional question to address in understanding how to interpret these variables pertains to stability over time. For example, issue framing could be conceptualized as a variable that represents a person's characteristic ways of framing the issues he or she discusses with his or her partner. If this is true, then a person would be expected to show some degree of stability from one topic to the next in how issues are framed. In the case of issue difficulty, however, the expected degree of stability over time is less clear. On one hand, issue difficulty, like issue framing, could be conceptualized as an effect indicator. In this case, each topic a person broaches could be viewed as representing something characteristic about the person, and if this is true, then

people would be expected to broach issues of similar difficulty from one topic to the next. On the other hand, issue difficulty could be viewed as a causal indicator. In this case, having one or more difficult topics to resolve could be conceptualized as causing a couple to have a high load of difficult topics to resolve, even if the difficulty level of any one given topic might bear little relationship to the difficulty level observed in other topics broached by the same person. Thus, to clarify the ways in which issue framing and issue difficulty are best conceptualized, it is important to investigate the extent to which these variables will show stability over time.

Review of Salient Methods

As previously discussed in the methods chapter, methods were created for assessing both issue difficulty and issue framing. Recall that an issue difficulty variable was created by recruiting a panel of experts to rate the difficulty of various topics, and then using the scale produced by this panel of experts to code the topics actually raised by the married couples in the sample. Also recall that an issue framing variable was created in a two step procedure. In the first step, all the written descriptions of topics that were provided by couples in the study were rewritten to mask the actual topic but retain the affective phrasing. In the second step, 23 students who scored high on the Interpersonal Perception Task were selected to provide ratings for each statement regarding the amount of hostility implicit in the phrasing of the issue. As described in the method's section, each person identified two different topics on each of two visits to the communication laboratory. On each visit, one topic was used in a problem solving conversation; the other topic was not. All topics received a difficulty rating, yet for logistical reasons, only

topics that were discussed in actual problem solving conversations received issue framing scores. When predicting person level outcomes, scores for issue difficulty and for issue framing were created by averaging across all coded topics. When predicting conversation level outcomes, codes for individual topics were used to predict outcomes in individual conversations. Both issue difficulty and issue framing were used to predict change in marital satisfaction over time, divorce, four different measures of marital functioning (SOPERA, MAPNU, DAS, AOC), and one measure of partner attributions (the overall attribution rating). In addition, Hierarchical Linear Modeling was used to analyze relationships between the communication behavior codes (Own View, Response, Emotion, and Listening) and both issue difficulty and issue framing across two levels of analysis, the level of the conversation and the level of the person.

Results

The previously reported reliability information for issue difficulty and issue framing demonstrated that these variables could be reliably observed and coded. To test the degree to which issue framing was stable over time, the time one issue framing score was correlated with the time two issue framing score. The test-retest correlation was .46 ($p < .01$) for wives and .45 ($p < .01$) for husbands. To test the degree to which issue difficulty was stable over time, the difficulty codes for all four topics were used as four separate indicators and entered into a reliability analysis. The resulting alpha was .28 for wives and .04 for husbands. Item total correlations ranged from -.15 to .46. Taken together, these results provide evidence for stability in issue framing and provide no significant evidence for stability in issue difficulty.

To examine the extent to which issue difficulty and issue framing are related to current marital functioning, correlations were computed. Both issue difficulty and issue framing were correlated with the four measures of marital functioning and with the overall attribution rating. These correlations are reported in Table 6.1. All of the observed correlations regarding issue framing were in the expected direction for both wives and husbands. However, for wives, only the attribution measure produced a significant correlation. For husbands, three correlations reached significance. Specifically, husbands who tended to think of conflict issues using more hostile cognitive

Table 6.1

Issue Framing and Issue Difficulty Correlations with Current Marital Functioning

	Wives		Husbands	
	Issue Framing	Issue Difficulty	Issue Framing	Issue Difficulty
DAS	-.20	.11	-.15	.33*
AOC	.17	-.01	.42**	-.06
SOPERA	-.28	-.11	-.35*	.23
MAPNU	.01	.06	.20	-.24
Attributions	.43**	-.16	.40*	.11

Note. DAS = Dyadic Adjustment Scale; AOC = Areas of Change questionnaire; SOPERA = Schema of Partner Empathic Responding to Anger; MAPNU = Memory Accessibility of Partner Not Understanding.
* p < .05, ** p < .01

frames tended to (1) have more areas where they wanted their wives to change, (2) view their wives as non-empathic listeners in response to conflict in the relationship, and (3) use more negative forms of attributions for explaining partner behavior. A strikingly different pattern was observed in regards to issue difficulty. For wives, all the correlations for issue difficulty were non-significant and close to zero. For husbands, most of the correlations for issue difficulty were in the wrong direction, and the correlation with the Dyadic Adjustment scale was both in the wrong direction and significant. In other words, husbands who tended to broach more difficult topics reported having greater satisfaction in their relationships.

To determine the extent to which issue difficulty and issue frame predicted divorce over a three-and-a-half year period, a series of t-tests were computed comparing the group of stable couples with the group of couples who divorced. The results of these analyses are reported in Table 6.2. The results of this analysis were strikingly unimpressive. In contrast to other variables such as communication behavior which have been strong predictors of divorce in the present sample, none of the t-tests for issue difficulty or issue frame were significant. It is interesting to note, however, that the observed, average issue difficulty for the husbands in couples that remained together was about one-half of a standard deviation more difficult than the observed, average issue difficulty for the husbands in couples who divorced. In addition, it is also notable that there was about three-fourths of a standard deviation of difference between husbands in the two groups on the issue framing variable, although this difference was obviously not significant given the sample size.

Table 6.2

Issue Framing and Issue Difficulty Predicting Divorce

	Intact Couples (n = 30)		Divorced Couples (n = 4)		
	Mean	sd	Mean	sd	t-value
Wives					
Issue Framing	2.77	.65	2.89	.56	0.36
Issue Difficulty	3.48	.48	3.42	.36	0.24
Husbands					
Issue Framing	2.54	.78	3.16	.53	1.55
Issue Difficulty	3.27	.48	3.02	.72	0.91

To analyze the extent to which issue difficulty and issue framing predicted change in satisfaction over 3.5 years, regression analysis was used. As previously mentioned, 26 couples in the study completed the Satisfaction subscale on the DAS at the 3.5 year follow-up assessment. Each predictor variable was entered into a regression equation predicting satisfaction at time two after controlling for satisfaction at time one. The standardized beta weights for each predictor variable, along with significance tests for each beta weight, are reported in Table 6.3. Again, all the results were non-significant. Notably, although the results were not significant, the trend continued in which results

Table 6.3

Issue Framing and Issue Difficulty Predicting Change in Marital Satisfaction

	Wives (n = 25)		Husbands (n = 22)	
	Standardized Beta[a]	t-value	Standardized Beta[a]	t-value
Issue Framing	-.14	0.92	.15	0.84
Issue Difficulty	.07	0.46	.18	1.05

[a] Controlling for satisfaction at time one

were suggestive of the possibility that choosing difficult topics is related to <u>positive</u> outcomes for husbands, and not to negative outcomes as was predicted.

In the final data analysis step, Hierarchical Linear Modeling was used to examine relationships between issue difficulty and communication and relationships between issue framing and communication across two levels of analysis. At the level of the person, people who (1) generally think of issues using a more hostile frame, and (2) generally broach more difficult topics, would be expected to also be the types of people who, in general, use more negative forms of communication in their conversations. At the level of the conversation, the extent of negative issue framing prior to a conversation was expected to directly influence communication behavior during that specific conversation. In addition, at the level of the conversation, there were two competing models regarding

issue difficulty, one of which would predict that issue difficulty will directly influence communication behavior in the context of individual conversations.

