INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.
A PRELIMINARY INVESTIGATION OF A CODING SCHEME
TO ASSESS COMMUNICATION COMPETENCE IN THE
PRIMARY CARE MEDICAL INTERVIEW

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
The Degree of Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Kelly Susan McNeilis, B.A., M.A.

* * * * *

The Ohio State University
1995

Dissertation Committee
Donald J. Cegala
Bonnie J. Garvin
Dirk Scheerhorn

Approved by

Advisor
Department of Communication
ACKNOWLEDGMENTS

Many thanks are due to those who supported, encouraged, and otherwise pushed me to make this dissertation project what it is. To the physicians, office staff, and patients who so willingly allowed me to collect the data for this study. We spent many days in their “space” and never heard one complaint. To the staff in the Department of Communication at Ohio State, I always tried to greet you with a smile and you always had a smile in return and a sincere, “How’s it going?” Betty, you were always encouraging and ready with a hug, thanks.

To my faculty readers, Dr. Bonnie Garvin and Dr. Dirk Scheerhorn. You contributed to my overall progress in developing this project by offering valuable time and input. I appreciate your helpful and insightful suggestions on earlier drafts. Even though I had to drop Dr. Susan Kline from the committee at a late date, her comments were also helpful and I value the times we met and truly “talked.”

On a personal note, to my family and husband who tolerated my missing family get-togethers and never complained because I had to work. To Sean, you were “there” during the entire process whether you think so or not. Thanks for all the support and love. To the graduate students in my office, Liz, Marianne, and Deb: we had some great Thursdays out, and we all know how “essential” those nights were.
Last, but not least, I extend my heartfelt gratitude to my advisor and mentor, Dr. Donald J. Cegala. Despite our busy schedules, hectic lives, and unanticipated events, you always made time to see me and give me your fullest attention. I hope that in 20 years, I have half the enthusiasm and zest for learning that you have.
VITA

April, 1988  B.A. Communication Management: University of Dayton, Dayton, Ohio.


PUBLICATIONS


FIELD OF STUDY

Major Field: Communication Studies
TABLE OF CONTENTS

ACKNOWLEDGMENTS ..............................................................................................ii

VITA .......................................................................................................................... iv

LIST OF TABLES .......................................................................................................viii

LIST OF FIGURES ................................................................................................... ix

CHAPTER PAGE

I. SETTING A FRAMEWORK FOR ANALYZING DOCTOR-PATIENT COMMUNICATION ......................................................1

  Introduction .........................................................................................................1

  A Model of Communication Competence ..........................................................4

  Task Analysis .....................................................................................................9

    Information-Exchange in the Medical Interview ...............................................10

    Relational Development in the Medical Interview ..........................................24

  Summary .............................................................................................................30

II. THE CODING SYSTEM ........................................................................................32

  Purpose and Rationale .....................................................................................32

    Content Codes ................................................................................................34

    Management Codes .......................................................................................36

    Function Codes ..............................................................................................40

    Research Questions ......................................................................................49

III. METHOD ..........................................................................................................51

  Participants .........................................................................................................51

  Design ...............................................................................................................52

  Instrumentation ...............................................................................................54

    Post-Interview Questionnaire .......................................................................54

    Language Coding System ............................................................................59

  Data Analysis ..................................................................................................63
IV. RESULTS AND DISCUSSION ..........................................................................67
   Preliminary Analyses and Results .............................................................68
      Data Set One: Perceptions of Information Exchange and Relational Communication ..........................................................68
      Data Set Two: Selected Single-Item Scales ........................................70
      Data Set Three: Self- and Other-Competence Judgments ................72
      Data Set Four: Participants' Cognitive/Affective Responses ................73
   Distributional Characteristics of Language Categories .............................76
      RQ1 Results ..........................................................................................76
         Content .......................................................................................76
         Acknowledgment tokens and interruptions .....................81
         Functional Categories ......................................................................82
      Summary ..............................................................................................87
   Three Interactional Qualities of More and Less Competent Doctor-Patient Dyads .................................................................91
      Diagnostic and Treatment Information-Giving by Physicians ........92
         Frequency data .........................................................................92
         Interpretive data .........................................................................95
         ANOVA results ............................................................................106
      Topic Alignment, Positivity, and Attentiveness ................................110
         Frequency data .........................................................................110
         Interpretive data .........................................................................114
         ANOVA results ............................................................................128
      Patient Involvement and Physician Follow-up ................................131
         Frequency data .........................................................................131
         Interpretive data .........................................................................137
         ANOVA results ............................................................................145

V. IMPLICATIONS AND CONCLUSIONS ............................................................148
   Introduction .....................................................................................................148
      Communication Competence in the Medical Interview ......................150
         Explanation of Diagnosis and Treatment .......................................151
         Topic Alignment and Relational Sensitivity ................................156
         Patient Questions and Topic Follow-Through ................................159
      Limitations ..............................................................................................162
   Project Design and Data ............................................................................162
   Coding Scheme ..........................................................................................164
      General Observations ........................................................................164
      Coding System Assessment and Modifications ...............................164
         Depth/quality of functional categories ..............................................166
Future Directions for Research on Physician-Patient Interaction

APPENDICES

REFERENCES

NOTES
LIST OF TABLES

TABLE PAGE

1. Frequency and Percentage of Language Categories by Role with F values ................................................................. 78

2. Frequency of Selected Informational Categories by Competent Groups ...................................................................................... 93

3. Frequency Distribution of Relational Categories by Competent Groups ...................................................................................... 112

4. Frequency of Patient Questions by Competent Group and Content .......................................................................................... 132

5. Frequency of Doctors’ Issue Responsive Answers by Competent Group and Content .............................................................. 135
<table>
<thead>
<tr>
<th>FIGURES</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Relationship of text to processes and first competence feature</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Relationship of text to processes and second competence feature</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Relationship of text to processes and third competence feature</td>
<td>146</td>
</tr>
</tbody>
</table>
CHAPTER I

SETTING A FRAMEWORK FOR ANALYZING
DOCTOR-PATIENT COMMUNICATION

Introduction

In the last two decades, health communication research has surfaced as a field of applied communication inquiry that examines the impact of human communication on the delivery of health care to individuals (Arnston, 1985; Kreps, 1988; Thompson, 1984, 1994). One aspect of health communication research is the study of the role of interpersonal communication in developing effective health care provider/consumer relationships (Thompson, 1994). This research has given considerable attention to social/communicative aspects of health care and clearly shows that the interpersonal communication between health care providers and consumers plays a significant role in health care delivery (e.g., Beisecker, 1990; Hall, Roter & Katz, 1988; Korsch, 1989; Pendleton, 1983; Pettigrew & Logan, 1987; Roter, 1989; Roter, Hall & Katz, 1988; Thompson, 1994; Waitzkin, 1984).

Even though considerable attention over the last 20 years has been devoted to physician-patient communication, little is actually known about the relationship between communicative processes and health
outcomes (Korsch, 1989; Stiles, 1993; Street, 1991). Although many factors possibly contribute to this lack of knowledge, one important factor is the way in which communication has been defined and examined in previous research. Early research in doctor-patient communication relied almost exclusively on post-interview surveys (e.g., Francis, Korsch, & Morris, 1969; Korsch & Negrete, 1972; Korsch, Gozzi, & Francis, 1968). Surveys of communicative behaviors are limited because they lack the necessary detail to assess the actual dynamics of the interaction and there is evidence that recall of conversation is poor (Stafford & Daly, 1984). Recently, researchers have examined doctor-patient communication more directly using one of three approaches: rating scales, content analysis, or conversation analysis.

Rating scales consist of categories of desired and undesired communication behaviors that are then used by observers to identify and record the occurrence of behaviors on the part of the physician and/or patient. These rating scales are applied to interactions either during direct observation of interviews or through the use of audio or video taped interviews. Although the use of rating scales involves the direct assessment of doctor-patient interaction, the method is not particularly useful for examining the interdependent nature of doctors' and patients' communication.

A second approach involves coding schemes consisting of discrete language categories that are used for conducting content analysis of medical interviews. Most of the research into doctor-patient communication uses this approach, and as such, there is a proliferation of
language coding schemes in the literature (for reviews see Beisecker, 1990; Hall et al., 1988; Inui, Carter, Kukull, & Haigh, 1982; Pendleton, 1983; Roter, 1989; Roter et al., 1988). While content category schemes are an improvement over rating scales, few of these coding systems are grounded in a theoretical framework about medical communication (Pendleton, 1983; Street, 1991c). Additionally, few of the coding schemes are designed to assess the sequential development of talk (i.e., how participants' utterances are related on a turn-by-turn basis). Thus, while content coding schemes are an improvement over rating scales, most existing schemes, or their application, do not adequately reflect the interactive nature of doctor-patient interaction.

Most of what would be considered interactively-based research into doctor-patient communication follows a third approach, the tradition known as conversation analysis (see Atkinson & Heritage, 1984; Koch & Mendelbaum, 1986). Detailed transcripts of the interaction are made and the researcher conducts a micro-analysis of participants' talk on a turn-by-turn basis (e.g., Frankel, 1984; Todd, 1984; West, 1984a, 1984b). Although the strength of this approach is its emphasis on the sequential development of talk, the method of conversation analysis generally is not used for making comparisons among treatment groups, assessing distributional characteristics, assessing patterns of interaction over large samples of subjects, or quantitatively relating observed communication patterns to outcome variables.

What is needed at this point is an approach to physician-patient interaction that reflects a value for the sequential development of talk that
is found in conversation analytic research, but which employs more
traditional social science assessment methods (see Roter & Frankel, 1992).
Such an approach entails the identification and examination of variation
and use of sequential properties of conversation, and how individuals use
them to fulfill their goals. The purposes of this research are to (1) develop
a content category scheme that reflects the sequential development of
participants’ talk and (2) provides an initial evaluation of the category
scheme by using both quantitative and interpretive assessment
procedures.

The conceptual framework for the development of the category
scheme centers on a model of communication competence, which
emphasizes and privileges the sequential properties of language-in-use.
The model views competent communication in terms of participants’
ability to align their utterances in the service of meeting both self and
other goals. In the remaining section of the chapter, the model is
discussed then applied to the medical interview context.

A Model of Communication Competence

Health communication scholars such as Kasch (1984), Kreps and
Query (1989) and Morse and Piland (1981) have proposed that the concept
of communication competence is an appropriate framework for providing
enhanced understanding and explanation for the interactive nature of
communication in the delivery of health care. Generally, research in
communication competence asserts the position that in certain contexts,
some behaviors are considered more effective in terms of meeting goals.
Current definitions of interpersonal communication competence usually
include one or more of the following characteristics: it is determined by both conversational partners, it involves knowledge of how to communicate, it references actual communicative behavior, and it reflects the communicator’s success at achieving goals (Parks, 1995). For example, competence theorists espouse that use of specific message tactics which are responsive to effectiveness and social appropriateness (Canary & Spitzberg, 1989; Spitzberg & Cupach, 1984), are person-centered (Applegate, 1990), and show knowledge of the communication practices of a particular setting (Cegala & Waldron, 1992) satisfy the requirements of competent behavior. In other words, competence involves “knowing,” “knowing how,” “doing,” and “knowing what we did” (Parks, 1995).

The Cegala and Waldron (1992) competence model is guided by four assumptions, each of which reflects a synthesis of contemporary theorizing on competence. First, competence is best defined by how conversational participants align their utterances in coordinating goals (also see Delia & O’Keefe, 1982; Pearce & Cronen, 1980). Second, any definition of competence must be specified in terms of the context in which it is being investigated (Fisher, 1982; Watzlawick, Beavin, & Jackson, 1967), such that competence evaluations are located in situational demands. Third, competence is viewed as a dyadic phenomenon, and is defined in terms of patterns of interaction over time (Watzlawick et al., 1967). Fourth, individual differences in competence are accounted for partly in terms of participants’ cognitive/affective processes which involve the interpretation and production of messages as interaction unfolds (also see Applegate, 1990; Burleson, 1984; Delia & O’Keefe, 1982).
By placing a premium on performance, the Cegala and Waldron model makes communicative practices central to competence. As a by-product of this, there is a focus on how contexts shape and constrain participants' use of communication. Specifically, their approach is to define interpersonal communication competence in terms of participants' effectiveness in coordinating their goals and the appropriateness with which that is accomplished. Utterances that effectively meet a participant's goals, and at the same time are reflective of an understanding and accommodation of the other's goals, are defined as competent (See also Spitzberg & Cupach, 1984). Such a focus on language-in-use necessarily entails attention to the contextual features which prompt, reinforce, and constrain participants' goals and their implementation through communicative acts (See also Delia & O'Keefe, 1982; Pearce & Cronen, 1980).

Clearly, these assumptions are not entirely new in terms of defining competence. There is a history of different terms in the competence literature such as listener adaptiveness and multiple goal message tactics which reflect similar assumptions. What is different about various approaches to competence are the methods for how key constructs are measured. Understanding these components and the implications for how they get operationalized within the Cegala and Waldron framework requires further explanation of the four assumptions.

To begin with, this context-based model of competence places emphasis on the language used by the participants. Investigating competence at the point of performance involves examining the
utterances of participants and how they are connected. The emphasis on performance in this case implicitly points to examining how participants align their utterances in coordinating their goals. Specifically, this approach to goal coordination in the Cegala and Waldron model is situated in a rational model of coherent conversation advanced by Jacobs and Jackson (1983). Jacobs and Jackson argue that there is an “orderly output of practical reasoning about goals” (p. 51) that we can point to in explaining why conversation is coherent, structured, and organized. The coordination between and among peoples’ behavior is a function of the pursuit of their own goals and adaptation to others’ goals. This is how the structure of conversation is explained.

More specifically, Jacobs and Jackson (1983) argue that coherent conversation has two properties: goal orientation and alignment. From a game metaphor, participants follow conversational rules and within that rule structure they construct strategic moves to complete their goals. At the same time, they also must align their moves with the moves of others. Alignment, in this sense, means fitting communicative moves into some noticeable structure. In turn, this alignment results in coordination of communicative goals. Incoherent utterances are ones that appear not to pursue a goal, ignore others’ goals, or pursue goals irrationally (Jacobs & Jackson, 1983). This approach clearly preferences sequential coherence and coordination. This is a distinctive feature of the Cegala and Waldron (1992) model.

One way of finding out how participants reason about and pursue goals in conversation is by looking toward their language performance in
the context in which the interaction occurs. That communication is constrained and determined by its context is a taken-for-granted proposition in communication theory. However, not all theories foreground its impact on assessments of competence. Cegala and Waldron (1992) argue that an analysis of participants' discourse in terms of its coordination of contextually-based goals is the basis for operationalizing competence. The more effectively participants' coordinate their goal-relevant behavior through communication, the more competent they are. Such an approach to competence implies that some patterns of interaction are more competent than others.

At this point, two key ideas about the Cegala and Waldron (1992) approach to competence should be apparent. First, it privileges the sequential properties of interaction and, thus, addresses a weakness in much of the literature on doctor-patient communication. Second, it is a context-bound approach to defining communication competence. The patterns of interaction that serve to define competent and less competent communication are grounded in the goals participants pursue, perceive, and respond to within a particular social setting. Thus, the model allows for, indeed demands, adaptation to the medical interview for its application in this research.

Given the Cegala and Waldron model, what would be considered features of competent patterns of talk? An answer to this question assumes that certain communicative acts are more functionally useful than others in accomplishing specific objectives. But what are the objectives to be accomplished in the medical interview? The application
of their model to the medical context requires a task analysis of the setting in which doctors and patients interact. Such an analysis involves attention to aspects of the setting that provide insight into participants' likely goals, and the communicative moves that will likely allow participants to address their own and the other's goals. The following sections introduce general requirements of such a task analysis and its specific application to the primary care interview.

**Task Analysis**

McFall (1982) proposed that determining likely interactant goals can be accomplished by conducting a task analysis. In effect, he argues that evaluations of competence must always be task specific. McFall (1982) says, "evaluations of competence are always task specific; that is, a person is judged to be competent at carrying out a particular task" (p. 14). To know the task(s) involved in a particular context ultimately helps in identifying the behaviors necessary to accomplish those tasks (McFall, 1982). Clearly, a task analysis is easier for some contexts than others because contexts themselves differ on how goal structured they are and how aware participants are of their goals. This presents a potential limitation to McFall and also to Cegala and Waldron's (1992) context-based model of communication competence. However, the doctor-patient context does not appear to be limited by these concerns because the objectives of participants' interaction are reasonably inferred.

McFall (1982) defined a task as an "an organizing and directing force on behavior" (p. 14). In essence, defining a task means answering the question, "What are the demands for performance?" McFall does not specify how to identify tasks in a particular context, he assumes that
should be relatively easy given examination of the communication in a setting. In other words, tasks or "behavioral programs" should manifest themselves in identifiable sequences of behavior. To analyze the tasks means to look at the talk--behavior that reflects organized and directed events for the purpose of accomplishing some objective (McFall, 1982).

Reviewing previous research on provider-patient interaction is the starting point for identifying the objectives participants in that setting are likely to seek to accomplish (see Morse & Piland, 1981). A review of the physician-patient communication literature reveals that there are two primary tasks accomplished through communication, information exchange and relational development. A discussion of the pertinent research on these tasks is provided below.

On the basis of their meta-analytic review of over 60 studies on doctor-patient communication, Roter and her colleagues described two overall tasks served by interpersonal communication in the medical interview, information exchange and relational development (Hall et al., 1988; Roter et al., 1988). The first section below will review relevant research on information exchange, followed by a section devoted to research on relational development. This discussion will be the foundation for developing a language coding scheme, which is presented in Chapter II.

Information-Exchange in the Medical Interview

Most researchers would agree that the communication demands of the medical interview focus heavily on information exchange (e.g., Beisecker & Beisecker, 1990; Roter & Frankel, 1992; Waitzkin, 1984, 1985).
Although physicians and patients may have other goals during the medical interview, researchers generally agree that effective information exchange is the primary task at hand for both doctors and patients (Beisecker, 1990; Guttman, 1993; Katz, Gurevitch, Peled, & Danet, 1969; Pendleton & Bochner, 1980; Roter, 1989; Roter & Hall, 1989; Waitzkin, 1984, 1985). Frederikson (1993) identified that information was a "recurring feature of the literature on doctor-patient communication, one of the few common factors among the many diverse approaches" (p. 225).

In the medical interview, the quality of information exchange between doctors and patients is fundamental to both participants' basic objectives. Presumably, both doctors and patients share the general objective of addressing the patients' medical needs (e.g., getting the patient to a healthier state). Information exchange is fundamental to this objective. Through effective information-seeking on the doctor's part and effective information-giving on the patient's part, the doctor is able to acquire important details about the patient's medical history and current symptoms. This information provides the basis for accurate diagnosis and treatment. Similarly, the patient's effectiveness in information-seeking and the doctor's effectiveness in information-giving provide the basis for patient's understanding of his/her medical problem and the ways it may be addressed. Such information is important to a patient's willingness to abide by treatment suggestions and may be critical to the patient's long-term health.