To investigate these hypothesis, the following HLM equation was used to estimate the person level and the conversation level effects for each predictor for each communication code:

$$y_{cp} = \gamma_{00} + \gamma_{01}x_p + \gamma_{10}x_{cp} + u_{0p} + e_{cp}$$

where:

- y_{cp} is the communication outcome in conversation "c" for person "p."

- γ_{00} is the grand mean for the communication score.

- γ_{01} is the slope for the person level scores on either issue difficulty or issue framing, with each score being a person's average score across two conversations.

- γ_{10} is the average within-person slope regarding the degree to which individual scores on either issue difficulty or issue framing predict individual communication scores.

- $u_{0p} + e_{cp}$ is the unexplained variance at the level of the person and at the level of the conversation respectively.

Two equations were estimated for each communication variable, one for each of the two predictors. Results were computed for both self communication and for partner communication, and were computed for wives and husbands separately. These results for issue framing are reported in Table 6.4 and the results for issue difficulty are reported in Table 6.5.

Table 6.4

HLM Coefficients for Issue Framing Predicting Communication

	Issue Framing			
	Person Level		Conversation Level	
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	-.46*	-.29*	-.35 ^{m}	-.13
Response	-.19	-.37*	-.26 ^{m}	-.14
Emotion	-.16	-.13	-.26	-.06
Listening	-.19	-.17	-.23	-.13
Partner Behavior				
Own Views	-.23	-.12	-.11	-.16
Response	-.18	-.11	.05	-.01
Emotion	-.10	.02	-.07	.03
Listening	-.21	-.22*	-.14	-.13

Note. See Appendix B (Table A.5) for the proportion of variance explained at each level of analysis.

^{m} Marginal significance

* $p < .05$ (one tailed)

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Table 6.5

HLM Coefficients for Issue Difficulty Predicting Communication

| | Issue Difficulty | | | |
| | Person Level | | Conversation Level | |
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	.01	$.27^{wd}$	-.05	.11
Response	.08	.25	-.16	.10
Emotion	-.07	.14	.04	.08
Listening	.16	.17	-.05	.01
Partner Behavior				
Own Views	.14	.05	-.09	.08
Response	.04	.15	-.42*	.02
Emotion	-.06	.09	.04	.19
Listening	.09	.12	-.19	.13

Note. See Appendix B (Table A.6) for the proportion of variance explained at each level of analysis.

^{wd} Not significant because coefficient is in the wrong direction

* $p < .05$ (one tailed)

At the level of the person, 15 of the 16 coefficients regarding the relationship between issue framing and communication were in the expected direction. However, only four of these actually reached significance. To the extent that wives demonstrated a trait of using a hostile frame to think about issues, they tended to be more negative in expressing their own views and their husbands tended to be more negative in listening. To the extent that husbands demonstrated a trait of using a hostile frame to think about issues, they tended to be more negative in expressing their own views and to be more negative in responding to their partner. At the level of the conversation, there appeared to be a trend for issue framing to influence communication behavior for wives but not for husbands. Notably, this is similar to the pattern reported previously regarding cognitive expectancies. However, none of the conversation level coefficients for wives or for husbands reported here actually reached significance. Thus, the results for event level hostility are inconclusive.

The results for the difficulty variable were largely non-significant and close to zero both at the level of the conversation and the level of the person. At the level of the conversation, one notable exception was that when wives broached more difficult topics, their husbands used more negative forms of responding. At the level of the person, the same trend once again occurred in which topic difficulty appeared to represent a positive construct for husbands. All the person level coefficients for husbands were in the wrong direction and one would have been significant if a two-tailed test had been used. In other words, the results raise the possibility that husbands who, in general, are willing to broach more difficulty topics are also likely to be the types of husbands who, in general,

use more positive forms of communication. Of course, given that this runs counter to the hypothesized relationship, all one-tailed tests are non-significant.

Discussion

If a clinician or researcher wants to understand why a couple is having difficulty resolving a particular area of conflict in their relationship, is it more important to know what topic is causing the conflict, or to know how they are framing that particular topic regardless of what it might mean to other couples? To address this question, the present study sought to develop a rating system for capturing the inherent difficulty of different topics and to distinguish the inherent difficulty of a topic from the idiosyncratic manner in which a person might frame the topic.

A unique contribution of the present study was the development of a coding system for classifying participants' written descriptions of conflict issues into 24 different categories. Notably, coders were able to place each written description into a category with an average agreement rate of 67%. On one hand, this indicates that couples sometimes describe their areas of conflict in ways that do not make it readily apparent what specific issue is actually being raised. On the other hand, a 67% agreement is quite high in light of the fact that there were 24 different categories that could be used. Moreover, it is notable that at least two of four coders agreed with each other on 97% of all the written descriptions. Thus, the agreement rate between coders was certainly adequate. To assign difficulty ratings to each topic, a panel of clinical psychologists was used to provide difficulty ratings for each topic category. Overall, they proved to be highly reliable in identifying which categories they thought would be difficult and which

categories they thought would be easy. Given the extent of agreement between coders and the reliability of the ratings made by the panel of clinical psychologists, there is good reason to assume that the difficulty rating was reliable and valid.

In contrast to the strong results for the reliability of the coding system, however, the results indicated almost no stability in issue difficulty across multiple topics raised by the same person. On one hand, this could indicate that issue difficulty ratings should be regarded as causal indicators of the overall amount of issue difficulty a person experiences, and not as effect indicators. On the other hand, these results could indicate that, in spite of the agreement among coders and the reliability of the panel of psychologists, the coding system may not have produced a valid index of issue difficulty. This could be true, for example, if the original set of topic categories used by the coders was somehow not a meaningful set of categories, or if the panel of psychologists were unified with each other, yet as an entire group grossly out of touch with which topics are truly difficult for couples to resolve. The fact that the issue difficulty variable produced very few significant results also raises questions regarding its overall validity.

While the present study can not rule out the possibility that the results regarding the issue difficulty code simply indicate that it suffers from poor validity, there are two other alternate explanations for these results which fit with current theory and research on marital process, and as such, these alternate explanations seem more probable. First, research on the "demand-withdrawal" pattern in marital interaction suggests that couples often develop a pattern in which one partner repeatedly broaches areas of conflict in the relationship in hopes of resolving these issues, and the other partner repeatedly withdraws or becomes defensive when these issues are raised (e.g., Christensen & Heavey, 1990;

Heavey, Christensen, & Malamuth, 1995; Heavey, Layne, & Christensen, 1993).

Research on this pattern has suggested that husbands are more likely to take the withdrawing role than are wives, and that this pattern is predictive of marital distress. There are two notable findings in the present study that fit with research in this area. First, although communication behavior during problem solving conversations appeared to be unrelated to the difficulty of the actual issue being discussed, there was one notable exception, in which husbands became more defensive when their wives broached more difficult issues. This could be interpreted as husbands attempting to reject their wives' requests to discuss difficult topics. Second, there was a trend observed in the present study whereby couples appeared to have the best overall marital functioning when husbands were willing to address more difficult issues. If this willingness to address difficult topics is taken as a sign that a couple has not entered the demand-withdrawal pattern of interaction, then this trend becomes understandable. Of course, these results need to be interpreted cautiously given that they were not predicted *a-priori* and because the majority of results for issue difficulty were non-significant.