In addition to the focus on information exchange by researchers, it has been reported that 79% of physician problems in communicating with
patients involve difficulty in the transmission of information (Pendleton, Brouwer, & Jaspars, 1983). Researchers suggest that differing perceptions about what effective information exchange is eventually leads to misunderstandings between doctors and patients (Beisecker, 1990; Tuckett & Williams, 1984; Waitzkin, 1984, 1985). For example, although the majority of patients indicate they are interested in obtaining as much information as possible (Ende, Kazis, Ash, & Moskowitz, 1989; McIntosh, 1974; Quint, 1965; Shapiro, Najman, Chang, Keeping, Morrison, & Western, 1983), physicians often do not perceive patients' information needs, and in fact, physicians tend to overestimate how much information they do provide to patients (Beisecker, 1990; Shapiro et al., 1983; Tuckett & Williams, 1984; Waitzkin, 1984, 1985). Some physicians actually discourage question asking (Fisher, 1993; Frankel, 1984; Mishler, 1984, 1986; Svarstad, 1976; Weiss, 1986; West, 1984b). Concurrently, criticisms have been leveled against doctors for relying too much on closed questioning (Coulthard & Ashby, 1975; Roter et al., 1988) and ignoring or not responding directly to patient information-seeking attempts (Beisecker & Beisecker, 1990; Frankel, 1990; Roter, 1977; West, 1984b). In effect, these behaviors decrease a physician's ability to recognize patient problems and complaints, thereby contributing to inaccurate diagnoses (Maquire, 1984; Marks, Goldberg & Hillier, 1979). Of particular note, some reports showed that patients were dissatisfied with the amount of information imparted by physicians more than any other aspect of medical care except medical fees and waiting time (Cartwright, 1967; Cartwright & Anderson, 1981; Waitzkin, 1984; Waitzkin & Stoekle, 1972).
Time allocation. Overall, information-seeking and -giving contribute to almost three-fourths of physicians' talk time. Some researchers have reported the dominance of information-seeking and -giving activity by physicians in terms of time allocated to the task (Arnston, Droge, & Fassl, 1978; Bain, 1979; Smith, Polis, & Hadac, 1981). The amount of talk time spent on information exchange the medical interview alone warrants that it be a key component of doctor-patient competence. For instance, a series of meta-analytic studies by Roter (1989) showed that 38.5% of physicians' total talk time was devoted to information-giving, and up to 50% of patients' talk time was also information-giving (Roter et al., 1988). This large percentage of talk time is directly related to decisions that affect the welfare of the patient—information about how to get better.

After information-giving, information-seeking has been shown to be the second most frequently occurring kind of talk. Almost one-fourth of physicians' information-seeking behavior is question-asking, mostly in the form of closed ended queries (Roter & Frankel, 1992). Patient question-asking is not a commonly occurring behavior in medical dialogue. With an average of three questions per patient per visit (Roter, Hall, & Katz, 1989), some have suggested that physicians limit and control patients' ability to ask questions (Fisher, 1993; Frankel, 1984; Mishler, 1984, 1986; Svarstad, 1976; Weiss, 1986; West, 1984b). Svarstad (1976) found this control was accomplished by doctors speaking in technical language, clock watching, mumbling, ignoring questions, using quick get-aways, frowning, and interrupting the patient. In fact, she found that doctors were twice as
likely to use one of these strategies when under time pressure (Svarstad, 1976). However, other research shows that even when patients are trained in question-asking they tend to ask relatively few questions (see Guttman, 1993).

The issue of time allocation is important but not with respect to amount of time spent with patients. Even when more time is given to doctors to interact with patients, it does not necessarily improve the amount or quality of their communication (MacLeod Clark, 1983; New, Nite & Callahan, 1959). What is at issue regarding time allocation is that instances where interactional patterns of physicians and patients are asymmetrical--an unequal distribution of communication--may not be as competent as those which are more balanced or coordinated in their exchange (Roter & Frankel, 1992).

Outcomes associated with information exchange. Research that does identify amount and quality of information exchange generally relates process variables to behavioral, cognitive, and affective outcome measures. For instance, increased patient question-asking is associated with increased understanding of treatment regimens and other outcomes (Beisecker, 1990; Robinson & Whifield, 1985). Research of interest here is that which focuses not on demographic characteristics, but on information exchange processes that relate to outcomes such as other communication, compliance, physical outcomes, and satisfaction.

Street (1991a, 1992a, 1992b), using a language coding scheme, coded pediatrician utterances on nine dimensions. He found that those doctors who gave more information were generally less directive, spent more
time on partnership building activity, and were perceived as more interpersonally sensitive by patients. The combination of partnership building perceptions and task behaviors (Street, 1992a, see also Roter, 1989) were related to physician informativeness. In two studies, doctors' informativeness was uniquely and strongly related to the frequency with which patients asked questions and expressed concerns and affect (Street, 1991a, 1992a). In sum, these physicians gave more general information and, in particular, treatment information to those patients who were more expressive.

Other research on information exchange examines how physician strategies are related to compliance. This line of research suggests that the provision of instructions and explanations helps account for a good portion of the variance in compliance rates. In particular, increased compliance has been related to: ambiguity of information (Jette, 1982; Ley & Spelman, 1967); simplicity and specificity of instructions (Charney, 1972; Korsch & Negrete, 1972; Svarstad, 1974); and provisions of explanations and demonstrations of warmth (Francis, Korsch, & Morris, 1969). Another line of research has approached information exchange processes and compliance not from the physician point of view, but from the patient's perspective. This research indicates that increased patient question-asking is associated with increased understanding of treatment regimens and overall better medical outcomes (for review see Beisecker, 1990).

In a meta-analysis of over 61 physician and patient interaction studies, Roter (1989) reported that compliance is, in fact, positively associated with information-giving and positive talk. Yet, compliance is
negatively associated with question-asking and negative talk. Despite these results, some research indicates no relationship between information exchange variables and compliance (e.g., Mazzuca & Weinberger, 1986). This is especially true for research that treats information exchange from the standpoint that giving more information will lead to improved compliance rates (Stone, 1979). Some argue that these conflicting results are a by-product of how the information exchange process is conceptualized and operationalized, and that examining the impact of communication processes on compliance would be more illuminating if clearer conceptions of information-giving and -seeking strategies by doctors and patients were derived (Tuckett & Williams, 1984). Further discussion of this point is provided later.

In assessing the overall impact of information exchange and its impact on compliance, Thompson (1994) concluded that “[d]ifferences appear to emerge dependent upon the kind of health problem being studied and the specific communication behaviors under investigation” (p. 713). However, among studies examining information-giving and -seeking specifically in medical interviews, it seems clear that effective communication and mutual exchange of information by physicians and patients, in some cases, is related not only to compliance rates, but also to improved or increased communication during the medical interview itself.

Before moving onto information exchange and satisfaction, brief mention should be made of other outcomes less frequently studied, but equally important. Heszen-Klemens and Lapinska (1984) reported that
improvements in patients' health status (considered by some a better
dependent variable than compliance) were related to question-asking,
advice, and emotional exchange by doctors. Other studies have found
significant relationships that related physiological outcomes (i.e., lowered
blood pressure, blood sugar, and functional limitations) to information
exchange processes (i.e., eliciting information and instructions) (for
review see Kaplan, Greenfield, & Ware, 1989; Thompson, 1994).

In addition to compliance and other outcomes, considerable
research supports a significant relationship between information exchange
and patient satisfaction (see Thompson, 1994; Guttman, 1993). For
instance, satisfaction has been related to the amount of information
communicated to the patient about his or her treatment regimen
(Bertakis, 1977). Patients report being dissatisfied with a physician who
displays a highly controlling style of communication (Buller & Buller,
1987; Lane, 1983) through information control (Waitzkin, 1984), overuse of
medical jargon (Korsch et al., 1968), dominating the conversation (Hall,
Roter, & Rand, 1987), and using threatening utterances and numerous
interruptions (Lane, 1983). Increased levels of satisfaction have been
associated with physician behaviors such as: increases in communication
of a task/informational and personal manner (Lane, 1983); increases in
giving clear-cut explanations regarding diagnosis and cause of disease
(Gotcher & Edwards, 1990; Korsch et al., 1968); decreases in question-asking
(Roter, 1989); and decreases in use of unclear terms and jargon (Tymstra,
1986; Korsch et al., 1968). Finally, in regards to patient behavior, those who
ask more questions and who are encouraged to do so more often by their physicians also are more satisfied (Roter, 1989; Feeser & Thompson, 1993).

In a relatively unique study, Winefield and Murrell (1992) assessed whether variations in information exchange and emotional support were related to doctors' satisfaction with an interview. The most satisfying consultations for these physicians were characterized by higher proportions of medical labeling, chat, a physical exam, a prescription being given, and lower proportions of doctors' acknowledgment and patients' confirmations. This seems to indicate that doctors' criteria for a satisfying interview are different from patients'. Indirectly, this is supported by a study by Cegala, McNeilis, McGee, and Jonas (1995) who reported that doctors and patients differed in their thoughts/feelings during the medical interview. It would seem likely that if patients and doctors are thinking about different things during the interview, then they likely use those criteria in evaluating their overall satisfaction with the interview. Cegala et al. found that doctors tended to focus more on relational matters both in their thoughts/feelings and in assessing their own communication. Patients focused on both technical and relational criteria in assessments of the doctors' communication, but their thoughts/feelings were more focused on their own communication (Cegala et al., 1995).

Street (1991a) argued that the most pervasive finding in research on information exchange is that physicians are more informative with some patients than others in terms of patient characteristics and communication during the interview. He speculates that this could be the result of either variations in patients' communication style, physicians' attitude toward
patients, or both. In a related vein, Bertakis & Callahan (1992) is one of a few studies that examined information exchange with respect to repeat versus new patients. Their results provided confirmation of earlier research (Rost, Roter, Bertakis, & Quill, 1990) that physician-patient familiarity does influence process-outcome variables. In particular, Bertakis and Callahan (1992) found that interviews with repeat patients had more chatting, counseling, discussion of treatment effects, evaluation feedback, compliance checking, and requests for specific patient behavior change than new patient interactions. On the other hand, new patient interviews had more structuring, history-taking, discussion of family information, and substance abuse talk than repeat patients. These results seem intuitively correct given the nature of the new patient visit, but they also point to the fact that differences in patient-physician familiarity are likely to result in different types of information-giving and -seeking.

Although patients say they want as much information as possible (Ende et al., 1989), research shows that they, as a rule, do not explicitly seek out information from physicians (Frankel, 1990; Todd, 1984). Accordingly, doctors may not perceive the information needs of patients and thus not pursue certain topics in depth with patients who fail to ask or directly state their requests. The implication of this being that how patients and doctors align their information exchange strategies may be a significant factor in overall perceptions of informativeness and satisfaction.

Simple categories for a complex process. Despite the prominence of information exchange in many of the language coding schemes used by health communication researchers (e.g., Mazzuca & Weinberger, 1986;
Putnam & Stiles, 1993; Roter & Hall, 1989; Street, 1992b), most of the existing coding schemes that assess information exchange in physician-patient interactions lack sophistication not only in terms of how information is conceptualized, but also in the number and kind of language categories used to assess it (Roter, 1989; Street, 1991a, 1992a; Tuckett & Williams, 1984).

One reason for the lack of knowledge about how doctors and patients exchange information is that little attention has been paid to defining exactly what information means from the perspective of doctors and patients. Perhaps what constitutes informative messages about such matters as diagnosis and treatment may be very different depending on the perspective taken, doctors’ or patients’. The approach to information exchange used in most of the schemes employs Waitzkin’s (1985) identification of an information event as a request for information or an information statement made by a physician. This clearly leaves out the instances where patients provide and seek information. Most agree that this is a simplistic and ineffective way to conceptualize information in the sense that it does not capture the true interactive quality of how information is exchanged and how information is perceived by both parties. Despite extensive research that has indicated certain groups of patients suffer from information discrimination (Waitzkin, 1984, 1985), the results are difficult to interpret if we do not know what information doctors and patients find worthwhile (Tuckett & Williams, 1984).

Relatedly, a fair amount of information exchange research implies that more information leads to self-efficacy, which leads to adherence (Rodin &
Janis, 1982). This suggests that “giving patients appropriate information [necessarily leads to] inducing efficacious changes” (Rodin & Janis, 1982, p. 36).

Tuckett and Williams (1984) have argued that rather than identifying what is and what is not information, a more useful approach is to distinguish different depths of information by differentiating “interpreting” from “giving reason” when doctors discuss treatment proposals. They point to research by Svarstad (1974, 1976) which illustrates the significance of this conceptualization when investigating compliance with drug prescriptions. Svarstad (1974) treats information in terms of how far it appears to interpret or clarify treatment decisions and the reason or rationale for those decisions. Her results indicate that compliance with instructions is strongly related to how much doctors told patients in terms of identification of and rationale for treatment. Tuckett and Williams (1984) cite this research to illustrate how conceptualizing information exchange processes in different ways can aid in further explicating its relationship with compliance. Unfortunately, few researchers have broadened their definitions of information to include notions of depth and clarity as did Svarstad (1974).

The differences in conceptualization of the information exchange process leads directly to differences in how it is operationalized. The conceptualization that “more is better” pervades the language categories currently used to assess information exchange, such that only one category of information-giving is often used. Researchers have typically used rather gross categories to measure information exchange, such as “asks
questions," "provides information" (see Roter, 1989), while ignoring subtle yet important aspects of information exchange, (e.g., Svarstad, 1974, 1976). Although information-giving is the most frequently employed category relevant to physicians' information exchange (Roter & Frankel, 1992), few coding schemes distinguish different functions of information-giving, indeed most schemes have just one category to assess information-giving (Roter, 1989). There seem to be qualitative differences in Roter's (1989) meta-analysis typology in many of the information-giving categories in terms of the functions they fulfill. For instance, differences between when one volunteers information, gives elaborate instructions, and information that is given in response to a question clearly need to be reflected in various strategies participants might use in information exchange. Because no scheme clearly represents these nuances, this is an area that needs further explication in operationalizing information exchange strategies.

A useful starting place to uncover such strategies rests with research by Rost, Carter, and Inui (1989) which identified differences between an offer of information and information given in response to a solicitation using the Resource Exchange Analysis technique developed by Katz, Gurevitch, Peled, and Danet (1969). This discourse analytic approach identifies "multiple adjacent utterances in relationship to what each partner is requesting from the other and provides to the other" (Rost et al., 1989, p. 316). Their results showed that information that was independently offered--not information provided in request--explained more than half of the variance in patient adherence to physician
recommendations for new medication (Rost et al., 1989). This notion is especially appealing in light of the fact that many information-giving categories from schemes reported here do not assess intent or how information-laden messages are related or unrelated to previous utterances. Rost et al. (1989) suggested that all future coding systems must include the differentiation of information volunteered from that which is provided in response to a question, if health communication research is to continue making strides in information-exchange processes. Because information-giving statements may or may not be related to previous statements made by the other participant, new categories are needed to track and identify subtle differences in information-giving and how they may be related to perceptual differences in the adequacy of information exchange.

The study of information-seeking in conversation analytic research provides further help for identifying differences in technique of information-seeking. Patients, as a rule, do not explicitly ask for information in the medical encounter (Beisecker, 1990; Frankel, 1990; Todd, 1984; Quill, 1989). Instead, they tend to embed requests for information by adding comments or questions to replies they give to the doctor. With current coding systems, this would count as information-giving, not seeking. West (1984a) identified that more than simple questions were being used by both interactants. Indeed, some were conditionally relevant questions which sought confirmation, repair, or indicated surprise at new information. Use of these types of questions provided different responses than traditional approaches to singular
question formats. These direct and indirect strategies by both doctors and patients may be a factor in why doctors misattribute patients' desire for information (Waitzkin, 1984, 1985). The implication of this line of research is to develop information-seeking and -giving categories that can track differences in doctors' and patients' strategies of information exchange in the medical interview. That is, a category system should be able to detect both direct and indirect means of solicitation of information and ability of the other to uptake or respond to those strategies.

Next is an overview of research that identifies another frequently studied aspect of the doctor-patient communication. These studies examine the relational components of communication in the medical interview.

Relational Development in the Medical Interview

In addition to task behaviors, physicians and patients also communicate concern, care, and otherwise express emotions that enhance relational feelings toward one another. This dimension of doctor-patient communication is referred to in a variety of ways, including affective communication, relational communication, socioemotional messages, patient-centered communication, and partnership-building messages. Most commonly referred to as relational communication, it is communication that serves to establish some sort of relationship between the interactants. For example, communication of affect, a type of relational message, has been defined as: behavior that displays approval, disagrees, anxiety displays or sympathy (Roter & Hall, 1989); anger, dominance, assertiveness, businesslike manner, expressions of warmth,
concern, and interest (Hall, Roter, & Rand, 1981); positive socioemotional
comments, partnership building, social conversation, humor, and
negative affect (Street, 1992b); and "utterances that express concerns,
worries, or emotions" (Street, 1991a, p. 542).

Some have suggested that studying the relational dimension of
communication is most closely associated with a line of research that
conceptualizes doctors' style of interviewing as either physician-centered
or patient-centered (for review see Ballard-Reisch, 1990; Barsky, Kazis,
Freiden, Goroll, Hatem, & Lawrence, 1980; Ben-Sira, 1980; Byrne & Long,
1976; Kasch & Dine, 1988; Marshall, 1993; Smith & Hoppe, 1991; Squier,
1990). A patient-centered interviewing style is one that enhances patient
participation, encourages mutual decision-making, focuses on eliciting
patient experiences, and shows interpersonal sensitivity.

In general, research in this domain has tried to establish a link
between communication of affect and some outcome. In terms of patient
preference though, some research has shown that patients prefer doctors
who have an affective style rather than a more informative style (O'Hair,
1986 but see Roter & Hall, 1991). More importantly, patients report that
compliance could be improved if doctors were better at establishing
communication of affect through verbal and nonverbal channels
(DiMatteo & DiNicola, 1982). To clarify this line of research further, the
following discussion will concentrate on investigations that sought to
establish a link between relational messages and various outcomes. Note,
the studies summarized below are those that in some way analyzed
recorded doctor-patient interactions and unless otherwise noted, related the talk to a specific dependent variable.

**Expression of care/concern.** Most of the research that focuses on communication of care/concern has done so by relating it to satisfaction, compliance, or recall. For the most part, this research reports significant correlations between doctors’ expression of care/concern and satisfaction (Bensing, 1991; Bensing & Dronkers, 1992; Ben-Sira, 1976; Buller & Buller, 1987; Comstock, Hooper, Goodwin, & Goodwin, 1982; Friedman, DiMatteo, & Taranta, 1980; Hall et al., 1988; Hall, Roter, & Rand, 1981; Heszen-Klemens & Lapinska, 1984; Kaplan, Greenfield, & Ware, 1989; Korsch, Freemon, & Negrete, 1971; Kreps, 1988; Lochman, 1983; Pendleton, 1983; Roter, 1989; Roter & Hall, 1989; Roter et al., 1988; Street 1992a; Svarstad, 1974, 1976; Waitzkin, 1984; Winefield & Murrell, 1992). Other research attempted to demonstrate a relationship between expression of affect and other outcomes such as compliance (for review see Pendleton, 1983; Stewart, 1984; Street & Weimann, 1987) and to a lesser extent recall, comprehension, and appointment keeping (Hall et al., 1981; Mazzuca & Weinberger, 1986; Mazzuca, Weinberger, Kurpius, Forlehle, & Heister, 1983; Roter & Hall, 1989). However, studies about showing negative affect in the form of an authoritative style have shown conflicting findings regarding compliance. Although Davis (1971) and Lane (1983) found that authoritative physician communication was positively related to compliance, Heszen-Klemens and Lapinska (1984) found them to be negatively related.
The typical interpretation of these findings is that the manner in which the physician and patient communicate has implications for how they see one another as people, and serves as the basis for trust, respect, and loyalty. These relational developments, in turn, impact on various outcomes such as satisfaction, compliance, and recall.

Displays of tension, tension release, and affect. Yet another dimension of relational communication in the medical interview is demonstrated in messages that show tension, tension release, or lack of affect. Several investigations have indicated that these types of utterances, or lack thereof, also can have a significant impact on outcomes (Kaplan et al., 1989; Korsch, Gozzi, & Francis, 1968). Specifically, patients who are less affectively expressive receive more opinions from their doctors (Greenfield, Kaplan, & Ware, 1985). However, Street (1991a) found that patients who demonstrated more affect obtained more information from their doctors. In addition, Street (1992b) reported that parents of child patients who asked more questions and expressed more negative affect, received more information, directives, and positive talk from their doctors.