Another possible explanation for the results pertaining to issue difficulty is that this variable simply may not be important, or at least not robust, in explaining components of marital process. This possibility would support the overall validity of the standard communication assessment paradigm in which couples are requested to choose topics that are relevant to them to discuss in a problem solving conversation. It would also fit the proposal suggested by Markman and his colleagues (Lindahl, Clements, & Markman, 1998; Storaasli & Markman, 1990, Notarius & Markman, 1993) that the topic of an actual conflict is not as important as the way the conflict is resolved. In addition,

the number of null results for issue difficulty observed in the present study would be consistent with observations that distressed couples frequently have highly volatile arguments about seemingly trivial issues. Along this line, it is also notable that, in a study regarding the frequency and quality of communication in early marriage, Noller and Feeney (1998) compared ratings on communication across 12 topic areas and found that all topics were equally likely to lead to conflict. Taken together, it is possible that issue difficulty has little bearing on actual marital process.

Regardless of the actual extent to which issue difficulty may or may not influence marital process, the results of the present study do indicate that issue difficulty is less important than issue framing. In contrast to issue difficulty, the vast majority of the results for issue framing were in the expected direction and many were significant. The most consistent findings observed across both wives and husbands suggest that, in terms of personal traits, issue framing is correlated with the types of attributions a person tends to make and with the ways in which a person tends to express his or her own views in problem solving conversations. Thus, people who think about issues using more hostile frames tend to discuss issues using more hostile methods of expressing their own views. Given that coders were instructed to consider attributions when making ratings for issue hostility, the strong correlation between attributions and hostility serves to support the validity of the issue framing variable.

While issue framing did produce several significant results, there were several areas where hypotheses regarding issue framing were not confirmed. Issue framing did not significantly predict any of the longitudinal outcomes. Although the magnitude of the results taken in conjunction with the sample size raises the possibility that the present

study simply lacked sufficient power to detect a relationship, it is notable that other longitudinal results based on this same sample regarding other variables such as communication behavior, were large and significant. In addition, none of the conversation level results were significant for issue framing. On one hand, this follows the pattern observed for blaming attributions which, as reported earlier, produced effects at the level of the person but not at the level of the conversation. On the other hand, marginal effects were observed for wives on a few conversation level variables, a pattern which is similar to the observed pattern for cognitive expectancies which was reported earlier. Given that the issue framing variable was based on a global rating scale involving subjective judgements about the amount of hostility evident in the framing of the issue, it is difficult to determine the ways in which this variable may compare to other variables such as attributions or cognitive expectancies. Thus, it would be important for future research to provide clarification on the specific components that coders respond to when making ratings of overall hostility in issue framing.

Overall, the key contribution of the present study is that it serves to attenuate concern that issue difficulty may be a confounding factor in the commonly used paradigm for assessing communication in marriage. While it remains possible that issue difficulty may still influence communication behavior to some degree, for the present study obviously can not confirm a null hypothesis, the present results at least indicate that it is highly unlikely that topic difficulty has a powerful or robust effect on communication behavior. Along this line, the present study indicated that the actual topics couples discuss is much less important than the way couples think about the topics they discuss.

CHAPTER 7

Providing Empathy and Support for Daily Hassles:

Communication Skills for Stable Marriages

To best understand how marriages change and why some marriages develop into lasting, satisfying partnerships whereas other marriages do not, Bradbury, Cohan, and Karney (1998) suggest that it is of crucial importance for researchers to focus on understanding adaptive processes in marriage. Toward this end, two questions are key. First, what are the essential adaptive tasks or functions that a couple needs to perform in order to maintain a satisfying and stable relationship? Second, what are the key skills or competencies that are needed in order to perform those tasks? Bradbury, Cohan, and Karney suggest that two of the primary adaptive tasks couples need to perform include negotiating conflict within the relationship and giving each other support in response to outside stress.

Currently, there is a substantial body of research indicating that the ways in which couples communicate to resolve relationship conflicts predicts important concurrent and longitudinal relationship outcomes such as divorce (Gottman, 1994; Karney & Bradbury, 1995; Weiss & Heyman, 1990, 1997). This is concomitant with the fact that most clinical interventions for couples include a component in which couples are taught how to use better forms of communication to resolve their conflicts (see Jacobson & Gurman, 1995). Taken together, this would support the notion that one of the key tasks that needs to be performed by couples is the task of conflict resolution. Along this line, the skills and competencies needed to perform this task primarily include a set of communication skills.

For example, in light of Gottman's (1994) model of marital process, these communication skills might include an ability to express one's own views without criticism and contempt, to respond to one's partner without defensiveness, and to listen to one's partner without stonewalling.

Although there has been substantial research focus on the importance of conflict resolution in marital process, Bradbury, Cohan, and Carney (1998) have noted that researchers may have neglected other important tasks that couples need to perform in order to maintain satisfying, stable relationships – namely, the ability to provide social support to each other. Along this line, Pasch and Bradbury (1998) found that the ways in which spouses help each other contend with various personal issues that are not directly related to their marriage is predictive of both concurrent marital satisfaction and longitudinal marital outcomes. Similarly, Cutrona and Suhr (1994) asked spouses to take turns discussing current life stressors and they found that the number of supportive comments made in these discussions was related to marital satisfaction. In addition, Gottman (e.g., 1994) has typically included an "events of the day" conversation as part of his standard protocol, and he has found some degree of correspondence between communication during this presumably neutral conversation and other marital outcomes. Taken together, there is good reason to expect that variables pertaining to social support are important for understanding marital process.

Given that only a handful of studies have addressed this issue, there is a need for further research to extend upon these initial findings. Possibly, social support will prove to be a robust predictor of multiple marital outcomes across multiple contexts. Notably, previous research in this area has been limited to assessing supportive behaviors in the

context of a communication task where spouses are implicitly or explicitly instructed to act naturally. Thus, the fact that more distressed couples show poorer social support could be taken to indicate that they lack the skills or desire to give social support to each other, or it could be taken to indicate that more distressed couples simply don't naturally consider acting in supportive ways toward each other. This raises the question of whether deficits in giving and eliciting social support would be observed in distressed couples even if they were explicitly instructed to used good communication skills and to be supportive.

To address this issue, the present study examined communication in conversations where couples were given explicit instructions to use good listening and speaking skills. The present study focused on conversations in which couples shared daily hassles and stresses with each other. In this way, the present study sought to explore a set of skills and competencies that couples likely need in order to be successful in providing support to each other. Notably, Noller and Feeney (1998) have suggested that the skills couples need for engaging in high quality conversations include, "self disclosure, recognizing the partner's point of view, and being satisfied with the interaction" (p. 16). Along this line, Noller and Feeney found that a questionnaire measuring these communication characteristics correlated with measures of current marital satisfaction. Although couples' self-reports of communication behavior could be quite discrepant from actual observed communication behavior, the definition of quality communication provided by Noller and Feeney provides a useful starting point for creating an observational measure of communication in conversations about daily hassles. The present study will

investigate three observational variables analogous to the constructs proposed by Noller and Feeney.

The first skill, self disclosure, was defined as an ability to fully articulate and express one's own feelings and thoughts regarding a daily hassle or stressful event. This is analogous to the conflict resolution communication skill of stating one's own views without criticism. However, in the context of a conversation about a daily hassle, criticism may be both less probable and less relevant. Instead, it may be more important that the person is able to articulate a coherent story with sufficient content such that his or her partner is able to truly understand the relevant thoughts and feelings.

The second component of quality communication proposed by Noller and Feeney (1998) is recognizing the partner's point of view. The present project extended this idea by noting the importance of being able to communicate to the partner that one understands the partner's thoughts and feelings. This skill is similar to the paraphrasing skill that is commonly taught to couples in interventions designed to improve skills for conflict resolution. Presumably this skill will be important in other more positive forms of intimate communication as well. Along this line, a common clinical anecdote is a story about a wife who comes home after a stressful day at work and begins to tell her husband about a conflict she is having with another coworker. The wife simply wants her husband to listen and to be empathic, yet the husband assumes that he needs to offer solutions of how she might ameliorate the problem. The husband offers solutions and then, to his surprise, his wife becomes angry with him for not being empathic. If there is some degree of truth behind this anecdote, then it may be that there are times when it is

important for partners to be able to simply listen, reflect, and demonstrate empathy for each other.