In regards to displays of tension, patients' and doctors' expression of tension have been shown to be negatively related to patient satisfaction (Carter, Inui, Kukull, & Haigh, 1982) and physician satisfaction (Pendleton, 1983; Winefield & Murrell, 1992). In other words, displays of tension by participants were negatively related to satisfaction, but tension release utterances (shared laughter, jokes) were related positively to compliance and satisfaction (Carter et al., 1982; Davis, 1968). For the most part, these
studies indicate that affective, affiliative, and patient-centered communication engenders patient satisfaction, but not necessarily compliance.

**Partnership building.** Partnership building has been defined as those occasions “when the provider goes beyond soothing or informing the patient, and tries to elevate the patient’s status within the relationship and to increase the likelihood of patient participation” (Hall et al., 1988, p. 663). This is especially true for investigations that center on partnership building utterances that serve to enhance mutual decision-making (Beisecker & Beisecker, 1993; Brody, 1980; Perry, 1990; Quill, 1989; Siegler, 1981; Speedling & Rose, 1985; Szasz & Hollender, 1956). Additionally, partnership building has been described as utterances that solicit or encourage patients to express questions and opinions, as well as feelings (Street, 1991a). Thus, at least some views of partnership building appear to blend relational and information exchange concerns. This is further implied by data showing that partnership building utterances correlated positively with patient satisfaction, recall, and understanding (Hall et al., 1988; Roter, 1989; Roter et al., 1988). Roter (1989) and Street (1992b) argued that even though partnership building utterances are rare, they can have a considerable impact on certain outcome measures.

Although the literature on doctor-patient communication has emphasized the communicative functions of information exchange and relational development, surprisingly little attention has been given to the relationship between these functions. Recently, Roter (1989) has argued that the separation of task and relational communication is problematic in
making claims about doctors' and patients technical and relational competence. She has questioned the utility of previous research that separated task and relational messages and then related those frequencies to other outcome measures (see also Street, 1991b). Roter has offered an hypothesis about how these functions relate to one another through their connection to various outcomes (Roter, 1989, Roter & Hall, 1991). She argues that patients evaluate doctors on both technical and relational competence, but that doctors' messages achieve positive therapeutic effects (i.e., patient compliance) through both explicit content (i.e., sharing of technical information) and an implied message of caring and interest. In other words, an informative physician may also be perceived as concerned and caring and positively affect compliance. But, a physician who is merely "nice or caring" in the absence of information-giving does not provide the evidence patients need to encourage adherence to a therapeutic regimen. Thus, Roter (1989) suggests that the information component of doctors' messages carries more weight in influencing patients' compliance (also see Buller & Street, 1991). Street (1991c) reports results that extend this hypothesis to effects on patients' satisfaction. He found that 34% of the variance in patients' satisfaction was accounted for by the informativeness (i.e., technical relevance) of physicians' communication, while only 17% of the variance in patients' satisfaction was accounted for by physicians' interpersonal sensitivity. Overall, then there is some support for expecting the information exchange component to carry more weight in a medical interview than the relational component. A study by Cegala, McGee, and McNeilis, (1995) supports this
hypothesis. When asked what behaviors are most identified with judgments of competence, information exchange concerns were dominant on the part of both doctors’ and patients’ perceptions of self- and other-competence. At the same time, however, doctors and patients agree that the onus of relational work during the medical interview is assumed to fall on the doctors’ shoulders.

Although Roter’s hypothesis seems plausible, little effort has been made to directly test it. Nevertheless, her point about the difficulty of separating technical and relational messages is well taken. This researcher has opted for developing a coding scheme that incorporates information exchange and relational development simultaneously by using a multi-level coding technique.

Summary

Similar to other health communication scholars (Kasch, 1984; Kreps & Query, 1989), this author endorses the view that the concept of interpersonal communication competence is potentially useful to the study of doctor-patient interaction. The Cegala and Waldron (1992) model of communication competence was selected as the conceptual framework for this research. Their model was selected because, among other things, it privileges participants’ language-in-use and it is context-bound. These aspects of their model make it especially useful for the application to doctor-patient communication because they address major weaknesses in the current literature.

Within the Cegala and Waldron model, competent communication is defined in terms of participants’ ability to align their utterances in the
service of achieving self and other goals. This alignment emphasizes participants’ ability to “uptake” on the meaning and intent underlying each other’s utterances in a matter to facilitate goals. It follows the logic articulated in Jacobs and Jackson’s (1983) rational discourse model. Because the Cegala and Waldron model is context-bound, the actual operational definition of competent communication (i.e., what alignment looks like) is keyed to a task analysis of the context in which communication occurs. This task analysis is designed to reveal participants’ likely goals in a given setting, and provide some guidance for initial hypotheses about what competent patterns look like.

The second part of this chapter provided a task analysis of the medical interview. It revealed that two general goals dominate the coordination of doctor-patient interaction, information exchange and relational development. In general, information exchange on the part of the doctors and patients requires behaviors such as seeking information, giving information, and verifying or checking the fidelity of information. The task of relational development involves communicating in ways that demonstrate care and concern, and a general predisposition that one partner is open to concerns raised by the other. In the next Chapter, this task analysis is used as the basis for developing a content code system that will be used to define the communicative competence of doctors and patients during a primary care interview.
CHAPTER II
THE CODING SYSTEM

Purpose and Rationale
Cegala and Waldron's (1992) context-bound model of communication competence serves as the conceptual framework for this research. As such, the attention to participants' communicative behavior focuses on how they align their utterances in coordinating their goals. The previous chapter presented a task analysis of the primary care medical interview to determine what basic goals are most relevant to participants in this context. That analysis revealed that information exchange and relational development are the most prominent goals in the primary care interview. However, determining the basic goals relevant to a particular context addresses only part of the Cegala and Waldron model. The notion of alignment implies that competent communicators interpret and produce messages that facilitate individual and mutual goals. Such alignment entails participants' attention to the intent and meaning of each other's messages, and constructing subsequent utterances to meet the concerns of the interlocutor. There are potentially several criteria that may be useful in assessing participants' competence along these lines. The language coding system developed and assessed here centers on three primary criteria: message content, uptake, and function. A secondary criterion of the coding scheme involves two aspects of interaction
management: acknowledgment tokens and interruptions. These are also considered to signify uptake, but in a less direct fashion than the primary uptake codes.

A minimum requirement of alignment is that conversation participants fashion utterances that address the same global topic. Clearly, coordination of goals is not likely if one participant is talking about the weather and another is talking about the state of the economy. Thus, the global content of participants' utterances is important to track when assessing the extent to which they are successfully aligning their talk. In this category system, global content is assessed with nine categories that range from medical concerns such as diagnosis and treatment to nonmedical concerns.

While minimum requirements of alignment occur at the global level, additional requirements are found at lower levels of discourse. Since alignment is concerned with the extent to which a subsequent utterance fits with a prior utterance, it may be also assessed on local grounds. For example, participants may both address a common global content theme (e.g., the weather), but their utterances may be misaligned in terms of function (e.g., a question is not adequately answered or is ignored entirely). Thus, what may be coherent, aligned discourse at one level may be incoherent and disjointed at another level. The assumption here is that successful coordination of goals requires alignment on multiple levels of discourse.

As indicated already, one component of the coding system is concerned with interaction management (Wiemann, 1977), and involves
matters of timing, turn-taking, and regulation through continuous feedback. In particular, acknowledgment tokens and interruptions are coded. A second way in which utterances fit is defined is in terms of local topic synchronization or uptake. Here, utterances are coded for such matters as topic change and issue versus event extensions. The major objective of such assessment is to index the extent to which participants fashion their utterances to address central, peripheral, or different substantive matters of the interlocutor's previous utterance.

Finally, the third way in which utterance alignment is defined is with respect to how utterances mesh functionally. For example, in most instances participants expect an answer to follow a question. Such expectation for functional fit contributes to participants' experience and assessment of conversational coherence. In the current coding system, there are 31 functional categories, many of which reflect the basic goals of information exchange and relational development suggested in the literature review presented in the last chapter.

The remaining portions of this chapter provide a rationale for and description of each coding level and the individual categories within. The coding manual used in all reliability coding is provided in Appendix A. Discussion of unit of analysis used in this research is found in Chapter IV along with reliability coefficients.

Content Codes

Except for Street (1991a, 1992b) and Charon et al. (1994), no coding schemes published to date incorporate a category that deals with the actual content of the talk in the medical interview. Street (1991a, 1992b) appears
to be the first to classify content of talk, under information-giving, with content categories such as diagnostic-health, treatment, and procedural. However, because he does not report the frequencies of these categories in published results, there are no data available regarding content frequency. Charon et al. (1994) have incorporated content of talk comprehensively into their coding scheme. Coding directly from the audio-tape, coders listed topics sequentially according to whether they addressed biomedical issues (history, symptoms, tests, procedures, medications, prevention, prognosis, and therapeutic regimens), personal habits (diet, exercise, alcohol, sex, smoking, and sleep), psychosocial (issues related to work activities, financial situation, family, depression, religion, age, home environment, death, and crime), patient-physician relationship (intellectual exchanges, relational processes, and physician disclosure), or other miscellaneous topics (e.g., small talk). In addition to identifying content, coders rated patient and physician responsiveness to the topics raised. The usefulness of this latter categorization is discussed in the section outlining the uptake level code.

The fact that Street's content categories are lumped under information-giving is problematic because content and function are conflated. The approach taken here is similar to the one used by Charon et al. (1994). The present scheme has nine content categories. The first six categories are technical/medical in nature and include history, symptom, treatment, procedure, prognosis, and diagnosis. The remaining three are less medical/technical in content and include nonmedical (e.g., small talk)
behavioral (activities such as smoking and sexual behavior), and non-specific (instances where talk is invited but the content is not specified).

Management Codes

There are two levels assigned to identify instances where utterances indicate how and where participants uptake on previous utterances, themes, or topics. The first level of these codes involves how participants managed interaction. The first code within the management group is an acknowledgment token, which indicates the presence or absence or words/phrases that signify recognition or confirmation of the partner’s previous turn (e.g., P: “Yeah, and I’d like you to check on that mole that I told you popped up last month.” D: “Okay, let’s move onto the examination then…”). Bach and Harnish (1976) identified acknowledgment tokens as nonpropositional utterances that acknowledge a participant’s previous utterance. Nofsinger (1991) also considered acknowledgment tokens to be a type of response token that indicate confirmation or receipt of information. This sort of interaction management appeared potentially important in tracking information exchange and relational communication between patients and doctors. Thus, if a turn began with some form of acknowledgment or confirmation of the partner’s immediately preceding turn (such as the underlined part in the previous examples), then it was coded for an acknowledgment token (i.e., it received a 1). If no acknowledgment token was present, no code (i.e., 0) was given.

An interruption is the second category in the interaction management group. Any simultaneous talk other than a
continuer/backchannel (described below) is considered an interruption. Interruptions are defined here in terms of forced and attempted interruptions (Rosenstein & McLaughlin, 1983), where one of the two participants vying for a turn yields the floor. Interruptions are important occurrences to note because as Frankel and Beckman (1984) reported, physicians interrupt so often that patients cannot finish talk about their concerns. They reported that only 23% of patients could finish their statements without being interrupted. Constant interruptions may depress patients' willingness to provide information and may result in doctors getting an incomplete picture of the patient's symptoms or conditions (Frankel, 1984). Thus, interruptions appear to be an important interaction management behavior to code. Like acknowledgment tokens, utterances either did or did not occur with an interruption, and were coded accordingly (i.e., 1 or 0, respectively).

**Primary Uptake Codes**

The scheme has seven primary uptake codes. They identify the extent to which, and how, an utterance is responsive to the previous utterance.

The issue of how persons respond to the topic of previous utterances has been dealt with in discourse research that relates topic management to competence (Tracy, 1982; Jacobs & Jackson, 1982), and by other work relevant to conversational alignment (Stokes & Hewitt, 1976). Ragan (1983) has identified aligning actions as "talk used to frame messages for purposes of clarifying, interpreting, and managing conversational meaning and communicator roles" (p. 159). In other
words, achieving interaction results from aligning individual actions (Stokes & Hewitt, 1976). In addition, topic management shows that an actor has an idea of the topic and its boundaries (McLaughlin, 1984). The extent to which doctors and patients aligned their utterances by picking up on a topic/theme of importance to the interlocutor was considered important to the ultimate coordination of goals.

One way to approach topic management is to focus on topic continuation. The relevance of an utterance is considered a matter of its association both to the immediately prior utterance and to the conversation up to that point (McLaughlin, 1984). Reichman (1978) defined issue responses as abstract statements or generalizations about a belief or feelings. Event responses are those about a specific example or instance. Tracy (1982) has shown that issue versus event topic extensions are related to perceptions of competence. Similarly, Villaume and Cegala (1988) have shown that mind-based and text-based discourse styles (similar to issue and event extensions) are characteristic of high and low competence.

Based on a review of relevant research on topic continuation, six types of topic alignment were identified for inclusion in the coding scheme: a continuer, an event extension, an issue extension, a delayed pop extension, a topic change, an immediate pop extension. **Continuers** are brief utterances consisting of one or two words or sounds that invite a speaker to continue or expand upon a narrative. These are usually referred to as backchannels and are generally considered alignment devices to the type of turn, not to the news worthiness or informational
value of the utterance (Nofsinger, 1991). Continuers have also been called minimal responses (Fishman, 1978; Schank, 1977). Conversants use continuers regularly during conversation to serve multiple functions. One function of continuers is to aid in applying turn-taking rules to conversation involving lengthy turns at talk, such as when a speaker is telling a story (Schegloff, 1982). This is similar to what Goodwin (1986) argues, that continuers function as a bridge between parts of multi-turn units. Another function is to mark the successful receipt of information (Goldberg, 1975). Still other times, continuers may be used to shift the conversational burden to one’s partner by providing a minimal response to a prior utterance (Villaume & Cegala, 1988). It is not always clear from an observer’s perspective which function a continuer is serving. However, given their potential role as indicating successful receipt of information, encouragement for the other to continue speaking, and reinforcement of contribution, they are included here.

There are clear indications though that an utterance can be responsive to a previous utterance in levels of degree. As already mentioned, work on issue or event extensions shows this. Event extensions indicate that an utterance is an extension of the topic of the previous utterance, but is shifted to some degree. The response may be seen as related to the previous topic, but not exactly uptaking on the central point of the utterance. Event extensions address a less central, more peripheral point than the central issue of the other’s preceding utterance. McLaughlin (1984) has compared event continuations to tangential talk. On the one hand, issue extensions relate to a previous
turn by directly addressing the central point or meaning underlying the utterance. These extensions indicate that the current utterance is an extension of the same topic as the previous utterance, and is central to the fundamental meaning of it. Research has shown that issue-type extensions are generally more competent than event-type extensions (Tracy, 1982; McLaughlin, Cody, Kahn, & Robey, 1981; Villaume & Cegala, 1988).

However, it should be recognized that competent participants sometimes do not immediately respond to the issue of another’s turn, but do respond some time later. Participants can refer back to a topic that has already been discussed. These instances are called pops. One type of pop is called a delayed pop extension, where an utterance indexes a topic that occurred more than four turns earlier. On the other hand, immediate pop extensions are utterances that pick up on a topic that occurred within three to four turns earlier. Whereas event and issue extensions deal with the topic of the immediately preceding turn, pop extensions refer to a topic that occurred prior to the immediately preceding utterance. Topic changes occur when the topic introduced is substantively different from the topic of the previous utterance. The last category in this group is called first utterance. This category was necessary to signify that an utterance was either the first statement of the interview, or the first statement made after a long period of silence, such as when a participant returns to the room after an absence.

Function Codes
Function codes identify the main purpose being served by a turn. In other words, what a turn "does" or accomplishes is considered a function. Each coded unit is identified as having one major function. Some of the function codes in the scheme are specific to the medical interview setting, while others are applicable to any conversation.

Function codes 1-11 are intended to assess aspects of information exchange within the medical interview. Considerable research has shown that information exchange is the central instrumental task associated with the medical interview (Arnston & Philipsborn, 1982; Beisecker & Beisecker, 1990; Roter, 1989; Roter et al., 1988, Waitzkin, 1984, 1985). Additionally, a limiting factor in much of the prior research on doctor-patient communication is that only one or two categories were used to assess information exchange (Roter, 1989). One important objective of this coding scheme is to explicate varying ways of providing information beyond those used in previous category systems in order to reflect the different ways information is introduced in a medical interview. Accordingly, there is good reason to include multiple categories designed to assess information exchange in this project (see also Tuckett & Williams, 1988).

Information-seeking strategies. With few exceptions, researchers typically have used a single category to identify question-asking. However, some research suggests that it is useful to distinguish between different types of questions (Carter et al., 1982; Roter, 1984; West, 1993). The form that a question takes will have an effect on the kinds of information elicited (Roter & Frankel, 1992). Following this work, four categories of
information-seeking are used in the code system. A **closed question** is an utterance designed to solicit specific information, for instance, “What day did that happen?” A **moderately closed** question is an utterance designed to solicit somewhat specific information, but also affords the respondent an opportunity to elaborate beyond the initial answer. For example, “Have you been experiencing any back pains or other troubles since the operation?” The code system also includes **open** questions. An open question is an utterance designed to solicit information in a manner that clearly invites the speaker to elaborate, for example, “So, tell me what brings you here today?”

Another style of information seeking identified by Roter and Frankel (1992) is indirect information seeking, which involves the use of indirect questions and assumes more knowledge on the part of the respondent. The final information seeking category is an **embedded information request**, which reflects this type of indirect information seeking. This category is derived also from research that suggests patients often do not ask for information directly (Beisecker, 1990; Frankel, 1990; Quill, 1989; Todd, 1984), so they may tag indirect information requests onto answers they provide in response to a doctor’s questions. For instance, an embedded question would be, “Yes, it made me ill. You know I was thinking that maybe since the whole family got sick we were all somehow prone this kind of bug.” Note that as the example suggests, embedded questions often appear as assertions. This form of information seeking is especially important in tracking subtle information requests that other
code systems may miss in addition to tracking the extent to which the other uptakes on such requests.

**Information-giving categories.** Rost et al. (1989) identified that information-giving had more to do with how information was provided rather than how much information was provided. That is to say, participants who volunteer information are contributing to the conversation in a much different manner than participants who give information only when solicited. In addition to these concerns, Tuckett and Williams (1988) argued that differentiating between solicited and volunteered information can provide valuable data regarding what questions and assertions prompt different types of information giving. To account for different ways interactants go about introducing or providing information, an information-giving utterance can be discriminated on one of four dimensions. An information sharing utterance can be solicited, elaborated, unsolicited, or expanded.

A **solicited answer** is an utterance which serves as a direct answer to an immediately preceding question. Often these utterances are brief and to the point with little or no elaboration or hesitation. These are typically responses given to closed or moderately closed questions. **Elaborations** also appear particularly important in communication in the medical interview because they are important to accurate information exchange. In this case, when answering a question, a participant can also provide the answer along with an extension to that answer. An elaboration is an utterance that comes in the form of a solicited answer and an extension. These utterances serve as answers to questions, but with additional,
volunteered information tagged onto the answer. An unsolicited utterance is one which provides information that has not been directly prompted by the previous utterance. However, it is not from "left field" either; the information is related to the topic of the previous utterance even though it is not directly prompted by it. Lastly, are instances when participants continue on a theme or topic after an interruption or a continuer. In this case, an expansion code is given to the utterance, signifying that is it a continuation on theme or topic.