The third component of quality communication proposed by Noller and Feeney (1998) is being satisfied with the interaction. Although satisfaction, per se, would be difficult to assess via an observational coding system, it does allude to the importance of an even broader affective component, namely the ability to relax and show positive affect during an interaction with one's partner. Along this line, the present project will focus on the extent to which couples are able to relax and appear comfortable while listening to and sharing thoughts and feelings with each other. Notably, there are multiple theoretical reasons suggesting the salience of interpersonal discomfort in intimate relationships. Research on adult romantic attachment, for example, suggests that insecure attachment is characterized by a mistrust of closeness and/or anxiety over the availability of one's partner (e.g., Brennan, Clark, & Shaver, 1998). This type of discomfort has been found to decrease the extent to which spouses are willing to share feelings with each other (Feeney, 1999), and presumably it would limit the extent to which spouses are willing to provide empathic support to each other as well. Along this same line, Gottman (1994) suggests that extreme physiological arousal can cause conversations about areas of conflict to become deregulated. Similarly, it is likely that experiencing high levels of sympathetic nervous system arousal in the context of a conversation about a daily hassle or life stress could reduce the depth of what is shared and reduce the extent of the support that is given. The common theme, here, is that multiple theoretical paths all lead to the same prediction that interpersonal anxiety can hinder forms of intimate interpersonal communication. Taken together, this would imply that, in order for couples to engage in

supportive conversations about daily hassles, they need to be able to relax, to feel comfortable, and to enjoy performing the task.

In summary, the present study proposed that an important task in marriage is the task of giving and receiving support and empathy in response to daily hassles, and that there are three skills that are foundational to this task: an ability to articulately express personal thoughts and feelings about one's own hassles, an ability to communicate understanding of the partner's hassles, and an ability to find enjoyment in performing this task. If this is true, then these three skills should be predictive of both concurrent and longitudinal marital outcomes. Notably, these skills should correlate the strongest with other measures of communication behavior. For example, couples with good communication skills in resolving conflicts would also be expected to show good communication skills in discussing daily hassles with each other. These skills should also correlate with components of marital functioning pertaining to cognition. For example, a person's capacity to have supportive and pleasant conversations with his or her partner could be reduced by forms of cognitive activity such as a cognitive schema in which the partner is viewed as non-empathic, a habit of making negative partner attributions, or a tendency to maintain readily accessible memories of times when the partner was not understanding. If the partner is viewed negatively, then a person would be expected to be hesitant to share personal thoughts and feelings with the partner, to resist demonstrating empathy and understanding for the partner, and to feel less comfortable in intimate conversations with the partner. This in turn would be expected to lead to declines in overall marital satisfaction. Moreover, if the task of giving support and empathy is a crucial task for maintaining a satisfying and stable relationship, then

couples having difficulty with this task would be expected to experience declines in satisfaction over time and to be at an increased risk for divorce.

To address these issues, a special interaction task was created for couples called the Empathy Exercise. In this task, couples were directly instructed to share daily hassles with each other, to express personal thoughts and feelings, and to demonstrate understanding and empathy by paraphrasing each other. Couples' performance on this task was then used to predict several measures of concurrent marital functioning as well as longitudinal outcomes such as change in satisfaction over time and divorce.

Review of Salient Methods

The Empathy Exercise was previously described in detail in the methods chapter. Recall that the coding of the exercise produced three different codes for each participant. The first code, comfort, assesses a person's apparent comfort with the task of sharing and listening to his or her partner. The second code, articulation, assesses the extent to which a person gives a clear and substantive description of his or her own thoughts and/or feelings. The third code, understanding, assesses a person's skill in paraphrasing his or her partner. As discussed in the methods section, each Empathy Exercise was coded by three separate coders. Notably, the reliability results reported in the methods section indicated strong reliability for the comfort code and slightly less than ideal reliability for the articulation and understanding codes. However, all reliability estimates were at least .60, and all variables were judged to have sufficient reliability to be used in subsequent analyses. The codes from the Empathy Exercise were used to predict change in marital satisfaction over time, divorce, four different measures of marital functioning (SOPERA,

MAPNU, DAS, AOC), one measure of partner attributions (the overall attribution rating), and four measures of communication behavior during conversations about areas of relationship conflict (Own View, Response, Emotion, and Listening).

Results

It was expected that higher levels of marital functioning would be associated with greater comfort in sharing and listening to one's partner, greater skill articulating personal thoughts and feelings, and greater skill in paraphrasing one's partner. To test these hypotheses, a series of correlations were computed. These correlations are reported in Table 7.1. Overall, the results were consistently strong for the comfort code. For both wives and husbands, four of the five correlations were significant for this code and many were substantial. Although the correlations for the other codes were in the expected direction more often than not, they were rarely significant.

In addition to correlating with general measures of marital functioning, communication codes from the Empathy Exercise were also expected to correlate with communication during problem solving conversations. Given that communication skill is expected to generalize across contexts to some degree, correlations between two types of communication codes are expected to be stronger than correlations between communication and other forms of marital functioning. Correlations between codes from the Empathy Exercise and codes from the conflict resolution task are reported in Table 7.2. For wives, comfort sharing and listening to the partner was strongly related to the

Table 7.1

Empathy Exercise Correlations with Current Marital Functioning

	DAS	SOPERA	MAPNU	AOC	Attributions
Wives					
Comfort	.50**	.34*	$-.27^m$	-.49**	-.46**
Articulation	.21	$.25^m$	-.18	$-.26^m$	-.30*
Understanding	$.25^m$	$.25^m$	$-.26^m$	-.16	-.07
Husbands					
Comfort	.38**	.28*	-.29*	-.11	-.31*
Articulation	.14	-.03	.10	.24	-.01
Understanding	.38*	.10	-.10	.06	-.28*

Note. DAS = Dyadic Adjustment Scale; AOC = Areas of Change questionnaire; SOPERA = Schema of Partner Empathic Responding to Anger; MAPNU = Memory Accessibility of Partner Not Understanding.
^{m} Marginal significance
* $p < .05$, ** $p < .01$ (one tailed)

Table 7.2

Empathy Exercise Correlations with Behavior in Conflict Resolution Discussions

	Behavior During Conflict Resolution			
	Own Views	Response	Emotion	Listening
Wives				
Comfort	.53**	.68**	.66**	.61**
Articulation	.41**	.33*	.30*	.31*
Understanding	.24	.31*	.26^m	.28^m
Husbands				
Comfort	.29*	.26^m	.39**	.26^m
Articulation	.09	.14	-.05	.15
Understanding	.37*	.41**	.27^m	.47**

* p < .05, ** p < .01 (one tailed)

problem solving communication codes. Skill in articulation was also related to the communication codes for wives, although the trend was for these correlations to be smaller in magnitude than the correlations for comfort. The correlations for expressed understanding score for wives were even smaller with some correlations reaching significance and others not. For husbands, the expressed understanding score produced the strongest relationship with the problem solving communication codes. Although the trend for the comfort code was for weaker for the husbands than it was for the wives, this code did produce a significant correlation with many of the communication codes for husbands. Notably, in most cases, the correlations regarding problems solving communication appeared to be more robust than the correlations for other measures of general marital functioning. However, in both cases, the articulation code for husbands produced consistently unimpressive results.