Information verifying. Levinson, Stiles, Inui, and Engle (1993) surveyed over 1,000 practicing physicians regarding their frustrations with patients. Results pointed to a lack of understanding between physicians and their patients as a major communication problem. West (1984a) also notes the relevance of understanding, misunderstandings, and mishearing during the medical interview. The following categories are designed to address these concerns.

A conditionally relevant question is an utterance that is designed to seek clarification such as "I'm sorry, take it three times a week?" or interpretation of an immediately preceding utterance.\(^3\) In addition to conditionally-relevant queries, there seem to be other conversational moves physicians and patients use to indicate their relative understanding or misunderstanding of one another. Conversants use other acts to indicate how they are processing information or following the conversation. Formulations (Heritage & Watson, 1979) were selected for inclusion because they may be especially important in conversation involving extensive negotiation or information exchange (Dewhurst,
Garfinkel and Sacks (1970, p. 351) defined formulations as “saying-in-so-many-words-what-we-are-doing.” Heritage and Watson (1979) identified them as presenting an understanding of the gist or upshot of the other’s line of talk. They argued that formulations can preserve, delete, or transform whole sections of talk and can be used to launch new topics or terminate a topic as a whole. Further, formulations are usually subject to confirmation or disconfirmation. Often when people engage in information exchange situations it is helpful to include brief summaries of what has been said because they serve to clarify potential sources of confusion and enhance the accuracy of information exchange. The focus in this coding scheme is on the summary aspect of formulations, as it is especially important for information exchange communication, such as in the doctor-patient interview.

Another way participants attempt to check the fidelity of a message is to restate the previous utterance in a question form. Weiner and Goodenough (1977) called these repetition passes which are usually said with a falling intonation. Restatements were selected to indicate these instances. Often the restatement uses exactly the same words as the previous utterance, but sometimes there is a slight change in word usage. As a rule, restatements are typically briefer than formulations and address only a single utterance, whereas formulations often summarize an entire segment of talk.

Other functions. The next two function categories were derived from research into how expression of emotions are best addressed in the medical interview (Enelow & Swisher, 1986; Marshall, 1993). In particular,
naming and legitimizing affect are typical ways of recognizing and validating displays of affect and are used in clinical and mediation settings as well as medical interviews. A naming utterance identifies and names a verbal or nonverbal behavior of the other. These utterances show recognition of another's affective state and may convey the speaker also understands the other's experience. They are potentially important in establishing and/or maintaining relational connections. A legitimizing affect utterance is any statement that shows understanding or validation of an affective state of the other. These utterances also may be important to relational development. In addition to these more theoretically derived categories, other categories were necessary to reflect the specific qualities of a medical interview.

Particularly well suited to the medical context is a group of categories that fall under the general heading of directives. The logic of these categories is based on research which shows that an overly controlling style on the physician's part negatively impacts on patients' satisfaction and compliance (e.g., Buller & Buller, 1987; Crouch & McCauley, 1986; Heszen-Klemens & Lapinska, 1984). There are three different types of directives identified in this code system: plain, qualified, and polite. A plain directive is an utterance that instructs or commands the other person to perform some action. For instance, "Take a seat over there and we'll begin the exam." A qualified directive comes in the form of a question and is thus more mitigated. For instance, "Would you mind taking a seat over there for me?" A polite directive is also a mitigated form, but not phrased as a question. Polite directives include either the
word please, and/or use of the a person’s name. For instance, “Please direct your gaze onto the far wall.” Directives are most likely to be said by doctors and occur during the physical examination segment, but they may be uttered by patients and in other segments of the interview.

Even more to the point of a controlling style, some research suggests that physician’s advice is more likely to be followed if a rationale or justification is also provided (Mazzuca & Weinberger, 1986; Mazzuca et al., 1983). As such, two categories were derived to identify those instances. A justification is an utterance that offers a warrant or reason to account for a question, directive, or assertion uttered by the speaker or the other. An explanation is an utterance whose function is to inform or instruct the other person. An explanation can fulfill a teaching or instructional function by explaining procedures, tests, or actions to be taken. These utterances help the other to better understand the process s/he will encounter.

The final nine categories comprise a miscellaneous group of codes that have either emerged from the data or were important to include in coding utterances not covered in the first eighteen categories. An assertion is an utterance that is a declarative statement with propositional content. These are important to include to indicate utterances that are matter of fact or opinion statements. Agreements were necessary to include to indicate instances of explicit endorsement, acceptance, or confirmation of a speaker’s utterance. Agreements may function to urge continued information sharing and reinforce contributions, and in addition they give clear confirmation that one participant has accepted the
ideas advanced by the other. In contrast, disagreements describe instances were some sort of misalignment between participants' ideas or interpretations occurs. A disagreement is an utterance that explicitly indicates a speaker has a different opinion on the topic or disputes the factuality of an utterance. This is different from a correction which occurs when a person repairs the accuracy of a statement, but does so in a non-challenging way.

Next, an apology occurs when one speaker implies he or she is sorry for saying or doing something. Apologies are usually designed to serve an expression of remorse about something. A compliance is an utterance or behavior that is in direct accordance with a command, such as a directive. Hedging occurs when a speaker does not directly answer a question and does so by providing an answer with some pause or hesitation before providing a softened or qualified answer to the question. Hedging is a type of qualifier that is done in short phrases in order to reduce the impact of a statement or reduce the apparent negative implication of the utterance (Eakins & Eakins, 1978). The next category is similar to Jefferson's (1978) "giving appreciations," which indicates a receipt behavior. Here, a reinforcement occurs when an utterance provides direct support or encouragement for some behavior or statement on the part of the other person. Reinforcements suggest approval and pleasure with something the other has said or done, in addition to showing support. A Relational statement is an utterance that is primarily and explicitly intended to establish or maintain a relational function of some kind, such as trust or friendship. The small talk category was included to identify those
instances when the main function of the participants' talk is to fill time with phatic talk, where support and affiliation are displayed through topics of discourse that involve little personal significance (Rosenfield, Hays, & Frentz, 1976). Frankel (1983) indicated that small talk is frequently used in the medical interview when the major activity does not require talking, as such during the physical exam. Others report that small talk usually occurs before or after dealing with the main business of the interview (ten Have, 1991). Relatedly, is a category called humor. This category identifies utterances that make a joke or humorous statement relevant to the issue or event of the current topic of discussion. The final function code is called bracketing. This code is given to an utterance that foreshadows future moves that will be taken in the interview. For instance, “I understand you are in today for a few reasons. Before we get to that, I need to ask you a few questions about your medical history, okay.” These utterances indicate acknowledgment of the other's agenda while allowing the speaker momentarily to move to other matters. This is similar to what McLaughlin (1982) called a discourse bracket—a management speech act that functions to set off chunks of talk that have a coherent internal structure. Lastly, an incomplete category is used to account for utterances that are uninterpretable due to tape noise or muffled sound.

Research Questions

The Cegala and Waldron (1992) model of communication competence was discussed in Chapter 1 as a framework for initially assessing competence at the level of performance. In effect, this model
proposes that competence is grounded in a person’s ability to use language in pursuing and meeting not only his/her own goals but in accommodating the goals of the other. As has already been indicated, Cegala and Waldron argue that such goal coordination comes through participants’ alignment moves. The more aligned participants’ utterances are, in terms of uptaking on the meaning and intent of the other’s messages, the more competent communicators are. Such an approach to competence requires an assessment of language use that allows for tracking uptake in the sequential development of talk. To date, there is little evidence that a coding scheme can adequately trace uptake in this fashion. Thus, the task of developing such a coding scheme is extremely challenging and ground breaking. Accordingly, the objectives of the study are modest. The goal of this study is to provide an initial assessment of the coding scheme and determine whether additional refinement of it is worthwhile. In this regard, the study focuses on addressing two general research questions:

RQ1: What is the distribution of language categories usage by doctor-patient dyads in this sample.

RQ2: What are the language characteristics of high and low competence dyads?

The next chapter is a description of the sample, design, instrumentation, and data analysis techniques used in this study.
CHAPTER III

METHOD

Participants
The participants consisted of 16 physicians and 32 patients at a family practice clinic associated with a teaching hospital of a large midwestern university. In terms of the number of doctors and patients used in this study, it is a convenience sample. Three of the physicians were first-year residents, five were second-year residents, four were third-year residents and four were faculty members of the Department of Family Medicine. Twelve of the physicians were male and four were female. Nine were white, two were African-American, two were Asian, two were Hispanic, and one was Middle-Eastern. The average age of physicians was 33 years. Of the 32 patients, half were males. Fifteen were white, 16 were African-American, and one was Hispanic. The average age of patients was 44 years. Fifteen patients were new to the doctor, and 17 were return patients. Reasons for seeing the doctor were varied, ranging from complaints about an earache to AIDS-related problems.

Each of the doctors saw two patients. The initial intent was for each physician to see one new patient and one return patient, but this was not possible. Faculty physicians had mostly return patients and were not accepting any new patients, while first-year residents had mostly new patients because they had just started their residency program at the time of data collection.
Design

Participating residents and faculty physicians were recruited by a faculty member of the family practice clinic. Patients were first-time and return adult patients (all over the age of seventeen) to the clinic. Patients were contacted by phone at least one day before their scheduled appointment and asked to participate in a study concerning doctor-patient communication. They were told that their visit with the doctor would be videotaped, and that after the interview they would complete a brief questionnaire and then view the tape of the interview. After being informed of the risks and benefits for participating, the patient was offered a small stipend of $20.00 in return for his or her participation. If s/he agreed, the patient was advised that one of the researchers would be meeting him or her in the waiting room of the doctor’s office with a consent form. Once a patient agreed to participate in the study, the appropriate physician was contacted and permission was secured to videotape the appointment. Prior to videotaping, both the physician and patient were again briefed about the procedures and asked to sign consent forms.

After reviewing the procedures and obtaining consent, one of the researchers led the patient to an exam room specifically equipped for this study. This was a regular exam room equipped with a video camera and microphone that were positioned unobtrusively. To ensure privacy, the exam room was arranged so that patients would be out of camera view during any physical examination. The camera was suspended from the ceiling in a corner of the room, and the microphone was placed on a small desk, where history-taking and treatment discussions were conducted.
The video and audio equipment were connected to recording equipment and monitors in a central control room down the hall from the exam room.

Once the patient entered the room and was seated, the camera was turned. Taping began when the physician entered the room. The entire interview was recorded until the end of the appointment. Immediately following the appointment, the patient and doctor were taken to separate rooms to complete a post-interview questionnaire and to view the videotape (two copies of the tape were made so the patient and physician could complete the viewing task separately, but simultaneously).

Participants first completed the post-interview questionnaire (which is discussed in the following section), then they were engaged in a stimulated recall task while viewing the tape. Second, before viewing the tape, participants were asked to re-live their experiences during the interview as they watched the video tape. This procedure is not directly related to this study, but was the focus of another study. They were instructed to say “stop” each time they recalled a specific thought or feeling they had during the interview. At these stop points, participants described what they were thinking or feeling. These descriptions were tape recorded and later transcribed. The thought/feeling protocols are discussed in a subsequent section of the chapter.

When the tape viewing was completed, the participant was thanked for his/her time, paid if a patient, and released from the study. Typically, the entire procedure, including the actual medical interview, took approximately 60 to 90 minutes.
Instrumentation

Post-Interview Questionnaire

Parallel questionnaires were constructed for the doctors and patients. The questionnaires consisted of 16 items on a Likert, five-point, agreement scale. The items were based on a literature review of research on patient satisfaction (Hall & Dornan, 1988), a recent satisfaction scale developed by Schneider and Tucker (1992), and items used on a national Harris Poll (Baker & Harris, 1985). Complete post-interview questionnaire data were available for the entire sample of 64 participants. Copies of the questionnaire are included in Appendix B.

Part of the questionnaire used in this research was intended to provide an assessment of both patients' and doctors' immediate satisfaction. The questionnaire items were designed to assess satisfaction with the amount and quality of information exchange and attention to relational matters that occurred during the interview. These dimensions of satisfaction were selected for assessment because they are most directly linked with communication processes and are the most frequently measured aspects of satisfaction (Hall & Dornan, 1988b).

Composition and grouping of the post-interview questionnaire items. The information exchange and relational items were grouped into subtests according to their face validity and subsequently analyzed for their unitary coherence using item-by-total score correlations. The reliability of subtest items was estimated using Cronbach's alpha. On both versions of the questionnaire, items 3, 4, 6 and 12 comprised the information
exchange sub-scale, while items 7, 14, 15 and 16 comprised the relational communication sub-scale.

Four items comprise the information exchange subtest. The items are (contents in brackets indicate wording for the patients' questionnaire):

I [the doctor] explained the patient's [my] medical problem to him/her in language that he/she [I] could understand.


I [the doctor] made sure the patient [I] understood the prescribed treatment (what he/she [I] should do to get better).

I [the doctor] honestly and thoroughly explained the limits of the prescribed treatment.

The corrected item-by-total score correlations for the four items were: .56, .60, .45, .51, respectively. Coefficient alpha was .75. Accordingly, the four scale values were summed to compute an information exchange score for each doctor and patient in the sample. The scores represent the doctors' perceptions of how informative they perceived themselves to be during the interview, while patients' scores represent how informative they perceived the doctors to be during the interview.

The relational subtest is also comprised of four items:
I [the doctor] showed that I [he or she] really cared about the patient [me] and his/her [my] health problem.

I [the doctor] engaged the patient [me] in small talk and friendly conversation.

I [the doctor] showed understanding for what the patient [I] was experiencing due to his/her health [my] problem.

I [the doctor] created a climate so the patient [I] could talk freely and ask questions.

The corrected item-by-total score correlations for the four items were: .51, .55, .74, .60, respectively. Coefficient alpha was .79. The scale values for these items were summed to compute a relational score for doctors and patients. Doctors' scores represent the extent to which they perceived themselves as communicating relationally with patients, while the patients' scores indicate the extent to which they perceived doctors communicating relationally.

In sum, the average item-total score correlation for the information exchange items was .53 (range: .44 to .60), with an alpha of .75. The average item-total score correlation for the relational items was .60 (range: .51 to .74), with an alpha of .79. Given the small number of items comprising these scales (i.e., four in each), the reliabilities are adequate.
The mean item-total score correlations suggest that each scale is composed of items that assess the same underlying construct.

The information exchange and relational communication scores were computed by summing the individual item responses for each scale. The overall mean for the information exchange scale was 17.93 (sd = 2.30), while the mean for the relational scale was 18.28 (sd = 2.35). Six participants had missing data for an item comprising one of the scales, in which case the mean of the missing item from the appropriate sample (i.e., doctor or patient) was substituted for the missing item.

The remaining post-interview questionnaire items were left as single-scale items, even though single-scale items are typically not reliable.

Two items were initially intended to form an additional subtest called partnership building. However, the item-by-total score correlations for these items were .24 and .33, with an alpha of .42. Accordingly, the items were not grouped as initially intended, but were left as single-scale items. They are:

I [the doctor] decided what treatment the patient [I] should have without asking for his/her [my] opinion.4

I [the doctor] explained alternative treatments and, together, the patient and I [we] decided which alternative to follow.

Similarly, two items that were initially intended to assess information exchange did not correlate significantly with the other information exchange items, and lowered the reliability of the
information exchange scores when they were added to that subtest. Accordingly, these items were also left as single-scale items. They are:

I [the doctor] answered all the patient's [my] questions honestly and completely.

I [the doctor] made a special effort to get the patient [me] to explain his/her [my] symptoms and problems.

The following item was included as part of the post-interview satisfaction measure because some research suggests that it is centrally important to patients' overall satisfaction with health care delivery (Baker & Harris, 1985):

I [the doctor] spent enough time with the patient [me].

This item was not expected to be part of any subtest and analysis supported this expectation. Therefore, it was left as a single-scale item. Similarly, the following item was not expected to relate to any subtest:

The length of time the patient [I] waited to see me [the doctor] today was reasonable.

This item was included because previous research has shown that wait time is an important factor in patients' satisfaction with health care delivery (Baker & Harris, 1985).
Finally, two items were included on the post-interview questionnaire to assess global judgments of self- and other-evaluated communication competence. Although the concept of communication competence is complex and multi-dimensional, these global items were included for the following reasons. First, there is not an adequate empirically-based set of criteria for judging the communication competence of doctors and patients (Kreps & Query, 1990). Thus, it is difficult to determine what items should be included on a scale designed to assess doctor-patient communication competence. Second, the approach to competence used in this research is grounded in the communicative behavior of participants, as opposed to self/other judgments. The two competence items are:

I was a competent communicator during the visit.

The patient [the doctor] was a competent communicator during the visit.

Language Coding System

The term “utterance,” is used to describe a coding unit. The unit coded with this scheme is an utterance usually consisting of an entire speaking turn, even if it consists of several phrases. The definition of a utterance used here is: a word or series of words spoken by an individual that may or may not be interrupted by or overlap with other talk by the partner. If there is an overlap, the first unit ends there and the next unit begins with the overlapped talk. In most cases, this unit represents a
complete thought, but in other cases it may be incomplete because the remaining portion occurs after the next utterance of the other participant. Multiple utterances can occur within one speaking turn. When one participant begins speaking, it is immediately counted as an utterance unit. During this turn at talk, multiple utterances may or may not occur before the speaking turn is over. In some cases an utterance is interrupted by another’s utterance and is continued in the next turn after the interruption. In this case, two units are identified for coding. If a complete thought or idea is clearly identifiable in the portion before the interruption, it is coded a complete unit while the remaining portion (second part after the interruption) is coded as an extension on that previous utterance. This indicates that a new utterance has not occurred but the thought idea is being continued. If the utterance is not clearly a complete unit, it is coded “incomplete” but counted as an utterance unit.

The following unitizing rules were used. First, the task of assigning units to the transcripts was done only after the coding scheme was developed. Second, before applying the coding scheme to the data, each transcript was unitized and assessed for reliability by the researcher and one other person associated with this project. Decisions regarding units were based on the definition provided above regarding what constitutes a speaking turn, with particular attention given to expression of a complete thought. In most cases, decisions were made by identifying the function that the unit was serving. Third, when there were longer utterances that included multiple content and alignment shifts were encountered, unitizers followed the rule: “when in doubt, go with less.” This rule
emerged to help keep the original flow and order of the utterances as they were produced naturally. For instance, utterances that contained contextual questions, lead in assertions, etc., in most cases counted as one unit or turn.

Unitization of the entire data set was completed before application of the coding scheme. The researcher and one other person associated with the larger research project completed unitizing reliability. The researcher unitized all 32 dyads and the other coder unitized a selected 25% of the transcripts. The obtained reliability for unitizing using Holsti’s method was .96.

With unitization complete, the coding system explained and defined in Chapter II was applied to the 32 doctor-patient interactions (Appendix A). The author coded the entire data set using the coding system. Two other coders not associated with this project were utilized to establish coding reliability of the system. Before actual coding began, the researcher trained the two coders independently of one another. This was accomplished with individual meetings and at-home study. Training sessions lasted an hour to an hour and a half and occurred once a week, for four weeks. During this training period, the coders were asked to study the coding system at home and then portions of transcripts were provided on which to practice during individual meetings. These practice sessions and at home study constituted their training. After the fourth week, each coder was given one unitized transcript per week for six weeks. Six dyads constitutes approximately 20% of the data set, an acceptable amount for reliability coding. Upon completion of each transcript, the researcher and
coder met and compared codes. During these meetings, disagreements were discussed and subsequently, directions and some categories were further clarified and modified. No new categories were added, only examples and some definitions were modified.