To determine the extent to which communication during the Empathy Exercise predicted divorce over a three-and-a-half year period, a series of t-tests were computed comparing the group of stable couples with the group of couples who divorced. The results of these analyses are reported in Table 7.3. For women, both comfort and articulation were predictive of divorce. There was about two standard deviations of difference between the two groups on the comfort variable and about one-and-three-quarter standard deviations of difference between the two groups on the articulation variable. Notably, this is a similar magnitude of difference as was observed when the communication codes for the conflict resolution discussions were used to predict divorce. However, in contrast to the results for the conflict resolution discussions, the codes for

Table 7.3

Empathy Exercise Predicting Divorce

	Intact Couples (n = 30)		Divorced Couples (n = 4)		
	Mean	sd	Mean	sd	t-value
Wives					
Comfort	3.78	.60	2.50	.79	3.89***
Articulation	3.76	.48	2.83	.88	3.27**
Understanding	3.46	.78	3.17	.88	0.69
Husbands					
Comfort	3.71	.69	3.25	.32	1.31
Articulation	3.61	.71	3.67	.27	0.15
Understanding	3.51	.85	3.50	.69	0.03

** p < .01, *** p < .001

the Empathy Exercise were not consistently significant. The understanding code did not

reach significance for wives, and none of the codes reached significance for husbands.

To analyze the extent to which communication during the Empathy Exercise

predicted change in satisfaction over 3.5 years, regression analysis was used. As

previously mentioned, 26 couples in the study completed the Satisfaction subscale on the

DAS at the 3.5 year follow-up assessment. Each predictor variable was entered into a

regression equation predicting satisfaction at time two after controlling for satisfaction at

Table 7.4

Empathy Exercise Predicting Change in Marital Satisfaction

	Correlation	Standardized Beta [a]	t-value
Wives (n = 25)			
Comfort	.42	.22	1.53
Articulation	.07	.13	0.89
Understanding	.29	.28	2.07*
Husbands (n = 22)			
Comfort	.28	.14	0.80
Articulation	.11	.02	0.12
Understanding	.46	.34	2.17*

[a] Controlling for satisfaction at time one

* $p < .05$

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time one. The standardized beta weights for each predictor variable, along with significance tests for each beta weight, are reported in Table 7.4. The results are somewhat surprising. In all the analyses up to this point, the comfort variable consistently produced the strongest results. However, in predicting change in satisfaction over time, comfort was not significant, and instead, the expressed understanding variable was significant for both wives and husbands.

Discussion

Bradbury, Cohan, and Karney (1998) have suggested that a key adaptive process that is characteristic of stable and satisfying marriages involves the ability of both partners to provide support to each other. The present project builds on the work of Pasch and Bradbury (1998), who found that couples' skills in providing social support to each other are predictive of both concurrent and longitudinal marital outcomes. The present study, using a notably different assessment procedure, provides additional evidence that couples' skills in providing social support are indeed important. Specifically, comfort with the task of sharing one's own feelings and demonstrating understanding for partner feelings was highly correlated with several measures of concurrent marital functioning. In addition, wives' comfort with this task, as well as wives' ability to clearly express their own thoughts and feelings for their partners, was predictive of divorce. Finally, an ability to demonstrate understanding of partner thoughts and feelings was predictive of change in satisfaction over time for both wives and husbands. Notably, Karney and Bradbury's (1995) review of longitudinal marital research suggests that previous studies regarding communication in conflict-resolution conversations have produced effect sizes in the same range as the effect sizes produced in

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the present study for predicting longitudinal outcomes. This supports the possibility that communication in both contexts may be important in understanding marital process.

The results regarding concurrent marital functioning were particularly interesting in that the affectively-oriented comfort code produced consistently significant results whereas the other two communication skills codes did not. It appeared to be more important for spouses to feel comfortable in sharing their thoughts and feelings than for them to possess good skills in articulating their thoughts and feelings. This raises the possibility that attachment theory may provide a good frame for understanding behavior in conversations where spouses give and receive emotional support for daily hassles. Feeney (1999) has found that individuals fitting an insecure attachment style are more hesitant to share personal emotions with their partners than are individuals who fit a more secure style of attachment. Possibly, over the course of a relationship, spouses develop "working models" regarding the extent to which they believe their partners will be a "secure base" – that is, the extent to which a partner will show understanding, support, and empathy in response to one's own encounters with outside hassles and stressors. A person who is not confident that his or her partner will provide support may not feel comfortable sharing feelings with his or her partner. Along this line, it would be useful for future research to investigate the extent to which comfort in sharing feelings during a conversation about daily hassles might be best understood as an indicator of attachment to one's partner, and if so, whether this form of attachment is particularly important in predicting marital functioning. The importance of supportive conversations may lie in the extent to which these conversations reflect and/or nurture a kind of attachment bond between partners.

The results for the expressed understanding code were notable in light of an earlier study conducted by Gottman, Coan, Carrere, and Swanson (1998). These researchers found that, when discussing areas of relationship conflict, couples rarely paraphrase each other and they rarely directly validate each others' feelings. They also found that marital outcomes were not significantly predicted by an "active listening" variable, a behavioral code that was defined by a sequence of behavior in which the negative affect expressed by one partner is followed by a positive response from the other partner. Although there is room to question whether this particular operationalization of active listening entirely captures the intended construct, the overall findings from this study led Gottman, Coan, Carrere, and Swanson to conclude that paraphrasing skills may not be highly salient in marital process. Toward this end, they suggest that the "active listening model of marital therapy," which is widely supported by many clinical researchers and theorists (e.g., Markman, Stanley, & Blumberg, 1994), may actually be "expecting a form of emotional gymnastics from people who, at that moment in that relationship, are somewhat emotionally disabled by conflict" (p. 18).

On one hand, some of the results in the present study would support this conclusion. For example, the expressed understanding code, which directly assesses a couple's ability to paraphrase each other, did not significantly predict divorce. On the other hand, the present results suggest it would be premature to dismiss the importance of the skill of paraphrasing one's partner. Although most correlations between the expressed understanding code and measures of concurrent marital functioning did not reach significance, the direction and magnitude of these results are suggestive of the possibility that the present study simply lacked power to detect effects that may have

been present. More importantly, it is notable that, in spite of the small sample size, expressed understanding did predict change in satisfaction over time for both wives and husbands. This would suggest that an ability to paraphrase one's partner when called upon to do so, at least in the context of supportive conversations, is a skill that serves an important function in determining change in marital satisfaction over time.

The results pertaining to divorce were interesting in that both the comfort code and the articulation code were significant for wives, yet no code reached significance for husbands. Notably, these results parallel the results of Pasch and Bradbury (1998). In their study, they categorized couples into three groups based on their satisfaction and relationship status at the time of a longitudinal follow-up assessment: highly satisfied, satisfied, and distressed/divorced. After controlling for satisfaction at time one, they found that behaviors involving giving support and eliciting support were predictive of satisfaction at time two for wives only and not for husbands. As in the present study, wives' behavior was more predictive than husbands' behavior of longitudinal relationship outcomes involving divorce. Interestingly, in their research on couples' perceptions of receiving support from each other in conversations about life stressors, Carels and Baucom (1999) found that wives' perceptions were most influenced by their husbands' actual behavior whereas husbands' perceptions were most influenced by their own global sentiment toward the relationship. Taken in conjunction with Gottman's (1994) suggestion that wives are often the barometers of the relationship, it is possible that wives' support- giving behavior in discussions about daily hassles is a strong indicator of the true state of the relationship. That is, wives' behavior may be more directly related to actual relationship interactions and more predictive of future relationship outcomes.

Taken together, the present study builds on previous research regarding communication in non-conflict, supportive conversations. Results were suggestive of the possibility that wives' comfort, along with paraphrasing skill for both partners, is predictive of longitudinal marital outcomes. However, specific differences between variables and differences between outcomes for wives and husbands need to be interpreted cautiously given that the sample used in the present study was small, and thus, the range of possible error variance was large. Results, then, are most informative to the extent that they replicate previous findings. Thus, we can be most confident of the general finding that communication in supportive conversations is predictive of marital outcomes, and we can be moderately confident of the finding that wives' communication is more predictive of divorce than husbands' communication. However, other findings that are more unique to the present study need to be replicated in further research. Along this line, it would be useful for future research to further explore the importance of paraphrasing skill and to investigate relationships between comfort, attachment, and marital process.