Reliability was assessed on each of the five codes separately (content, acknowledgment token, interruption, uptake, and function). The total number of codeable units was calculated by summing all individual units per dyad. However, this sum does not equal the total number of individual codes because each of the five codes does not always occur with all identified units. For example, every unit had content identified, but the alignment and function codes were not always present. Thus, each code was summed individually and reliability assessed on each. Holsti's (1969) method of agreement was used to determine reliability scores on each of the five codes. This method involves a proportion with the numerator being the number of coders multiplied by the number of coding agreements and the denominator being the number of total codes possible multiplied by two. In this case, two reliability scores were calculated, one for each coder and the researcher.

Reliability coding was completed on six dyads with two independent coders. The reliability scores reported here are averaged across all six dyads and reported for each of the five codes. Coder one reliability scores with the researcher were .83 for content, .68 for acknowledgment tokens, 1.00 for interruptions, .80 for alignment, and .70 for function. Coder two reliability scores with the researcher were .80 for content, .72 for acknowledgment tokens, 1.00 for interruptions, .76 for
alignment, and .70 for function. Reliability scores were achieved on all but one category with coder one.

Data Analysis

The method of data analysis selected for this study involved a combination of quantitative and interpretive techniques. The reasons for this selection are as follows.

As indicated in Chapter II, this study is viewed as a preliminary assessment of the language content category system. A primary goal of this research is to determine how well the content coding scheme is able to reflect patterns of aligning actions that are consistent with the view of communication competence and doctor-patient interaction discussed in Chapters I and II. In particular, competent communication is thought to occur when participants craft utterances to address self and other goals (e.g., matters of concern; needs, such as affective support and information).

Such a view of communication competence requires an assessment procedure that allows the researcher to track topical/thematic content development and determine the extent to which subsequent utterances functionally address the meaning and intent of prior utterances. Other researchers with similar concerns have used quantitative procedures such as lag sequential analysis for this sort of assessment (e.g., Bakeman & Gottman, 1986). Lag sequential analysis has not been used in this study for two reasons: (a) the present category system results in far too many codes to allow for practical application of lag sequential methods and, (b) there is some question about how well such techniques can adequately represent the dynamics of language use (see Roter & Frankel, 1992; Schegloff, 1993).
As an alternative, this researcher opted for an analysis procedure that first relied on examining the frequency of language category usage, followed by an interpretative analysis of text, and finally, re-assessment of category usage. This procedure allowed for an assessment of the coding scheme in comparison to a text-based, interpretive evaluation of participants' language moves. Such a procedure was considered especially important at this preliminary stage of category scheme assessment. If there was little indication that the category scheme was capable of adequately reflecting natural language usage, then further development of the category system would be abandoned in favor of more interpretative approaches, such as conversation analysis. On the other hand, if there was evidence that the coding scheme produced data that were at least partially consistent with interpretive findings, then results could be used to further refine the coding system. The following provides a brief overview of the procedures used in data analysis.

Stage one: Frequency analysis. The five-digit category codes (i.e., reflecting coding decisions on content, acknowledgment tokens, interruptions, uptake, and function) were entered as a data file in the mainframe computer. SPSS was used to compute frequency counts on various combinations of language codes and sample demographics (e.g., dyad, doctor, patient). These frequency counts were carefully examined for evidence of expected patterns of competent and less competent communication such as topic control, evidence of relational statements and types of questions and answers provided. The frequency results provided information relevant to where in the transcripts to examine
specific two-turn sequences such as doctor question/patient answer, answer/follow-up, patient question/doctor answer, and where in the interaction relational statements occurred. The following chapter provides detail and a rationale regarding these expectations given the frequency results.

Stage two: Interpretation of text. Transcripts were read while listening to an audio tape recording of the interaction. Portions of the transcripts which reflected dominant frequency patterns identified at stage one were noted. For example, careful attention was paid to how conversation topics/thematics were developed, and the extent to which participants picked up on apparent concerns of importance to each other (e.g., in terms of issue vs. event extensions, responsiveness to embedded questions or implied topics of concern). In addition, attention was given to larger contextual matters, such as what communicative events preceded particularly noteworthy sequences of talk, and what events followed them. Detailed notes were taken on each dyad as these and similar observations were made. These notes were used as a preliminary method by which groupings were made. Similar patterns of aligning interactions which occurred within specific dyads helped to determine the initial groupings. A checklist of patterns and specific categories was created by which dyads were grouped a second time. After this second grouping, further description was made of those patterns/events that were consistent across all dyads. That final list of interaction qualities of the competent group included three items. First, it was determined that more competent dyads explored diagnostic and treatment information in a more elaborate (i.e., in
terms of content of the information) and issue-responsive fashion than less competent dyads. The next criterion by which a dyad was considered competent involved identifying extent to which both doctors and patients contributed to topic development, relational positivity, and reinforcement. The competent pattern was exhibited by the presence of more relationally oriented functional categories throughout the interview (e.g., small talk, humor, legitimizing affect, and reinforcement). The third interactional feature evident in the more competent dyads was an overall pattern of issue-responsiveness by both participants. For instance, patients in the more competent dyads asked more direct questions and their physicians provided elaborated answers. These qualities were summarized into three general features of competent dyads and are described in more detail in Chapter IV.

On the basis of these three criteria, the dyads were grouped into high, moderate or low competent groups. Ten dyads identified in the more competent group and those were dyads 1, 6, 7, 9, 14, 17, 25, 26, 29, and 32. Those dyads who were classified into the low competent were 2, 3, 4, 5, 8, 12, 18, 19, 21, and 27.

Stage three: Re-assessment of frequencies. Given the competence groups identified at stage two, frequency data were examined via ANOVAs, using the competence grouping as the independent variable. The expectation was that the groups would differ significantly in category usage in ways that were consistent with the interpretative analysis.
CHAPTER IV

RESULTS AND DISCUSSION

This chapter presents both the results and discussion of the data analyses. Chapter V includes a discussion of conclusions and implications. This order of presentation was selected to maximize clarity of presentation. And, due to the quantitative and qualitative method of data analysis used in this study, it is more appropriate to present the results and discussion together.

Prior to reporting the main results and discussion relevant to the two research questions, preliminary results are presented in the following section. The preliminary results are pertinent to validity issues regarding the grouping of dyads into high, medium and low competence. Recall from the brief discussion of data analysis procedures at the end of the last chapter, that at stage two an interpretive analysis was conducted on the texts of the doctor-patient dyads. A major result of that analysis was the grouping of dyads into high, medium and low competence. The preliminary analyses in the following section were conducted to assess this grouping against outside criteria (i.e., data other than participants' language performance). Thus, the preliminary analyses are offered as a validity check, of sorts, on the reasonableness of the grouping decisions. The assumption is that if external criteria support the grouping of dyads
into high, medium and low competence, then some evidence is provided to support the reasonableness of the grouping decisions.

**Preliminary Analyses and Results**

The preliminary analyses were conducted on four sets of data. The first data set consists of the information exchange and relational subtests from the post-interview questionnaire. The second data set consists of selected, single-item scales from the post-interview questionnaire. The third data set includes the self- and other-competence judgments, also taken from the post-interview questionnaire. Finally, the fourth data set consists of composite variables that were constructed from the results of categorizing thought/feeling protocols gathered in the stimulated recall sessions reported in a related study by Cegala et al. (1995). Each of the following sections addresses one of these data sets by first offering a rationale connecting the selected variable(s) to communication competence, and then presenting results of data analyses. It should also be noted that these and all other statistical tests reported in this chapter are based on the dyad as the unit of analysis. The dependent measures are the averaged doctor-patient scores per dyad.

**Data Set One: Perceptions of Information Exchange and Relational Communication**

The review of literature in Chapter I indicated that the primary communicative tasks in a typical medical interview involve information exchange and relational communication. The review concluded with the notion that these fundamental tasks should be central to any definition of communication competence on the part of doctors and patients. Thus, it is expected that participants' perceptions of information exchange and
relational communication during the medical interview should relate in predictable ways to the observed differences in dyads' competence based on their language performance.

Unfortunately, however, the perceptual data on information exchange and relational communication that are available for this study are incomplete. Ideally, the data would reflect perceptions of both participants' competence in information exchange and relational communication. In fact, data are available on only participants' perceptions of the doctors' performance of these communicative behaviors. Even so, there should be a relationship between the competence groupings and these data, such that the highs are greater than the moderates, who are greater than the lows (H>M>L) on perceptions of doctors' information exchange and relational communication.

ANOVAs were computed on the information exchange and relational scores using competence group membership as the independent variable. The F test results for information exchange were nearly significant at the conventional .05 level [F (2, 29) = 3.08, p = .06]. The group means were ordered as predicted: H = 18.40, M = 18.36, L = 17.06. Even though the F test was not significant at .05, the multiple range test (i.e., least significant difference test) indicated a significant difference at .05 between the L and both the H and M groups. These results are consistent with the grouping of the dyads into H, M and L. Similar results were found for relational communication scores. The ANOVA results were nearly significant, F (2, 29) = 2.67, p = .08, with the means ordered as
predicted: \( H = 19.05, M = 18.52, L = 17.30 \). The multiple range test indicated a significant difference between the H and L groups at .05.

Although the \( F \) tests did not quite reach the conventional level of significance, the order of means for both analyses were in the predicted direction, and the multiple range test results were significant at .05. Given that the data represent only perceptions of the doctors' information exchange and relational communication, these partially significant results are taken as supportive of the competence groupings.

**Data Set Two: Selected Single-Item Scales**

As reported in Chapter III, the post-interview questionnaire contained several single-scale items that reflected matters of central importance to patients' satisfaction with health care delivery, as indicated in a national survey conducted in 1986. Patient satisfaction is the most often used outcome measure in research on doctor-patient communication (see Thompson, 1995 for a review). Considerable research has shown that patient satisfaction on a number of dimensions is directly linked with the quality of doctor-patient interaction during the medical interview (see Baker & Harris, 1985 for a review). Thus, it is reasonable to expect a positive relationship between patients' satisfaction and the competence groups. Doctor satisfaction has received far less attention in the literature, and as a result there is less known about what factors contribute to doctors' satisfaction with health care delivery. However, it is not unreasonable to expect that doctors and patients would have similar concerns about at least some aspects of satisfaction (e.g., meeting the needs of the other, using time effectively).
ANOVAs were conducted on the single-scale items of the post-interview questionnaire (see Chapter III for a listing of these items). Two of the results were significant. The F test relevant to the item: The doctor [I] spent enough time with me [with the patient] was significant \(F(2, 29) = 5.87, p = .007\). The order of group means was in the predicted direction: \(H = 5.00, M = 4.95, L = 4.89\), with the multiple range test indicating a significant difference between the low competence group and the other two groups. On the surface, this result may not appear to relate directly with communication competence. However, what is interesting about this result is that the three competence groups did not differ significantly in the actual amount of time devoted to the entire interview \(F(2, 29) = 1.31, p = .28\) or in the actual amount of time the dyads were engaged in interaction \(F(2, 29) = 0.48, p = .62\). Thus, there is the implication that the participants' perceptions of the amount of time devoted to the patient were likely grounded in the quality of the time they spent together, rather than the actual length of time. This, of course, is an expected function of the communicative competence of the dyads and, thus, provides some additional support for the competence groupings.

The second ANOVA relevant to the single-item data was not significant \(F(2, 29) = 2.48, p = .10\). However, the multiple range test indicated a significant difference between the low and high competence groups at the .05 level \(H = 5.0, L = 4.7\). The item was: The doctor [I] answered all my [the patient's] questions honestly and completely. This item was initially intended to form part of the information exchange subtest, however it did not correlate significantly with all of the other
subtest items, so it was retained as a single-scale item. Even so, the item clearly relates to the doctor's competence in the medical interview, thus it provides some additional support for the competence grouping decisions. **Data Set Three: Self- and Other-Competence Judgments**

Considerable research in the literature makes the case that the operational definition of competence should include self and other judgments of conversation participants (e.g., Spitzberg & Cupach, 1984). Thus, it is expected that participants' perceptions of self and other's competence should be consistent with competence assessments based on other criteria (in this case, the participants' language performance). While this relationship makes sense conceptually, there are problems at the operational level in testing it. Among other problems, there is ambiguity regarding what criteria to employ in self-and other-competence assessment instruments (see Pavitt, 1989), and there are problems in correlating global assessment data with process variables (see Stiles, 1990). These problems are especially relevant here because the only available competence judgments are based on single-scale items. Even so, there should be reasonable consistency between the competence groupings and the perceptions of the participants in those groups.

Each participant provided an assessment of self- and other-competence on five-point Likert scales. The data for each participant (i.e., self-judgment and other's judgment of self) were averaged to produce a single score reflective of both participants' judgments of competence. These scores were then used as a dependent variable in an ANOVA with competence group membership serving as the independent variable. The
results were significant \[ F (2, 29) = 3.33, p = .05 \], but not exactly in the expected order. The means of the three groups were: \( H = 4.72, M = 4.88, L = 4.50 \), with the multiple range test indicating a significant difference between the moderate and low competence groups. Thus, although the means of the high and low competence groups were in the expected direction, the moderate competence group's data were higher than expected. However, given the problems with these judgment data, the results still provide some support for the competence groupings. They are especially supportive if taken alone, but in conjunction with the other data already reported and the data reported below, they contribute to an overall picture supporting the validity of the competence groupings.

**Data Set Four: Participants' Cognitive/Affective Responses**

As is true for many areas of study in the social sciences, communication competence scholars have placed considerable emphasis on individuals' social cognitive processes (e.g., Cegala, 1981; Cegala and Waldron, 1992; O'Keefe & Delia, 1983; Spitzberg & Cupach, 1984). In general, these scholars provide evidence to show that competent communicators' social cognitive processes are different from less competent communicators. Thus, it is reasonable to expect the participants in the three competence groups in this study to evidence different cognitive/affective responses to the interview. To test this relationship, the thought/feeling data gathered through stimulated recall (see Cegala et al., 1995) were used as dependent variables in a series of ANOVAs with competence group membership serving as the
independent variable. The data collected for the Cegala et al. (1995) study were from the same participants as those used for in dissertation study.

Several composite variables were computed for each participant using the individual thought/feeling categories developed and described in Cegala et al. (1995). Five levels of content categories were developed to categorize all the thought/feeling protocols; interaction-focused, technically-focused, social inference, self-focused, and system focused. Some of these categories were also coded for direction (self-focused vs. other-focused) and valence (positive, negative, or neutral). However, only selected variables are reported here that are thought to have particular relevance to communication competence. Composite variables were calculated by summing selected categories. They are: the proportion of positive thoughts/feelings (POS), the proportion of negative thoughts/feelings (NEG), the proportion of positive, interaction-focused thoughts/feelings (INTERPOS), and the proportion of negative, interaction-focused thoughts/feelings (INTERNEG).

The ANOVAs on POS and NEG were both significant \[F (2, 29) = 6.03, p = .006; F (2, 29) = 3.56, p = .04\], respectively, such that the more competent groups had proportionally more positive thoughts/feelings and proportionally less negative thoughts/feelings (POS: H = .40, M = .19, L = .15; NEG: H = .33, M = .53, L = .64). Similar results were obtained for INTERPOS and INTERNEG, although the latter \(F\) test was not significant at .05 \(F (2, 29) = 4.40, p = .02; F (2, 29) = 2.14, p = .13\). To further probe the interaction-focused thoughts/feelings, a new composite variable was created by subtracting the negatively-focused thoughts/feelings from the
positively-focused thoughts/feelings relevant to the interaction. An ANOVA on this variable was significant \[ F(2, 29) = 5.08, p = .01 \], indicating that low and moderate competence groups had more negative-to-positive thoughts/feelings than the high competent group (H = .10, M = -.25, L = -.28).

Overall, these results support the competence grouping decisions. Additionally, given the typical topics and goals of doctor-patient communication during an interview, it might also be expected that competent dyads would have more favorable thoughts/feelings about technical matters, such as talk about diagnosis, treatment and medical procedures. An ANOVA on technically-focused thoughts/feelings (i.e., the proportion of positive technically-focused minus the proportion of negative technically-focused) revealed a significant result \[ F(2, 29) = 6.07, p > .001 \]. The means were in the expected direction (H = -.04, M = -.03, L = -.25). These results provide additional support for the validity of the competence groupings.

Taken as a whole, the preliminary results provide reasonable evidence in support of the decisions made to group the dyads on the basis of the interpretive analysis of talk. However, it should be re-emphasized that the grouping decisions were not made solely on the basis of the interpretive analysis. Recall that the interpretive analysis was the second step in data analysis; it was preceded, and guided, by an analysis of the frequency data derived from the category system. The results of steps one-to-three of the data analysis are presented and discussed in the following sections.
Distributional Characteristics of Language Categories

A total of 10,958 units were coded from the 32 doctor-patient interviews. Of this total, 54% (5905) of the units were contributed by the doctors, while the remaining 46% (5053) of the units were provided by the patients. This near equal number of units by doctors and patients was surprising given that previous research has indicated clinicians generally contribute more utterances per interview than patients (McNeilis & Thompson, in press; Roter et al., 1988; Stiles et al., 1979; Street, 1991a).

RQ1 Results

Research question 1 asked what is the relative distribution of language categories for doctor-patient dyads? To answer this question, the data were input to an SPSS program and frequencies and proportions were computed. For ease in interpretation, these results are sorted by doctor and patient and summarized in Table 1. Where appropriate, $F$ values are reported in order to show significant differences in frequencies of categories by doctors and patients. Note will be made only of the more interesting frequencies as these results were used as preliminary information for the interpretive analysis, step 2, in order to differentiate more from less competent dyads. Remaining frequencies will not be reported unless they are helpful in interpreting overall results.

Content

For both doctors and patients, discussion about history contributed to almost one-fourth of the total content discussed. Note that for doctors, over 50% of the content of their talk was about history, treatment, and
<table>
<thead>
<tr>
<th>Language Categories</th>
<th>Doctor</th>
<th>Patient</th>
<th>F value</th>
<th>probability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>1280 (21.68)</td>
<td>1178 (23.31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Problem</td>
<td>821 (13.90)</td>
<td>812 (16.07)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>1025 (17.36)</td>
<td>832 (16.46)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td>1054 (17.85)</td>
<td>670 (13.26)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prognosis</td>
<td>39 (.66)</td>
<td>30 (.59)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis</td>
<td>184 (3.12)</td>
<td>132 (2.61)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Medical</td>
<td>921 (15.60)</td>
<td>887 (17.55)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral</td>
<td>497 (8.42)</td>
<td>463 (9.16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Specific</td>
<td>81 (1.37)</td>
<td>48 (.95)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Content</td>
<td>3 (.05)</td>
<td>1 (.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acknowledgment Token</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present</td>
<td>1156 (19.58)</td>
<td>602 (11.91)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Present</td>
<td>4749 (80.42)</td>
<td>4451 (88.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interruption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present</td>
<td>336 (5.70)</td>
<td>413 (8.17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Present</td>
<td>5569 (94.30)</td>
<td>4640 (91.83)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Alignment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuer</td>
<td>630 (10.67)</td>
<td>276 (5.46)</td>
<td>6.29</td>
<td>p = .01</td>
</tr>
<tr>
<td>Event Extension</td>
<td>1068 (18.09)</td>
<td>639 (12.64)</td>
<td>14.1479</td>
<td>p = .0004</td>
</tr>
<tr>
<td>Issue Extension</td>
<td>2774 (46.98)</td>
<td>3677 (72.77)</td>
<td>3.5749</td>
<td>p = .06</td>
</tr>
<tr>
<td>Pop Extension</td>
<td>109 (1.85)</td>
<td>47 (.93)</td>
<td>7.5059</td>
<td>p = .008</td>
</tr>
<tr>
<td>Topic Change</td>
<td>1026 (17.37)</td>
<td>198 (3.92)</td>
<td>160.7897</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Immediate Pop</td>
<td>12 (1.90)</td>
<td>48 (.95)</td>
<td>46.5105</td>
<td>p &lt; .00001</td>
</tr>
</tbody>
</table>
Table 1, continued
Frequency and Percentage of Language Categories by Role with F values.