APPENDIX A

Materials and Questionnaires

APPENDIX A

Materials and Questionnaires

This appendix includes reproductions of the new questionnaires and assessment materials that were created for use in this study. In addition to questionnaires, this appendix includes written instructions that were given to participants and verbal instructions that were read to participants by an experimenter. The materials are organized according to the order in which they were used in the study. Specifically, this appendix includes: (1) the Specific Incident Instruction Page that was given to participants directing them to choose topics to discuss in their upcoming problem solving discussions, (2) the Hassles List, (3) the Empathy Exercise instructions that were read to participants prior to the exercise, (4) the Empathy Exercise Instruction Notebook that participants used during the exercise, (5) the Schema of Partner Empathic Responding to Anger (SOPERA) questionnaire, (6) the Memory Accessibility of Partner Not Understanding (MAPNU) instruction page that was given to participants explaining this four minute recall task, (7) the Partner Prediction Form, (8) the Problem Solving Exercise instructions that were read to participants prior to the exercise, (9) the Possible Explanations attribution questionnaire, and (10) the Follow-Up Questionnaire.

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Specific Incident Instructions

Research has demonstrated that all married couples experience conflict from time to time, and that couples use a wide variety of styles in resolving their conflicts. We believe that the process of conflict resolution, in all its many forms, adds a component of beauty and mystery to intimate relationships. Accordingly, we want to find out how couples discuss and resolve important issues in their relationships.

We are going to ask you to have two conversations with your spouse today regarding an unresolved issue (such as, something you wish your partner would change, a conflict, something in your relationship that makes you angry, or something in your relationship that is annoying).

Please pick two specific incidents that you believe illustrate the most relevant, and important <u>unresolved</u> issue or issues in your relationship. We simply want to make sure that both conversations are based on an actual event, and that you are clear on exactly what that specific event is.

- If you need ideas, you are welcome to look over the questionnaire entitled "Areas of Change Questionnaire."

- The two incidents you choose may be related to the same general issue, or they may be related to completely unrelated issues.

- If you have difficulty thinking of two *unresolved* incidents, you may substitute an incident that has already been resolved. If you do need to substitute a resolved issue, we ask that you <u>reenact</u> the problem solving process in your upcoming conversation, and that you discuss the issue as if it still needed to be resolved.

Use one piece of scratch paper for each incident and write a brief note answering the three following questions:

1. When did the incident take place?

2. Where did the incident take place?

3. In *one sentence or less*, what happened?

Put one piece of paper in the envelope labeled "Most Important Specific Incident." Although a topic for discussion, your partner will not actually *see* this piece of paper.

Put the other piece of paper in the envelope labeled "Second Most Important Specific Incident." Your partner <u>WILL</u> SEE THIS PIECE OF PAPER.

Hassles List

This page contains a list of hassles that people commonly face. We are going to ask you to have a conversation with your partner in which you share your feelings about one of the following items.

Please read through the list and choose one item which is most relevant or significant to you right now. Please place an "X" in the box next to the item you choose.

- ☐ Troublesome neighbors
- ☐ Social obligations
- ☐ Troubling thoughts about your future
- ☐ Thoughts about death
- ☐ Health of a family member
- ☐ Bad feelings toward a non-family member
- ☐ Too many responsibilities
- ☐ Concerned about the meaning of life
- ☐ Trouble relaxing
- ☐ Being lonely
- ☐ Problems getting along with fellow workers
- ☐ Customers or clients give you a hard time
- ☐ Feeling "not good enough"
- ☐ Worrying
- ☐ Don't like fellow workers
- ☐ Bad feelings with children
- ☐ Bad feelings with parents
- ☐ Fear of confrontation
- ☐ Physical appearance
- ☐ Fear of rejection
- ☐ Conflict with non-family member
- ☐ Conflict with children
- ☐ Concerns about health
- ☐ Friends or relatives too far away

- ☐ Time pressure and/or deadlines
- ☐ Conflict with parents
- ☐ Auto maintenance
- ☐ Felt annoyed with a non-family member
- ☐ Problems with employees
- ☐ Under pressure at work (or school)
- ☐ Declining physical abilities
- ☐ Being exploited
- ☐ Felt annoyed with children
- ☐ Not enough time
- ☐ Job dissatisfaction
- ☐ Concerns about weight
- ☐ Felt annoyed with parents
- ☐ Concerns about getting ahead
- ☐ Hassles from boss or supervisor
- ☐ Difficulties with friends
- ☐ Concerns about news events
- ☐ Missed someone
- ☐ Wanted more friends
- ☐ Dissatisfaction with social life
- ☐ Housework
- ☐ Feeling anxious
- ☐ Having a "bad day"
- ☐ Felt inferior
- ☐ Felt sad
- ☐ Felt vulnerable

Empathy Exercise
Instructions Read to Participants Prior to Exercise

The first activity for today is called an empathy experience. You should each be holding your completed Hassles List, and you will be asked to share the items you checked with each other. For this exercise, you will NOT be discussing the specific incident papers you placed in the envelopes. This exercise is an opportunity for you to demonstrate your ability to <u>listen</u> to your partner, and to <u>reflect</u> what it is you have heard.

This notebook contains instructions which will guide you through this exercise. It is important that you do ONLY what the instructions tell you to do, and that you do EXACTLY what the instructions tell you to do. For example, if the instructions say lean toward your partner and make eye to eye contact, it is important that you do so.

[Subjects are handed the "Empathy Experience Instructions."]

A practice exercise begins on page 1. It involves sharing a rather trivial topic just to make sure you understand the procedure. I will run through this practice with you and then leave the room for the actual exercise. Share the notebook so you can both read the instructions. After you have both read the first page, go ahead and do just exactly what it says.

Empathy Exercise Instruction Notebook

Page 1

Husband:
- Do not talk. Listen closely to your wife (you will be asked to remember foods that she lists).
- Also, try to make your wife feel that you are listening intently and closely to what she is saying. Lean slightly toward her in your chair, look directly at her eyes and face, and let your face show that you care about her.
- Do not turn the page. Wait for your wife to turn to the next set of instructions.

Wife:
- Think of a few of your favorite foods, and then tell your husband: "My favorite foods are _____"
- After telling your husband, turn the page to reveal the next set of instructions.

Page 2

Wife:
- Do not talk, relax and enjoy the feeling of being listened to by your partner.
- Do not turn the page. Wait for your husband to turn to the next set of instructions.

Husband:
- It is now your turn to <u>convince</u> your wife that you have been listening closely, and that you have an <u>accurate understanding</u> of her favorite foods.
- This is a paraphrase section of the exercise. DO NOT offer your own opinion, DO NOT give your own viewpoint, and DO NOT offer any of your own ideas or solutions.
- Please reflect what your wife has just told you by paraphrasing her message. Rather than repeating what she said word for word, tell her: "So, a special meal for you would include _____"
- After giving an empathic and understanding paraphrase, turn the page to reveal the next set of instructions.

Page 3

> **Wife:**
> - Do not talk. Listen closely to your husband (you will be asked to remember foods that he lists).
> - Also, try to make your husband feel that you are listening intently and closely to what he is saying. Lean slightly toward him in your chair, look directly at his eyes and face, and let your face show that you care about him.
> - Do not turn the page. Wait for your husband to turn to the next set of instructions.
>
> **Husband:**
> - Think of a few of your favorite foods, and then tell your wife: "My favorite foods are _____"
> - After telling your wife, turn the page to reveal the next set of instructions.

Page 4

> **Husband:**
> - Do not talk, relax and enjoy the feeling of being listened to by your partner.
> - Do not turn the page. Wait for your wife to turn to the next set of instructions.
>
> **Wife:**
> - It is now your turn to <u>convince</u> your husband that you have been listening closely, and that you have an <u>accurate understanding</u> of his favorite foods.
> - This is a paraphrase section of the exercise. DO NOT offer your own opinion, DO NOT give your own viewpoint, and DO NOT offer any of your own ideas or solutions.
> - Please reflect what your husband has just told you by paraphrasing his message. Rather than repeating what he said word for word, tell him: "So, a special meal for you would include _____"
> - After giving an empathic and understanding paraphrase, turn the page to reveal the next set of instructions.

Page 5

STOP.

You have completed the practice exercise. Wait until you are told to continue before turning the page.

Page 6

Wife:

- Please tell your husband about your feelings regarding the item you checked on the Hassles List you are holding in your hand. As much as possible, focus on describing your own feelings, your own thoughts, and your own perceptions.
- Try to limit your description to five minutes.
- When you are finished, turn the page to reveal the next set of instructions.

Husband:

- Listen to your wife and do not talk. Demonstrate your ability to listen and your ability to show attentive nonverbal messages via eye to eye contact, body posture, and facial expression.
- Do not turn the page. Wait for your wife to turn to the next set of instructions.

Page 7

Wife:

- Listen to your husband and do not talk. Do not try to find faults or mistakes in his presentation. Rather, focus on the ways he is accurate and empathic, and enjoy the feeling of being understood.
- Do not turn the page. Wait for your husband to turn to the next set of instructions.

Husband:

- Please paraphrase your wife's feeling message. In your own words, convince her that you understood what she was communicating. Demonstrate your ability to give an accurate and genuine reflection.
- Limit your paraphrase to five minutes.
- When you are finished, turn the page to reveal the next set of instructions.

Husband:
- Please tell your wife about your feelings regarding the item you checked on the Hassles List you are holding in your hand. As much as possible, focus on describing your own feelings, your own thoughts, and your own perceptions.
- Try to limit your description to five minutes.
- When you are finished, turn the page to reveal the next set of instructions.

Wife:
- Listen to your husband and do not talk. Demonstrate your ability to listen and your ability to show attentive nonverbal messages via eye to eye contact, body posture, and facial expression.
- Do not turn the page. Wait for your husband to turn to the next set of instructions.

Husband:
- Listen to your wife and do not talk. Do not try to find faults or mistakes in her presentation. Rather, focus on the ways she is accurate and empathic, and enjoy the feeling of being understood.
- Do not turn the page. Wait for your wife to turn to the next set of instructions.

Wife:
- Please paraphrase your husband's feeling message. In your own words, convince him that you understood what he was communicating. Demonstrate your ability to give an accurate and genuine reflection.
- Limit your paraphrase to five minutes.
- When you are finished, turn the page to reveal the next set of instructions.

THE END.

You have completed this experience. Please knock on the door to let the research assistant know you are done.

SOPERA Questionnaire

Spouse Response to Angry Feelings

All married people experience anger toward their spouse from time to time. The purpose to this questionnaire is to get a general history of the ways your spouse responds to your angry feelings when they arise. That is, on those occasions when you get angry, what does your spouse do? Please read each item, then place an "X" in the box indicating how often this particular event occurs in your marriage.

		Always	Often	Sometimes	Rarely	Never
1	My spouse interrupts me when I try to explain angry feelings.	5	4	3	2	1
2	In disagreements, it is difficult to get my spouse to see my view.	5	4	3	2	1
3	My spouse incorrectly assumes reasons why I do things.	5	4	3	2	1
4	My spouse listens to me when I feel angry.	5	4	3	2	1
5	When I try to explain angry feelings, my spouse patiently lets me finish whatever I have to say.	5	4	3	2	1
6	My spouse understands my true feelings.	5	4	3	2	1
7	In disagreements, my spouse jumps to conclusions about what I am thinking or feeling.	5	4	3	2	1
8	When I get angry, my spouse withdraws and gets quiet.	5	4	3	2	1
9	My spouse becomes defensive when I get angry.	5	4	3	2	1
10	When I get angry, my spouse sincerely tries to see my view of things.	5	4	3	2	1
11	After a disagreement, my spouse has an accurate understanding of my feelings.	5	4	3	2	1
12	When I try to explain angry feelings, my spouse sincerely tries to understand.	5	4	3	2	1

13	It is <u>useless</u> to try to get my spouse to understand something I am angry about.	5	4	3	2	1
14	It is better to keep angry thoughts to myself because my spouse would just overreact.	5	4	3	2	1
15	When I get angry, I repeat myself because my spouse will not listen.	5	4	3	2	1
16	With me and my spouse, anger eventually leads to increased intimacy and understanding.	5	4	3	2	1
17	My spouse becomes critical when I try to explain angry feelings.	5	4	3	2	1
18	My spouse yells at me when I try to explain angry feelings.	5	4	3	2	1
19	When I feel angry, my spouse refuses to talk about it.	5	4	3	2	1
20	My spouse walks out when I try to explain angry thoughts.	5	4	3	2	1

MAPNU Instruction Page

What I wish my spouse understood

In all marriages spouses often experience feelings of being NOT UNDERSTOOD by their partner. Can you think of the times in your relationship when your spouse did not understand your perceptions, feelings, beliefs, motives, attitudes, or wishes? Please try to remember as many of these experiences as possible, both recent experiences and events from many years ago.

For this questionnaire, you will have a time limit of four minutes to briefly write down as many experiences of not being understood as possible.

IMPORTANT:
- Limit each entry to <u>ten words or less</u>
- Number your responses
- Use a separate sheet of paper to record your entries

Examples:

> If your partner doesn't understand how much you would like a pet, you might write:
> *"1. The pet issue"*

> If your partner made an incorrect assumption and accused you of having certain motives or attitudes while you were talking in the kitchen, you might write:
> *"2. In the kitchen"*

> If your partner does not understand how you perceive a certain habit as indicating a lack of respect, you might write:
> *"3. My need for respect"*

Wait until you are told to begin, then, using a separate sheet of paper, write down as many experiences of not being understood as you can remember in four minutes.

Partner Prediction Form

We are about to ask you to have a conversation with your partner discussing the issue you placed in the envelope entitled "Second Most Important Specific Incident" just prior to the first exercise.

Please predict what you think your partner will do in this upcoming conversation. Is your partner likely to come to understand what you are feeling and thinking about this issue? Please rate the degree to which you believe your partner is likely to come to understand your feelings, thoughts, desires and motives on a scale of one to five, and circle your response.

Note: you do not need to worry about precise definitions or distinctions between feelings, thoughts, desires and motives. Simply go with your first response and answer quickly.

My partner will likely not at all understand what I am feeling	1 2 3 4 5	My partner will understand completely what I am feeling
My partner will likely not at all understand what I am thinking.	1 2 3 4 5	My partner will understand completely what I am thinking.
My partner will likely not at all understand what I want and desire.	1 2 3 4 5	My partner will understand completely what I want and desire.
My partner will likely not at all understand my motives (why I do what I do)	1 2 3 4 5	My partner will understand completely my motives (why I do what I do)

Problem Solving Exercise
Instructions Read to Participants Prior to Exercise

Each of you should be holding an envelope containing your partner's second most important specific incident. We would now like you to have two 10 minute discussions together, one for each of these two envelopes you are currently holding.