<table>
<thead>
<tr>
<th>Language Categories</th>
<th>Doctor</th>
<th>Patient</th>
<th>F_value</th>
<th>probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Utterance(^a)</td>
<td>146 (2.47)</td>
<td>14 (.28)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Alignment coded</td>
<td>40 (.02)</td>
<td>154 (3.05)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Function

<table>
<thead>
<tr>
<th>Function</th>
<th>Doctor</th>
<th>Patient</th>
<th>F_value</th>
<th>probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed Question</td>
<td>617 (10.44)</td>
<td>75 (1.48)</td>
<td>39.8594</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Moderately</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed Question</td>
<td>638 (10.80)</td>
<td>55 (1.09)</td>
<td>57.7151</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Open Question</td>
<td>182 (3.08)</td>
<td>4 (.08)</td>
<td>50.9548</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Embedded Question</td>
<td>8 (.13)</td>
<td>80 (1.58)</td>
<td>16.3617</td>
<td>p = .0001</td>
</tr>
<tr>
<td>Solicited Answer</td>
<td>111 (1.88)</td>
<td>1096 (21.67)</td>
<td>51.8624</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Elaboration</td>
<td>38 (.64)</td>
<td>274 (5.42)</td>
<td>46.1461</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Unsolicited</td>
<td>16 (.27)</td>
<td>326 (6.45)</td>
<td>47.8678</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Expansion</td>
<td>334 (5.66)</td>
<td>884 (17.49)</td>
<td>14.0474</td>
<td>p = .0004</td>
</tr>
<tr>
<td>Conditionally</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relevant Question</td>
<td>145 (2.45)</td>
<td>99 (1.96)</td>
<td>2.3817</td>
<td>p = .12</td>
</tr>
<tr>
<td>Formulation</td>
<td>143 (2.42)</td>
<td>7 (.14)</td>
<td>28.5702</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Restatement</td>
<td>230 (3.90)</td>
<td>78 (1.54)</td>
<td>14.6025</td>
<td>p = .0003</td>
</tr>
<tr>
<td>Assertion</td>
<td>618 (10.46)</td>
<td>284 (5.62)</td>
<td>17.5143</td>
<td>p = .0001</td>
</tr>
<tr>
<td>Agreement</td>
<td>113 (1.91)</td>
<td>290 (5.74)</td>
<td>13.9771</td>
<td>p = .0004</td>
</tr>
<tr>
<td>Disagreement</td>
<td>19 (.32)</td>
<td>64 (1.27)</td>
<td>12.93</td>
<td>p = .0006</td>
</tr>
<tr>
<td>Correction</td>
<td>30 (.50)</td>
<td>85 (1.68)</td>
<td>7.9396</td>
<td>p = .006</td>
</tr>
<tr>
<td>Legitimizing Affect</td>
<td>38 (.64)</td>
<td>2 (.03)</td>
<td>12.4615</td>
<td>p = .0008</td>
</tr>
<tr>
<td>Naming</td>
<td>6 (.10)</td>
<td>1 (.02)</td>
<td>2.0449</td>
<td>p = .15</td>
</tr>
<tr>
<td>Apology</td>
<td>16 (.27)</td>
<td>4 (.08)</td>
<td>7.1538</td>
<td>p = .009</td>
</tr>
<tr>
<td>Polite Directive</td>
<td>12 (.20)</td>
<td>0 (0)</td>
<td>4.7288</td>
<td>p = .03</td>
</tr>
<tr>
<td>Directive</td>
<td>412 (6.98)</td>
<td>3 (.06)</td>
<td>155.1911</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Qualified Directive</td>
<td>75 (1.27)</td>
<td>1 (.02)</td>
<td>37.8413</td>
<td>p &lt; .00001</td>
</tr>
</tbody>
</table>
Table 1, continued

Frequency and Percentage of Language Categories by Role with F values.

<table>
<thead>
<tr>
<th>Language Categories</th>
<th>Doctor</th>
<th>Patient</th>
<th>F value</th>
<th>probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance</td>
<td>2 (.03)</td>
<td>274 (5.42)</td>
<td>93.1108</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Relational</td>
<td>135 (2.29)</td>
<td>59 (1.17)</td>
<td>11.6649</td>
<td>p = .001</td>
</tr>
<tr>
<td>Hedging</td>
<td>2 (.03)</td>
<td>25 (.49)</td>
<td>7.6097</td>
<td>p = .007</td>
</tr>
<tr>
<td>Justification</td>
<td>93 (1.57)</td>
<td>6 (.12)</td>
<td>26.4144</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Explanation</td>
<td>267 (4.52)</td>
<td>27 (.53)</td>
<td>59.0890</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>96 (1.62)</td>
<td>8 (.16)</td>
<td>21.4343</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Bracketing</td>
<td>70 (1.18)</td>
<td>7 (.14)</td>
<td>22.5718</td>
<td>p &lt; .00001</td>
</tr>
<tr>
<td>Small Talk</td>
<td>100 (1.69)</td>
<td>108 (2.14)</td>
<td>.3412</td>
<td>ns</td>
</tr>
<tr>
<td>Humor</td>
<td>62 (1.05)</td>
<td>45 (.89)</td>
<td>.6737</td>
<td>ns</td>
</tr>
<tr>
<td>Incomplete</td>
<td>89 (1.50)</td>
<td>87 (1.72)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Function coded</td>
<td>1188 (20.12)</td>
<td>695 (13.75)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Values in parentheses are percentages.

*a*First utterance category is not an alignment move. This category was used to indicate that an utterance occurred after a prolonged silence or when a participant left and then re-entered the room.

*b*The reader will note that 20% of the doctors' and 13.75% of the patients' utterances had no function code assigned. These are accounted for as follows. A function code of 00 occurred in two situations. No function code was assigned in cases of freestanding acknowledgment tokens and continuers. Doctors had 630 continuers and 558 freestanding tokens. Patients had 275 continuers and 419 were freestanding tokens.
procedural issues. Another 30% included discussion about current problems and non-medical topics. Comparable proportions occurred with patients. However, note that 23% of the content of patients' talk centered on history and 17% on current problems and non-medical topics. In this sample, patients had proportionally more units of non-medical talk than the doctors. Across all content categories, prognosis and diagnosis talk occurred proportionately less than either history, treatment, or current problems. It appears these doctors and patients spent very little time actually discussing diagnostic issues and prognostic topics. Discussion about non-specific topics was infrequent, which is expected given the task-oriented nature of the medical encounter. This appears to provide some support for an emphasis on information exchange as a major component of competence in doctor-patient communication.

Overall 70% of the doctors' and patients' talk was about history, symptom, treatment, and procedural issues. By virtue of the fact that doctors and patients spent three fourths of their time on mostly technical issues, it seems clear that communication is heavily weighted toward those issues deemed more "clinical" in nature, which results in a more physician oriented interaction. History, current problems, and procedural topics are topical areas that the doctor must address to get the necessary information in order to make a diagnosis and suggest a treatment. That is one of the major tasks to be accomplished by doctors. This means that patients' concerns to find out what why they are ill and what they need to do to get better--are of lower priority given fewer utterances overall on these contents. Thus, more time was spent on doctor-oriented topics,
when topics such as diagnosis (what’s causing the problem), treatment (how to fix it), and prognosis (what’s the future hold) clearly were pursued less frequently.

These results seem to provide some implications for what would be considered more and less competent interactions. A more competent interaction is one where doctors’ and patients’ issues are equally or more proportionally addressed. In other words, if the patient contributes more, the doctor controls the topics less often. These results are vital to identifying dimensions of competence relevant to content of the medical interview given that previous research has not explicated the relevance of content covered in the medical interview (except see Street, 1991a).

Acknowledgment tokens and interruptions

Acknowledgment tokens (ATs) for doctors occurred in only 19.5% of the total units. This accounts for both freestanding and within-turn tokens. Of the 1156 acknowledgment tokens, 48% were freestanding tokens. In terms of patients’ use of tokens, 11% of their utterances had acknowledgment tokens, of which 70% were freestanding. Perhaps not surprisingly, doctors had proportionally more ATs than patients. Research on ATs in the medical interview suggests that doctors use “okay” and other forms of ATs to transition topics while keeping topic movement toward a more clinical focus (Beach, 1995).

Patients initiated proportionally more interruptions than doctors. Patients interrupted the doctor in 8.17% of their total utterances whereas doctors interrupted the patient only 5.70% of the time. This is consistent with similar research on the relatively small proportion of
disconfirmations in other medical interactions (Garvin & Kennedy, 1986). What will become more evident later in this section is how specific alignment and functional categories are combined with interruptions and how these occur within competence grouping.

Alignment

Aligning moves describe the extent to which a participant follows or manages the topic at hand. Among the more noticeable results is the proportion of topic changes initiated by the doctor. Doctors changed the topic in 17.3% of the utterances, whereas patients changed the topic in only 4% of their units. This appears to be a way that doctors manage the interaction and control topic flow. These results are consistent with previous research (Frankel & Beckman, 1989; Mishler, 1984). Another interesting result is that doctors had proportionally more utterances across all of the alignment categories than the patients— an indication of more freedom to choose responses rather than having them imposed.

An additional indication of physician control is revealed by the finding that 73% of patients utterance responses were issue extensions—stayed on the substantive topic at hand. Doctors used issue extensions only 47% of the time. The implication is that doctors, through use topic changes and event extensions (which shift topic slightly), control the interview so much that patients' only viable response is to stay on the issue because doctor does the topic switching.

Functional Categories

The function category proportions show interesting, if not expected, trends. In terms of information-seeking and -giving categories, doctors
spent almost one-fourth of their talk time asking questions of the patient, which is consistent with findings by Roter, Hall, and Katz (1988). Again, the doctors appear to be in control of the interview not only in terms of content and alignment, but also because a majority of their talk time is spent asking patients questions. This allows the doctors to get the information relevant to them, but the effect is that what is deemed topically relevant becomes defined by the doctor, not the patient. Similar to this is the number of moderately closed and closed question asked by doctors in comparison to the number of open questions. Closed or moderately closed accounted for 87% of the questions doctors asked patients. These types of questions, as opposed to open question, direct the patient toward a particular type of information desired in the answer. Open question leave more room for patients to elaborate and expand, in addition to being able to introduce information that is not solicited by the doctor but perhaps could be relevant.

Given the high frequency of physician questions, 1/4 of patients’ talk time was answering questions from the doctor and another 1/4 providing additional unsolicited information. Of the 1370 answers provided, an overwhelming eighty percent of the answers provided only solicited information, while the remaining 20% were answers with additional information. Spending almost thirty percent of one’s total talk time providing only solicited information leaves little time to initiate other kinds of interaction, such as information seeking. Yet, patients attempted to provide unsolicited information (6.45%) and expansions (17.5%). Providing additional information and expansions on topics is
perhaps one way patients can re-establish some of the control they lose in answering so many closed questions from the doctors.

Spending so much of their talk time answering questions and providing additional information ultimately puts the patient primarily in the role of information provider. As mentioned earlier, this role is somewhat inconsistent with the expectation patients have for seeing the doctor—"to get information on how to get better." Patients asked 214 questions, which is a mere 6% of their talk content. These results support previous research that has found patients ask proportionally fewer questions during the medical interview than doctors (Frankel, 1990; Roter et al., 1988; West, 1982). Patients report wanting information (Waitzkin, 1985), yet they do not seem to be making great strides in securing that information. Perhaps the mistake is "expecting" the doctor to be the sole information provider, needing no help in performing competently in that role. Interestingly, patients asked more closed questions than moderately closed or open questions. Did the patients follow doctors lead such that closed questions were more appropriate?

Frankel (1990) argued that, in general, patient questions are "dispreferred" in the medical interview, so instead patients go about seeking information through more indirect means. This finding was supported here as patients asked more embedded questions than any of the other singular direct question type. In terms of doctors' answers, they chose to provide solicited information more often than not. In addition, it was a rare occurrence when they would provide unsolicited information,
which in some cases may be helpful to patients as a way to provide additional diagnostic or treatment information.

These results seem to indicate that patients rarely find or put themselves in the role of information-seeker. Indeed, they are information-givers more often than not. Doctors are clearly more often an information-seeker and they rarely place themselves in the role of information-provider. And more often that not, the patient does not request additional information, so the asymmetrical pattern continues.

Other categories relevant to information exchange besides questions were those regarding fidelity; formulations, conditionally relevant questions, and restatements. Doctors used formulations more often than patients. Doctors also used three times as many restatements than patients. In addition, they had more conditionally relevant questions. This may suggest doctors were better at fidelity types of information exchange moves, which may be a function of them receiving so much information. Implications for patient training in information exchange skills include learning more effective ways to check for understanding.

Other notable results are presented here with reference to the contents in which they occurred because it allows for detailed explication of the results. Doctors had twice the number of assertions as patients. This is not surprising as it may reflect doctors’ superior medical knowledge such that assertions are made about current problems or diagnosis. There seemed to be a pattern where some doctors used assertions more while discussing more medically-focused topics, such as more assertions while talking about treatment issues and in diagnostic
portions of the interview. Assertions by doctors occurred relatively infrequently in prognostic, behavioral and non medical topics.

In terms of whether patients and doctors agreed with, disagreed with, and corrected one another, some interesting trends emerged. There was a significant difference between patients and doctors on the frequency of agreements, disagreement, and corrections during the medical interview. The patients in this sample agreed with, disagreed with, and corrected the doctor far more often than the doctors did with the patients. A look at where these utterances occurred sheds some light on the results. Patients agreed with the doctors mostly on discussion of history, treatment, symptom, and non medical topics. Yet, these were the same topics on which the patients disagreed with the doctor more often (except non medical). Patients also corrected the doctor more often than doctors corrected patients during talk about history. Perhaps this has to do with patients feeling comfortable disagreeing with and correcting doctors while the topic was in the area of their expertise/experience. However, when it comes to topics such as diagnosis, treatment, and prognosis, the patient was less likely to disagree with or correct the doctor. These topics seem to be those in which the physician has expertise. Overall though, given just the frequencies on singular topics, it is unclear at this point what the implications are for competence.

Final comments regarding specific functional categories pertain to the more relationally-oriented group of categories. Doctors provided relatively fewer utterances pertaining to naming patients’ emotions, legitimizing affect, and statements that reinforce the patient. However,
doctors did contribute significantly more relational statements than patients. So, in this way, doctors appear to be doing most of the relational work. However, in comparison to the more task-oriented categories, doctors' relational comments were few and far in-between. What needs to be identified further is the content of the relational comments, where they occur, and how doctors and patients respond to one another.

Summary

Doctors and patients contributed relatively equal numbers of utterances in this sample. Despite this, other observations noted here suggest that doctors controlled the interview overall. Most of doctors' and patients' discussion centered on talk about patient history along with treatment and procedures. Comparatively, doctors and patients interrupted one another relatively equally, but doctors had more acknowledgment tokens. Regarding aligning moves, patients stayed on the issues far more often and doctors changed the topic five times more often. Finally, in terms of the functional aspects of their utterances, doctors and patients spent a fourth of their talk time asking and answering questions. Doctors made more assertions, but patients disagreed with and corrected the doctor more often. Doctors, as information seekers controlled the interaction through topic changes, closed questions, and content of talk focused mainly on "clinical" topics. According to the frequency output, patients provided mostly issue-oriented solicited information rather than elaborated information, and they asked relatively few questions.
These results show some interesting trends in terms of the relative contributions doctors and patients make in the medical interview. Yet, these results do not provide especially new information about doctors' and patients' contributions when compared to previous studies using other coding schemes—the results here are similar in nature to previous coding scheme results. These frequencies are summarized and aggregated across all subjects and in essence, individual cases and their dyadic results are not present. This dissertation study is about identifying possible patterns of more and less competent aligning interactions, not separate actions of each participant. Given this issue, dyadic analysis (all the categories combined) provides the more relevant information in order to differentiate competent from less competent dyads on the basis of their interactional qualities. The following section provides an introduction to such an interpretive analysis with the goal of grouping dyads into high, moderate, and low competent dyads. The intent of this analysis is to provide insight and direction for the definition of competence based on the aligning moves of doctors and patients, which occurs in the subsequent section.

As mentioned, overall alignment features of these interaction were not directly evident in the frequency output. Examination of the individual category frequencies revealed that, as expected, there was an overall asymmetry in the contributions of the doctors and patients regarding their roles in the information exchange process. Certain questions arose from the frequency analysis that seemed pertinent to making evaluations of competence. For instance, were some doctors better than others at providing additional information to patients? In
other words, when the doctors stepped out of their role of seeker and into the role as information giver of information, did some doctors provide information that was more detailed or in-depth? Additionally, patient contributions to the interview needed to be evaluated in terms of the implications for competence evaluations. The questions relevant to patients’ competence were: do some patients step out of their “designated” role as giver and into the role of seeker of information? If so, are some patients better at more direct attempts to ask questions than others?

Besides information exchange processes, relationally oriented categories provided some issues to be resolved through inspection of the text. For example, how did doctors and patients mutually create states of relational positivity or empathy through various combinations of relationally oriented language categories? Insights such as those necessary to make overall competence judgments were not apparent in the frequency results in and of themselves, thus, additional analyses seemed appropriate.

These questions guided the reading of transcript data and taped interviews, in addition to other criteria from previous research described below. Inspection of each doctor-patient interview was conducted in order to begin identifying alignment criteria by which distinctions could be made between more and less competent interactions. The procedure involved reading each coded transcript and listening to the audio-taped interviews, while taking note of specific language categories and sequences of categories mentioned above regarding information exchange and relational development. Particular attention was paid to how
conversation topics/thematics were developed, and the extent to which participants picked up on apparent concerns of importance to each other (e.g., in terms of issue vs. event extensions, responsiveness to embedded questions or implied topics of concern). In addition, other items were included to identify other communicative moves, based on previous research, considered more effective for meeting informational and relational goals (e.g. Beach, 1995; Frankel, 1984, 1995; Roter & Frankel, 1992).

For example, Frankel (1995) has identified that specific patterns of questioning by the doctor (e.g., fewer interruptions at the beginning of the interview) can facilitate more accurate diagnosis and treatment than others, and in some cases that can lead to whether or not a patient rejects that diagnosis or treatment. In addition, Frankel (1995) has noted that openings of the interview that are smoother in terms of moving from social greeting to clinical discussion are more likely to identify those cases where initially doctors and patients are more aligned interactionally. Another item Frankel (1995) has identified as potentially useful for assessing the competence of doctor-patient interactions is participants' ability to pick up and respond to "windows of opportunity" by showing empathy or legitimizing affect in response. Frequency of patient questions is another item considered relevant to overall alignment of utterances and goal coordination. For example, previous research has shown that patients infrequently ask questions (Frankel, 1990; West, 1982). Yet, other research has shown that patient training helped patients increase the number of questions they asked during the interview (Roter, 1979). The
potential effects of patients’ questions, not only in definitions of competence but also in their effects on the interaction itself, are apparent. These types of patterns, larger units of talk, and quality of talk became the initial criteria by which the 32 dyads were sorted into high, moderate, and low competent interactions. During initial sorting, other sequences and specific language categories were added to the list as they became evident. In other words, the initial list was added to and modified during the first sorting. Once all 32 dyads were sorted, the competent/less competent interaction criteria were finalized and a second sorting occurred. These criteria are reported in the next section.

Three Interactional Qualities of More and Less Competent Doctor-Patient Dyads

The analysis revealed that, as expected, various qualities of interaction were prevalent in some, but not all of the doctor-patient interactions. Using the criteria and questions posed above, three general features of interaction became apparent as descriptive of more competently aligned doctor-patient interactions. First, the doctors in the more competent dyads gave explanations about diagnosis and treatment that were more detailed and elaborate. Second, there was clear evidence of relational sensitivity, humor, and overall attention to patient initiated topics in the more competent dyads. Third, there was an overall pattern of exchange where patients asked questions, the doctors answered them directly, and those issues were pursued further. Evidence and descriptions of each of these more competent dyad features will be presented in three stages: (1) frequency results, (2) interpretive findings, and (3) results from
ANOVA's of language categories as the dependent variable and the competence group membership as the independent variable.

**Diagnostic and Treatment Information-Giving by Physicians**

**Frequency data**

The frequency data revealed some interesting trends regarding the extent to which doctors and patients in the more and less competent groups performed in information exchange related categories. To begin explicating this feature of the more competent interviews, frequency of doctors' and patients' contributions during diagnostic and treatment topics in terms of functional information exchange categories are presented in Table 2. The doctors in the competent group seemed to be providing more explanations only in the diagnostic portions of the interview. It was expected that more competent dyads would also have provided more explanations for treatment issues. However, the frequency results did not support this conclusion. Pursuing this result required further exploration into the specific utterance these doctors gave which were coded as explanations. It was also expected that perhaps more questions by patients would have some influence on treatment and diagnostic issues discussed. As it turns out, the patients in the less competent dyads asked more (14) embedded questions than patients in the more competent dyads (4) during talk about both diagnostic and treatment topics.

Another issue worth pursuing was the extent to which doctors and patients stayed focused on relatively fewer topics during diagnostic and treatment discussion. Table 2 shows that patients in the less competent
Table 2

Frequency of Selected Informational Categories by Competent Groups.

<table>
<thead>
<tr>
<th>Language Categories</th>
<th>Competence Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Doc/Pat (total)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
</tr>
<tr>
<td>Issue Responses</td>
<td>21/20 (41)</td>
</tr>
<tr>
<td>Topic Changes</td>
<td>8/0 (8)</td>
</tr>
<tr>
<td>Closed Questions</td>
<td>(0)</td>
</tr>
<tr>
<td>Solicited Answers</td>
<td>1/0 (1)</td>
</tr>
<tr>
<td>Elaborations</td>
<td>0/4 (4)</td>
</tr>
<tr>
<td>Embedded Questions</td>
<td>0/4 (4)</td>
</tr>
<tr>
<td>C.R. Questions</td>
<td>1/0 (1)</td>
</tr>
<tr>
<td>Explanations</td>
<td>16/0 (16)</td>
</tr>
<tr>
<td>Expansions</td>
<td>4/0 (4)</td>
</tr>
<tr>
<td>Restatements</td>
<td>0/1 (1)</td>
</tr>
<tr>
<td>Corrections</td>
<td>(0)</td>
</tr>
<tr>
<td>Justifications</td>
<td>3/0 (0)</td>
</tr>
</tbody>
</table>

Treatment

| Issue Responses     | 114/115 (229)     | 251/130 (381)     | 210/207 (417)     |
| Topic Changes       | 19/3 (22)         | 47/6 (53)         | 40/11 (51)        |
| Closed Questions    | 9/3 (11)          | 33/4 (37)         | 45/7 (52)         |
| Solicited Answers   | 6/30 (36)         | 14/58 (72)        | 10/52 (62)        |
| Elaborations        | 1/4 (5)           | 2/9 (11)          | 3/11 (14)         |
| Embedded Questions  | 1/0 (1)           | 1/4 (5)           | 0/8 (8)           |
| C.R. Questions      | 4/3 (7)           | 1/12 (22)         | 9/5 (14)          |
| Explanations        | 25/3 (28)         | 53/2 (55)         | 34/2 (36)         |
| Expansions          | 38/11 (49)        | 40/51 (91)        | 43/39 (82)        |
| Restatements        | 4/2 (6)           | 12/2 (14)         | 9/8 (17)          |
| Corrections         | 1/0 (1)           | 5/10 (15)         | 2/8 (10)          |
| Justifications      | 5/0 (5)           | 17/0 (17)         | 9/0 (9)           |
group changed the topic almost as often as the doctor (doctor 8, patient 5), whereas in the more competent dyads only the doctor changed the topic. Perhaps having patients change the topic as often as the doctor is not an effective aligning move for patients to make when trying to ask questions, assert a position, or get diagnostic information clarified. Further, the patients in the more competent group did not change the topic once. Additionally, while talking about treatments, the doctors in the less competent group changed the topic two times more often than the doctors in the more competent dyads (19 in the high group, 40 in the low group). Again, this seems to suggest that the more competent dyads stayed on an issue longer than those in less competent dyads. Doing so would help topic development in terms of continuing on an issue longer, perhaps to its natural completion, rather than skipping back and forth between topics.

In terms of information seeking in discussion on treatment and diagnosis, doctors and patients in the more competent dyads clearly asked fewer closed (more restrictive) questions. The assumption here is that the fewer closed questions asked on these contents, the more likely explanations and elaborations would appear. Closed questions are usually used to request specific information, in contrast to elaborated answers that can provide additional information. Given this, it is not surprising to see that the patients and doctors in the low group have more solicited answers than in the more competent dyads.

Finally, the frequencies revealed that patients corrected the doctor more often in the less competent interactions during talk about treatments. While this is not immediately interpretable, it is an issue that
can be unraveled in the interpretive analysis. Similarly, doctors and patients in the less competent dyads used conditionally relevant questions and restatements more often. From these frequencies one might infer that these message strategies are not as facilitating for establishing fidelity as previous research would suggest. This seems especially true as these occurred more often during diagnostic and treatment discussion. However, these conclusions need to be pursued further in the interpretive analysis.

Interpretive data

As revealed in the frequency data, the more competent doctors had more explanation in diagnosis but not in treatment discussion. This needed to be explored in terms of the actual content of these explanations to clarify such results. It was expected that despite frequency, doctors’ explanations in the more competent dyads would be more detailed and explicit in content. For instance, this would be defined as explaining a diagnosis and the ways in which it was reached, and detailing how a treatment was decided upon and how it is to be carried out (e.g. Parrott, 1994). One of the first interactional characteristics to differentiate dyads was the extent to which there was depth and follow up during the diagnostic and treatment sections of the interview. Specific criteria by which to judge the content of the contributions was necessary in order to make determinations of high versus low competent explanations.

In examining treatment explanations by doctors, Parrott’s (1994) seven general criteria for evaluating doctors’ explanations regarding treatment was used. These criteria include, level of disclosure about side
effects, details about cost, performance information, reinforcements of the instructions, alternative treatments discussed, name of the medicine given, and level of description/explanation of the entire treatment. How doctors explained and justified treatment decisions using the Parrott criteria seemed appropriate in evaluating differences among doctors on this category. The main reason the Parrott criteria was appropriate relates to the fact that relatively few studies have explored the actual content of the treatment recommendations that physicians make (except see Street, 1991a, 1992a).

After inspection of the texts, the more competent dyads exhibited three overall patterns relevant to diagnostic and treatment issues: (1) they met at least five of the seven Parrott criteria when discussing treatments, (2) they explained and spent considerable time on diagnostic topics, and (3) they discussed issues relevant to patient prognosis. These three qualities are described below along with examples from the text to illustrate how the more and less competent doctors performed on these three competent features.

**Treatment explanations.** Two examples from the more competent dyads serve as evidence of how these doctors fulfilled Parrott’s criteria of treatment explanation (dyads 1 and 6). In these two examples, the doctors explained and elaborated on all issues relevant to the prescribed treatment. This observation was especially prevalent in cases where the patient requested such information. Other examples from the less competent dyads show their relative inability to provide this kind of detailed description.
In dyad 1, the doctor had two particular treatments and diagnoses to make; an infected toe and problems with urination. Not only did this doctor spend considerable time describing to the patient how he figured the toe became infected, but he immediately followed this with an explanation of the particular treatment necessary to address the problem. While treating the toe, the doctor repeated important treatment information, such as the prescribed medication that the patient was to take and the need to schedule a follow-up appointment. In addition, the doctor explained that he would assess the severity of the patient’s urination problem after taking a culture. While taking the culture, the doctor explained all the sensations the patient may experience during the procedure. Afterwards, the doctor discussed the use of condoms with the patient (during the history, the doctor discovered the patient was sexually active with more than one partner). The patient indicated he used condoms, the doctor congratulated him on this and then asked a follow up question to make sure he used one every time. Next, the doctor justified why it was necessary to use them because of the protection from STDs and AIDS. The doctor then explained how and when to take the antibiotic and said again to schedule a follow-up appointment. Lastly, the doctor explained that if the patient’s toe got worse in the next two weeks to return and he would drain it again. But in the meantime, he suggested to avoid pressure on the toe and to dab the foot in hot water if necessary. Then, the doctor said he would call the patient with culture results. Given Parrot’s criteria, the only thing the doctor did not do was mention side effects information to the patient. In addition, the doctor used some justification...
and did so in conjunction with explaining why he was asking certain questions. Some of this information came only after the patient requested it, for example, as seen in the underlined portions:

P: Should I be soaking it in hot water, to dry it out a little bit?
D: No, really just try to watch pressure in that pain there. That will cause you more trauma. And I would like to still see you in two weeks.
P: That's cool.
D: to see if the, ah, puss formation is more organized, then we can actually drain it out. At this time, it is awfully painful.

A little later on:
D: If the nail is still doing bad, we will try and drain out that at that time. It should better though.
P: Okay.
D: Ah, also avoid pressure in that area, O. K.
P: Sure.
D: And, you can use, you know, dab your feet in some hot water, if you feel that will help you, . .

Dyad 6 also served as an exemplar of how forthcoming competent doctors were in providing treatment information. In this dyad, the patient complains of urinary discomfort. Below is a snippet of his explanation:

D: Now, the other thing, on that Gynelotrimin, uh, you might apply that down there, uh, oh, you know, put the cream down there maybe even a couple times. Just on the outside. You don't have to go way on the inside, but, you know, at least
P: Oh, good.
D: once a day for a week. And if that, check the label. If it says twice a day, you might go twice a day, but just on the outside. But get the cream, not the suppository. You just want the cream on the outside. And, uh, but call in a week if that's not getting better regarding the, uh, you know, the, the burning area down below.

As indicated in the underlined portions, during discussion of the recommended treatment, the doctor named medicines, described
performance, actually identified benefits to this treatment (in a later section), allowed room for alternative options (see below), reinforced/repeated the necessary steps. No side effects or cost issues (except that he said, “the generic works just as fine”) were mentioned. These issues were discussed not only when the doctor volunteered treatment information, but also after the patient requested it. The patient says “iodine didn’t work for me. You know I’m on the go too much,” so the doctor suggests the creme as an alternative. He repeated all this information in steps about three times before the interview ended.

In contrast to these examples, the doctor in dyad 8, at best, provided explanations of treatment that were brief, unelaborated, and usually coupled with an extended justification. Phrases that were common in her treatment explanations were, “Don’t do that,” or “Just stop eating all that junk.” Dietary suggestions were made but only in the form of “you must eat better.” Never is an explanation given of what is good or bad, she simply explains, “you just need to eat healthier stuff.”

Another example of an explanation that met all the criteria is found within dyad 9. The doctor in dyad 9 was excellent in giving explanations on what physical symptoms to expect during walking (this is a previously diagnosed hypertensive patient, and she had requested wanting to increase the amount of walking she could do in one day), what to do if a problem arises, and generally gives her options for continued walking, as long as she is aware of the warning signs of elevated blood pressure. He described these as, “if you get any chest pain, dizziness, any symptoms like that, go ahead and sit down until it subsides. If it lasts more than a couple of
minutes and you see a neighbor, flag them down just to be sure." In addition to this performance information, he repeated instructions at the end, asked about cost of prescription refill, and allowed the patient to describe how she knows the medicines rather than expecting the patient to follow every single thing as he lists it.

A final example in this treatment section is one that exemplifies a less competent approach to treatment descriptions. In dyad 21, the patient is new to this doctor. The patient indicated that he scheduled the appointment to have the doctor sign some papers relevant to his taking part in a fitness program at work. After an extensive history of the patient and a brief physical exam, the doctor asked the patient to fill out a questionnaire regarding stress, and then left the room. When the doctor returned the only thing he mentioned about the questionnaire was, "Oh, looks good. (3 minute pause) This is a test to check how anxious your are. See, that’s very low. Okay, I noticed like irregular heartbeat in your exam.” (This patient reported childhood medical history of an irregular heartbeat.) Specifically, the doctor went on to say:

D: Okay, I noticed like irregular heartbeat.
P: Hm mm.
D: So, we’ll do an EKG now and then I’m going, I’d like to put you on a halter... It’s like a Walkman... And it’s gonna record your heartbeat for 24 hours. You just continue with your normal life.

At this point, the doctor said he could not sign the papers until he got those results back. Clearly, the doctor provided minimal description for the halter, gave no explanation for saying “you just continue with your normal life,” and provided little justification for the procedure in
comparison to the doctors in the more competent dyads. In addition to the doctor’s minimal explanation of treatment decision, the patient asked no follow up questions regarding the nature of a halter, why it was necessary, or if there were alternatives to wearing it.

**Diagnostic explanations** These next two examples show how the more competent dyads freely shared diagnostic information in addition to the doctors’ reasoning associated with it, where the less competent dyads did not demonstrate this quality.

In dyad 32, the doctor clearly explained the diagnoses, her exam conclusions, and treatment recommendations for a patient complaining of fatigue. She suggested the symptoms were all stress related, which is what the patient wondered. She explained that the many factors the patient described regarding his mother, job, and exercise routine likely contributed to his high fatigue. In addition, after he said he had a “nagging throaty cough,” she suggested that it also could be part of the stress and perhaps a lingering viral infection. In particular, she responded by saying, “I’m wondering if blood work may help us here because you may have picked up the flu, or it could be not enough exercise, or it could be some stressful things going on in your life. We can, I can help you with that, well except for the exercise thing, I can’t exercise for you (laughing).” Consistent with the other doctors in this group, she gave details regarding treatments including names, performance information, and reinforcements/repeats the information.

The difference in how dyads were more or less competently aligned is seen in examining the diagnostic portions within dyad 18, one of the
less competent interactions. Over the course of the interview, the patient wondered, "Is it my cancer coming back?" In three of the four instances, the doctor minimized her comment and said, "Coming back?" and then moved onto another topic. His event response to the patient almost seems to suggest, "how can cancer come back?" These kinds of questions and responses stand in stark contrast to the other attempts at explanation provided by doctors in the more competent group. In the fourth and final incidence, the patient asked if a neurological consult would be appropriate, given her concern about the cancer returning. The doctor replied, "At this point, I really don't think so." To which she replied, "Oh, I guess I'm fine." He replied, "Well, I don't think you are fine, but I think the Antrovert (a medication he is prescribing to her for her dizziness) will take care of it. If it doesn't, then we'll do those big tests. But, I don't think they are necessary." This patient asked four times about the cancer coming back, and in all but one instance, the doctor completely ignored the request or just said, "Naw." This patient made four attempts at pursuing diagnostic related information, and yet the doctor did little to explain his decisions and instead justified them.

In contrast, dyad 25 provides evidence of competent performance on this feature. In this interaction the doctor, who was initially unresponsive to patient's elaborations, became increasingly open and forthcoming with his diagnostic conclusions. After the physical exam, the doctor said, "I don't see anything abnormal in your physical exam. What you can do is, since you have a history of, in your family, of diabetes, history of hypoglycemic shock. . ." He then asked a series of follow up
questions on diabetes history and the patient provided elaborations on more symptoms he had experienced. The doctor then says he has to consult with his preceptor (a faculty doctor who consults with residents on their diagnoses). When he returned, he suggested doing some blood tests and told the patient he could pick the time most convenient to have the blood drawn. Below is a small portion of the doctor describing why he is pursuing a diabetes diagnosis and the tests necessary for it:

D: If the results turn out to be something, I'll call you back immediately. However, while there is the possibility of diabetes, it is not likely. You drink a lot of fluids, but you are a big guy, you drink a lot. You also told me you've been eating a lot lately and gaining weight. With diabetes, you lose weight.

P: Right, yeah.

D: The tests are to rule out this problem.

P: Yep, that's right.

So, the doctor provided explanation of his diagnosis to this patient in particular, and of his treatment decision relevant to it.

The next example of how doctors provided inadequate diagnostic information comes from a less competent interaction and really points to the disparity/difference between the two groups. Dyad 27 is a return patient and the doctor is a third year resident. Near the beginning of the appointment, the doctor asked “how are you feeling today?” The patient responded, “Well, okay, except I have this foot fungus I need you to look at.” To which, the doctor responded, “Okay, hold on that for now, this is my time for behavioral, so. Let’s see, you scored high on this depression test, so I’ll want to ask you some questions there,” and began a line a questioning relevant to the patient’s state of depression. When the doctor did ask the patient about physical problems, the patient complained of an
infection on his feet. After examination of the foot, the doctor explained, “See, this is due to uncleanliness, and so what we will do is,” at which point the patient interrupted and said, “No, no, no, it’s not that, I take showers and what not, so I need something else for it.” One reason this diagnosis was rejected may have to do with the fact that the doctor did not ask the patient any questions relevant to his symptoms before he made the diagnostic statement. After the patient rejected the diagnosis, the doctor essentially dropped the issue by indicating he would still write out a prescription for the foot fungus and concluded by saying, “We are basically done here.”

Prognostic information. The third feature of explanation evident in the more competent group was the doctors’ and patients’ discussion of prognosis. These generally included instances where the doctors did some education on medication and lifestyle changes relevant to the future of the illness/condition and the implications for the patient.

Dyad 14 is a repeat patient visit where the doctor and patient discuss dietary progress and current prescription levels. This is a relatively simple interview where the doctor reinforces having a next appointment and clearly explains the patient’s progress. In fact, the patient brings up his prognosis and the doctor follows up by indicating he agreed with the patient. The doctor said that the weight loss and dietary changes will all contribute to “a leveling off of his weight . . . in addition to decreased cholesterol level and triglycerides as well.” There was some performance information given and some side effects discussed as well, but prognosis was the topic that was pursued throughout the interview.
Examples of how less competent dyads addressed prognosis are not easily presented given that they were categorized as less competent *because* they failed to provide prognostic information and explanation. At best, utterances such as “You’ll get better,” or, “Things will work out for you,” were offered as a sort of prognosis. But clearly these types of statements, in absence of elaboration in treatment suggestions, give patients little information on which to adapt, modify, or change behaviors or lifestyles.

In contrast, the doctor and patient in dyad 17 show attentiveness to prognosis. The patient in dyad 17 is a return patient who has terminal cancer and his appointment was a follow-up on previous tests and procedures. In this interaction, the doctor was clear and detailed in his use of explanations for diagnosis of a stomach disorder, treatment for it, and continuation of nutritional supplements necessary for dealing with the onset of cancer. He shared his reasoning and conclusions with the patient and gave lengthy descriptions of each. At one point, the doctor had a long turn at talk where he both explained and provided some justification for a particular treatment recommendation. He discussed benefits of it, how long it will take to work, side effects, and named the problem causing all symptoms:

D:  Okay, you can slip your slip your shirts back on there. Let me get you the stomach medicine here. One of the things that sometimes happens just with the, your body, and that *can be a bit of a problems sometimes medicine builds up in the lining of the stomach and it sort of irritates it, chafes it, scrapes it, however you want to say that and that’s called gastritis*. So we, *rather than looking in your with a scope or something*, initially we treat like it has one of those kinda things like gastritis or you try to get an ulcer with black acid manufacturing with the medicine so you have a better chance of not getting an ulcer or cure the gastritis. *Takes*
about two weeks to see how much benefit you get. Within one week, you should have a fair amount of improvement on the feeling that you don’t have an appetite. And within two weeks hopefully it would eliminate most of the nausea and vomiting or when we see you back we would be looking to have you do one of those swallows of barium or have somebody put one of those little scopes down there...