It is up to you to decide which envelope to discuss first and which envelope to discuss second. That is, choose one, and only one, envelope to discuss for the entire 10 minute discussion, and set the other envelope aside for later. In fact, we request that you set this envelope on the ground, and do not talk about it for the entire 10 minute discussion. The selected envelope should be opened and read out loud so that both of you know what is written on the piece of paper, for this is to be the topic of your 10 minute discussion.

Your goal is to resolve the issue.

Realize, however, that most people can not resolve an important issue in just 10 minutes. If by chance you do, simply spend the rest of your time talking about related thoughts and feelings. Please do not go on to other topics.

After 10 minutes, you will hear the beeper, I will knock, wait a few seconds, and then return. I will have a short questionnaire for you to complete, then we will proceed to the second envelope. Remember, your goal is to resolve the issue best as you can. You may begin when I close the door behind me.

Possible Explanations

The conversation you have been having for the last 10 minutes was started by opening an envelope containing a single specific incident written down on a scratch piece of paper. The following question has to do with your partner's behavior *in this actual specific event*, NOT in your recent 10 minute discussion.

List the possible reasons, motivations, or explanations for your partner's behavior in the specific incident listed on the piece of paper. Why do you think your partner did what he or she did? List the most likely explanations for your partner's behavior in the space below. Even if your conversation strayed from the original topic, please ONLY give explanations for the incident described on the piece of paper. You may list up to 6 explanations.

1.

2.

3.

4.

5.

6.

Now take a moment to consider reasons, motivations, or explanations for your own behavior in the specific incident listed on the piece of paper. Why did you do what you did? List the best explanations for your own behavior in the space below. Even if your conversation strayed from the original topic, please ONLY give explanations for the incident described on the piece of paper. You may list up to 6 explanations.

1.

2.

3.

4.

5.

6.

Follow-up Questionnaire

1. Please check a box to indicate the status of your relationship since your participation in the research project:

☐ We are still married to each other and living together   ☐ My partner has died

☐ We are currently separated   ☐ We have divorced

2. Please check a box to indicate your gender: ☐ Male   ☐ Female

---

If you are still married to each other and living together, please answer the following questions. Please do NOT discuss these questions with your partner or share your answers until after you both have completed your questionnaires and sealed them in their envelopes.

	All the time	Most of the time	More often than not	Occa-sionally	Rarely	Never
3. How often do you feel love for your partner?	5	4	3	2	1	0
4. How often do you or your mate leave the house after a fight?	5	4	3	2	1	0
5. In general, how often do you think that things between you and your partner are going well?	5	4	3	2	1	0
6. Do you confide in your mate?	5	4	3	2	1	0
7. Do you ever regret that you married?	5	4	3	2	1	0
8. How often do you and your partner quarrel?	5	4	3	2	1	0

9. How often do you and your mate "get on each others' nerves?"	5	4	3	2	1	0
10. How often do you discuss or have you considered divorce, separation, or terminating your relationship?	5	4	3	2	1	0
11. How often do you think about how things would be if you divorced?	5	4	3	2	1	0
12. How often do you think that your relationship is headed for divorce?	5	4	3	2	1	0

13. The numbers on the following line represent different degrees of happiness in your relationship. The middle point, "happy," represents the degree of happiness of most relationships. Please circle the number which best describes the degree of happiness, all things considered, of your relationship.

Extremely unhappy	Fairly unhappy	A little unhappy	Happy	Very happy	Extremely happy	Perfect
0	1	2	3	4	5	6

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APPENDIX B

Proportion of Variance Explained in HLM Analyses

APPENDIX B

Proportion of Variance Explained in HLM Analyses

Previous tables involving HLM results for this study have provided parameter estimates derived from various HLM equations. In addition to calculating parameter estimates and significance tests, it is possible to calculate the percent or proportion of variance that is explained by the predictor variable (or variables) included in each equation. Bryk and Raudenbush (1992) provide equations for estimating the proportion of variance explained at specific levels of analysis. These equations were used to estimate both the proportion of variance explained at the level of the person and the proportion of variance explained at the level of the conversation for all the previously reported HLM results. The results of this analysis are listed on the following tables.

Table A.1

Proportion of Variance Explained Using Communication to Predict Attributional Blame

	Attributional Blame			
	Person Level		Conversation Level	
	Variance Explained		Variance Explained	
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	.20	.34	.00	.00
Response	.28	.50	.00	.01
Emotion	.12	.27	.00	.00
Listening	.18	.37	.00	.00
Partner Behavior				
Own Views	.22	.48	.00	.00
Response	.20	.43	.00	.00
Emotion	.17	.26	.01	.00
Listening	.19	.34	.00	.00

Note. Results correspond with Table 4.5 in Chapter 4.

Table A.2

Proportion of Variance Explained Using Communication to Predict Attributional Concurrence

| | Attributional Concurrence | | | |
| | Person Level Variance Explained | | Conversation Level Variance Explained | |
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	.19	.43	.00	.00
Response	.33	.53	.00	.00
Emotion	.32	.21	.00	.00
Listening	.36	.45	.00	.05
Partner Behavior				
Own Views	.02	.58	.04	.00
Response	.07	.21	.01	.08
Emotion	.02	.17	.01	.00
Listening	.05	.49	.00	.05

Note. Results correspond with Table 4.6 in Chapter 4

Table A.3

Proportion of Variance Explained Using Cognitive Expectancies to Predict
Communication

	Cognitive Expectancies			
	Person Level Variance Explained		Conversation Level Variance Explained	
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	.31	.41	.15	.00
Response	.36	.48	.08	.00
Emotion	.41	.40	.12	.00
Listening	.38	.40	.04	.00
Partner Behavior				
Own Views	.30	.28	.00	.00
Response	.34	.17	.05	.00
Emotion	.30	.09	.03	.14
Listening	.40	.20	.15	.00

Note. Results correspond with Table 4.7 in Chapter 4.

Table A.4

Proportion of Variance Explained in Speaking Turn Analyses

	Speaking Turn Variance Explained		Total Variance Explained
	Using All Partner Variables	Using All Self Variables	Using Base Rate, Influence, and Inertia[a]
Wives			
Own Views	.03	.09	.16
Response	.05	.05	.20
Emotion	.09	.07	.23
Listening	.22	.12	.34
Husbands			
Own Views	.05	.10	.27
Response	.07	.03	.19
Emotion	.10	.06	.20
Listening	.17	.08	.29

Note. Results correspond with Table 5.2, Table 5.3, and Table 5.5 in Chapter 5.

[a] Definitions for Base Rate, Influence, and Inertia are provided in Table 5.4.

Table A.5

Proportion of Variance Explained Using Issue Framing to Predict Communication

| | Issue Framing | | | |
| | Person Level Variance Explained | | Conversation Level Variance Explained | |
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	.34	.18	.04	.00
Response	.00	.29	.05	.00
Emotion	.00	.04	.01	.00
Listening	.00	.07	.01	.00
Partner Behavior				
Own Views	.05	.02	.00	.00
Response	.02	.00	.00	.00
Emotion	.00	.00	.00	.00
Listening	.04	.16	.00	.00

Note. Results correspond with Table 6.4 in Chapter 6.

Table A.6

Proportion of Variance Explained Using Issue Difficulty to Predict Communication

	Issue Difficulty			
	Person Level Variance Explained		Conversation Level Variance Explained	
	Wives	Husbands	Wives	Husbands
Self Behavior				
Own Views	.00	.14	.00	.00
Response	.00	.10	.02	.00
Emotion	.00	.00	.00	.00
Listening	.01	.12	.00	.00
Partner Behavior				
Own Views	.00	.00	.00	.00
Response	.00	.03	.23	.00
Emotion	.00	.00	.00	.06
Listening	.00	.01	.02	.00

Note. Results correspond with Table 6.5 from Chapter 6.

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