In addition, later on the doctor used names of medicines and gave performance information. This doctor made the recommendations in terms of how they can best fit into the patient’s life circumstances. This point will be discussed at length when another criterion regarding physician attentiveness to patient concerns is illustrated below. As in other more competent interviews, the doctor in this dyad repeated the information to the patient at the end of the appointment.

Figure 1 is a summary of these findings in terms of the three processes described above with text examples to demonstrate competent approaches to providing information on diagnosis and treatment.

ANOVA results

This third stage of analysis is a follow up, verification step in order to check if frequencies of the language categories relevant to information exchange varied according to competent grouping. The ANOVAs presented here relate more to information exchange processes rather than detailedness of explanation since the interpretive analysis provided those results. Analysis of variance was performed on all the language categories to see if the competent groups differed significantly on frequency of specific categories. In this case, the significant F values for language categories relevant to diagnosis and treatment explanation are reported here as a sort of verification that the competence features were evident in
"I will give you antibiotic for ten days and you will take one pill, three times a day. Avoid pressure in that area and dab it in hot water if you want to."

"On that gynelotrimin, you apply the cream down there a couple times, just on the outside, you don't have to go way inside. At least once a day for a week. Check the label, if it says twice a day, you can. Just on the outside. Get the cream, not the suppository. You just want the cream outside."

"However, there is a possibility of diabetes, it is not likely. You drink lots of fluids, but you are a big guy, you drink a lot. You also told me you've been eating a lot lately and gaining weight. With diabetes, you lose weight."

"Fatigue is sort of a difficult complaint because there are so many things that can cause it. You seem in good health generally, you look good. So there's not something I can say, physically you have (X or Y). Ahm, but there is sort of other things that it could be. Blood tests will help us check it out."

"One of the things some people do when they get to a point where they can't get nutrition is they get those drinks that have a lot of calories in them."

"I'd like to see it (weight) level out there, you know within five or so of where you are. "I suspect we're probably gonna see improvement in your cholesterol and triglycerides as well."

Figure 1. Relationship of text to processes and first competence feature.
the more competent dyads and not in the less competent dyads\textsuperscript{10}. Of the language categories listed in Table 2 regarding informativeness of the interview, significant differences between the competence groups occurred on the following categories.

Topic changes were significantly different, however, this will be used as verification of the third competence feature in a subsequent section. In addition to topic changes as an aligning move though, a significant ANOVA occurred with issue extensions \( F (2, 29) = 3.0727, p = .06 \). The less competent dyads had significantly more issue extensions than either the moderate or more competent dyads (high mean = 85.25, mod mean = 88.25, low mean = 158.40). This may seem an unusual result at first glance. However, it is understood when framed within the position that doctors in the less competent groups asked so many closed questions that patients provided only that solicited information. Thus, it is clear why the less competent dyads had so many issue extensions. In conjunction with this result, it is not surprising then that solicited answers occurred more frequently in the less competent dyads than in either moderate or high competent dyads \( F (2, 29) = 2.3830, p = .11 \). An inconsistent finding was the frequency of elaborated answers. A significant \( F \) value on elaborations showed that the less competent interactions had more elaborated answers than the other two groups \( F (2, 29 = 3.0168, p = .06 \). It is not yet clear why this result occurred. One possible interpretation is that perhaps the patients in the low competence group were trying to provide additional information as an indirect means of getting the doctor to provide more information on treatment issues.
Another possible interpretation is that these elaborated answers are less issue responsive but given the significant ANOVA on issue extensions, this is unlikely. Follow up research could check the content of those elaborations.

Other frequency data on informativeness reported above show further significant results. More competent dyads had fewer closed questions in the diagnostic and treatment portions of the interview. A significant ANOVA was observed on closed questions and competence group [$F (2, 29) = 4.1575, p = .02$]. A follow up multiple comparison test (LSD) showed that the more competent group had significantly fewer closed questions than both the low and moderate competent groups (high mean = 9.05, low mean = 16.20). This suggests that a more competent dyad would use fewer closed questions overall.

Given the position in this section that physicians in the less competent interactions were in the position of primary information seeker and patients as information givers, it is not surprising that when these patients desired information from doctors, they asked for it indirectly through embedded questions [$F (2, 29) = 2.579, p = .09$]. Despite the nonsignificant $F$ value, a follow up multiple comparison test showed that the less competent dyads had significantly more embedded questions (low mean = 1.85, high mean = .55). Again, this supports the position that a less competent interaction is one where patients take the role of information seeker not only less frequently, but when they do it is done by very indirect means. This was seen in the reported higher means of elaborated answers by patients in the low competence group. As with any
indirect request, the possibility of getting the desired answer is greatly reduced, therefore a more competent pattern is for patients to take more direct means by which to seek relevant information from their physicians.

One final ANOVA result provides additional insight on the role of conditionally relevant questions. Although these types of questions would suggest a more competent way of checking fidelity of message, the ANOVA results suggest that they are less competent types of questions \( F (2, 29) = 2.32, p = .11 \), although a multiple comparison test was not significant (low mean = 5.50, high mean = 2.95). It may be that conditionally relevant questions show a form of misalignment in that a less competent interaction has participants who contribute irrelevant, goal-less contributions, therefore requiring clarifying sorts of moves such as conditionally relevant queries. This interpretation is indirectly supported by the fact that the frequency of formulations significantly differentiated the competence groups. Less competent dyads had significantly more formulations \( F (2, 29) = 2.45, p = .10 \). But, the implication for more competent fidelity moves is unclear at this point.

These results provide some follow up verification that the competence groupings made from the interpretive analysis are relatively stable. The implications of this competent feature will be pursued in the concluding chapter.

**Topic Alignment, Positivity, and Attentiveness**

Frequency data

As reported in the previous sections, frequency data revealed the general finding that doctors had significantly more topic changes than
patients, and more specifically, the competent dyads had fewer topic changes. Some of the information from Table 2 were used to pursue topic alignment in this section. However, those tabled results will not be repeated here. Refer to Table 2 for relevant results. The results of the overall topic alignment in the competent dyads is part of the focus of this section.

If topical alignment is viewed as one way doctors and patients define their relationship, what other ways do they create relational states? The answer to this question also is dealt with in this section. When reporting frequencies of individual categories, it was noted that the relationally oriented categories occurred infrequently when compared to the proportion of information exchange categories. Yet, the content of the relational utterances was not evident in that analysis, thus providing impetus to further investigate content differences between the groups. See Table 3 for a summary of selected relational categories and their frequencies by content. These results provide a guide for direction in the interpretive analysis.

Overall, the more competent group had more positive relational categories, and in more contents (except see small talk in non medical content for the competent group). The doctors and patients in the less competent group had almost all of the relational categories occurring in non medical content indicating a pattern of doing relational work only while discussing non medical topics. This result might suggest that relational work, within the less competent dyads, is viewed as being separate from information exchange. Instead, the more competent dyads
<table>
<thead>
<tr>
<th>Language Categories</th>
<th>Across Contents (total)</th>
<th>Competence Groups</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>46</td>
<td>19</td>
<td>37</td>
</tr>
<tr>
<td>Small Talk*</td>
<td>159</td>
<td>23</td>
<td>29</td>
</tr>
<tr>
<td>Humor*</td>
<td>48</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>Relational</td>
<td>48</td>
<td>62</td>
<td>76</td>
</tr>
<tr>
<td>Legitimizing Affect*</td>
<td>22</td>
<td>14</td>
<td>4</td>
</tr>
</tbody>
</table>

Non Medical

<table>
<thead>
<tr>
<th>Language Categories</th>
<th>Non Medical</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement</td>
<td>9</td>
<td>37</td>
</tr>
<tr>
<td>Small Talk</td>
<td>154</td>
<td>29</td>
</tr>
<tr>
<td>Humor</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>Relational</td>
<td>34</td>
<td>0</td>
</tr>
<tr>
<td>Legitimizing Affect</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Procedural

<table>
<thead>
<tr>
<th>Language Categories</th>
<th>Procedural</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Small Talk</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Humor</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Relational</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Legitimizing Affect</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

Behavioral

<table>
<thead>
<tr>
<th>Language Categories</th>
<th>Behavioral</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Small Talk</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Humor</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Relational</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Legitimizing Affect</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 3 continued

Frequency Distribution of Relational Categories by Competent Groups.

<table>
<thead>
<tr>
<th>Language Category</th>
<th>High</th>
<th>Moderate</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reinforcement</td>
<td>10</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Small Talk</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Humor</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Relational</td>
<td>4</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Legitimizing Affect</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

*Indicates these frequencies were significantly different across all contents
seemed to integrate the relational positivity within the information being
given and received.

Some unusual results occurred with moderate and low group
having more relational comments overall. Yet, the low group had
substantially less legitimizing affect than the other two--perhaps the low
competent dyads prefer using relational statements to directly legitimize
patients' feelings. The high competent group had more small talk and
reinforcement overall, and these types of utterances were spread across all
contents of the interview. The suggestion here is that the more competent
dyads introduced humor, small talk, and reinforcement type utterances as
a way to add levity to the interview and otherwise make the interaction as
pleasant an experience as possible.

Interpretive data

Based on the texts, more competent relational alignment was
characterized by a general pattern wherein doctors and patients showed
evidence of three interactional qualities. One, they were responsive to one
another on topic initiation--facilitating equal contributions to the
interview. Two, there was expressed relational positivity between the
doctor and patient throughout the interview. Three, doctors were
generally attentive to patient issues whether overtly or indirectly
expressed. Taken together, these three qualities point to how doctors and
patients align their utterances in a way that defines the relationship
through their communication during the interview.

Topic alignment. Interactions with a general movement away from
a rigid physician-centered interviewing style and toward a more patient-
centered style to balance the emphasis was identified as more competent (Ballard-Reisch, 1990; Marshall, 1993; Smith & Hoppe, 1991). In these interactions, doctors were less controlling of every topic and question. Patients contributed new topics equally as often as doctors and they each made an effort to be attentive to one another's contributions. Doctors who followed up on patient current problems or behavioral elaborations by framing the next set of questions or assertions within that information also contributed to a more balanced interview. Rigid interviews were defined as those where the doctor clearly followed a line of questioning irrespective of patient answers, which maintained an asymmetrical pattern of interaction (Roter & Frankel, 1992). Below are examples of more and less competent topical alignment.

The two participants in dyad 6 not only share humor and small talk, they share in the responsibility of topic initiation. This is seen in the number of patient topic initiations and assertions that are immediately recognized and followed up on by the doctor. The doctor at one point asked the patient to express her understanding of previous test results, indicating the doctor's willingness to allow the patient to not only communicate her understanding but also educate the doctor on the tests and their results. In dyad 7, as the patient explained symptoms and even struggled to accurately describe them, the doctor used continuers and follow-up clarification questions to help the patient express himself without her being controlling. The follow-up questions do not lead him in a different direction, instead they helped move toward a clearer understanding of the diagnosis:
P: I've been having tingling in my hands and feet, when I, especially at night, when I got to bed. But it's not like your foot falling asleep, because I get up and I, you know, I'm not losing control of my hands or feet, uh, you know, like just,

D: A little bit of numbness?

P: Maybe a little bit of numbness. Is it,

D: It's not pins and needles sensation?

P: No, no. Um. It's just, kind of tingling, you know. A little, maybe a little numbness but I. It's hard to describe, . . .

D: Just at night.

P: Well, too when I lie down.

Later on, as the patient introduces unsolicited information at one point, the doctor does not then move the focus back to the clinical assessment, but allows the natural continuation of his topic to its end. What emerged was a balanced interaction where patient and doctor were free to contribute at any point without feeling as if it would break the flow of some predetermined list of questions the doctor should follow.

An example of a topically misaligned interaction was observed in dyad 2. In this interview, the patient spent considerable time expanding on a recent visit to the emergency room and clearly was upset with how she was treated. Over and over, the patient recalled this story by inserting comments, seemingly indiscriminately. In most instances, the doctor interrupted her in the middle of the story and changed the topic. For instance:

D: So, mainly it's your chest pain that's been bothering you.

P: [Well, the thing is I just wanted you to know that I'd been to the

D: [Ya, I know, to the emergency room. What's the name of the doctor you have your follow up with?
In other cases, the patient ignored her requests and continued talking and in those instances, the doctor provided continuers and let the patient continue to tell her story. For instance:

D: And you went home [from the emergency room] with a chest pain at that time?
P: Yes,
D: Did they know that you were still having the chest pain?
P: Yes [elongated vowel]
D: Okay, and you were having
P: [I had this doctor, honey, I’m going to tell you what she did
D: Mm hmm
P: She came in and looked at me, they said you weren’t breathin right.
D: Mm hmm
P: She left out and I didn’t see her no more. She went home.

It is not until the very end of this lengthy appointment that the doctor decided to pursue the patient’s concern and she did it in a way that suggested she had “given up” and decided to follow up because the patient would not drop it. It appears that the patient kept recounting the story because the doctor did not directly address it, and when she does, it is not until the very end. When the doctor finally gave some attention to the topic, the patient finally put it aside and let the doctor close down the interview--where previously she would not allow the doctor to close it down. This interview was one of the two longest interviews and yet they managed only to talk about the patient’s story of her emergency room visit. It was only at the end when the doctor said, “Keep taking your medications, and keep that appointment with your other doctor.”

In comparison to these types of misalignments, take for instance dyad 17 as illustrative of a more competently aligned interaction. The
patient is a regular to this doctor and he has lung cancer. This appointment was a follow up from tests he had previously taken. This interview was one of the shortest interviews overall, it was more competent, and had essentially the same tasks to accomplish as they did in dyad 2. There was a pattern evident in dyad 17 in terms of an interaction style where either of them could shift topics or follow-up on an issue at any point in the interview without it appearing disruptive. Part of this was seen in relatively more open than closed questions by this doctor, which allowed the patient to contribute what he thought was appropriate. In addition, there was a high frequency of patient topic changes and questions. The fact that they engaged in small talk, which did not interrupt the flow of the rest of the interview, also provided evidence for topical alignment. In fact, the doctor used some of the small talk topics to frame the entire interview. This is seen in how the doctor used information received from the patient while they engaged in small talk at the beginning to frame subsequent questions:

D: Okay, well I’ll have to get out there and catch some Walleye. You’re lookin a little thin. Didn’t you eat that Catfish?
P1: I won’t eat it.
D: What do you do with it?
P1: She eats it (patient referring to spouse)
D: You do? (1) Are you gettin thin.
P2: No. (laughter)
D: Nor are you.
P1: Well just somethins in (2) in my stomach. I don’t know what it is. It jus, I don’t feel like eatin.
D: No appetite.
P1: Time I try to eat something I get sick to my stomach.
D: You vomiting?
P1: Not yet.
D: What can you eat?
P1: Not too much.
D: Hum, (didn’t we have a type of ...) portion. Jello.
P1: [ Jello
P1: Maybe a fried egg, or broiled egg or something like that.
D: Hmmm. Had you ever had this problem before?
P1: No, just what I, doc, you gave me these here (referring to a medication).
D: Uh huh
P1: It’s happened but
D: For the nausea.
(... and a little later on:)
P2: You was a hundred and fifty-four pounds. Now you’re down to a hundred forty four and a half.
P1: I lost ten pounds.
D: That’s not good for you. Ah, the things you’ve been through you need a lot of calories
P1: Yeah
D: to kinda keep from fainting
P1: [I kin drink milk
D: Uh huh
P1: That seems like that settles my stomach.

Their interaction style provided evidence of an orientation to one another rather than a pursuit of only issues. This is seen in the underlined portions where the doctor and patient kept the topic going, were focused on the patient’s symptoms, and provided additional information in sequentially appropriate places.

Another example of a less competent approach to topic alignment is found in dyad 4. The patient tried in earnest to contribute equally as often, but was inevitably cut off or ignored by the doctor. For instance:

D: Looks like Dr. Jones saw you.
P: Jones.
D: Right and that was for an ear discomfort.
P: Yeah, I would like to check
D: [You were flying somewhere and
P: I’m terrified that this is a resistant bacteria. See I don’t rule it out that this is resistant bacteria.
D: Okay.
P: I worked in labs and classrooms all my life. And ah, I sniff salt water sometimes. And I'm terrified that this is
D: (Now, why the salt water. To keep things open)

This snippet highlights how the doctor does not follow up on the patient’s concerns that her infection was not cured by how he replied with, “Okay,” and no follow-up questions. What happened next was the patient interrupted the doctor and disagreed with his guess about why she used the salt water. After, the doctor continued to go over the list of medications the patient takes until the topic of the ear infection came up again:

D: Right. I’ve got these two. Now I’m trying to see what’s down here. This is Backdrom. This is an antibiotic.
P: Yeah, I haven’t been taking that
D: [and this is the drops for the ear.
P: [It was, it was doing something ah, it hasn’t, I’ve taken a lot of it, it hasn’t knocked it out yet.
D: Okay. Jane, what’s all this? (here he is referring to her chart and previous emergency room visit unrelated to the ear infection)

Clearly, the patient wanted information on why the antibiotic had not worked, but the doctor ignored it and moved onto the next topic. The topic of the ear infection never comes up again in the interview.

Because the doctor follows this same pattern of topical control despite patients’ attempts to shift, dyads 4 and 18 (with same doctor) are considered less competent overall. This pattern is seen as being one where little to no follow up on patient issues is made and because he moves onto the next topic without being entirely certain the previous issue is completely dealt with. By the end of these appointments, both patients are merely agreeing and complying, given that previous attempts to insert
opinions were met with opposition by the doctor either by overtly ignoring the issue or justifying his points. He effectively “shuts down” topics for discussion. Other similar issues relevant to Dyad 18 are described in the third competence feature regarding physician follow-up within specific topics of talk.

**Relational positivity.** In addition to a balanced interview style, the more competent dyads evidenced more relational positivity. For instance, occasional use of humor and small talk was more likely to occur wherein it did not interrupt the flow of the interaction. In this sense, the doctor and patient were able to establish a familiarity and informality to their interaction. Additionally, the doctors and patients shared relational comments and the doctors openly legitimized affect and reinforced the patient. Examples of highs and lows on relational positivity are presented next.

In dyad 7, the interactants engaged in humor, small talk, legitimizing affect, reinforcements, and relational statements throughout the interview. For instance, when the patient disclosed where he works (in an entomology lab), the doctor mentioned that her son would like to visit the lab because “he loves bugs.” The patient replied, “Sure, we have kids visit all the time.” And then at the end of the visit, the doctor asked for directions to get to his lab, showing an obvious sincerity to her initial request. Humor is used to transition topics by the participants and this added to a fluidity to their interaction. Below is an example of how humor in interjected into an exchange within the history segment. The
doctor is pursuing any allergies the patient may have and he responded first by saying he had none, then adds:

P: Well, that's not true too. I, I'm a postdoctoral researcher with entomology and I'm allergic to my flies now. Uh, so, if one lands on me, if that's the case I break out in hives. So that's uh, the fly crap. ((both laugh)) I (couldn't?) put that in your records. ((both laugh))

D: Oh, that's good. ((laughter)) That makes it difficult to go to work.

P: Well, it can, yeah, you know.

D: [Since that's what] flies do all day long.

P: That's right. ((both laugh))

D: O.K. Are you on any medications?

The underlined portions refer to the instances where they exchanged humor and the patient follows up with confirmation of sorts that he agreed with her humorous assessment. Also, it would seem that because he does not continue the humor the second time, he indicated a willingness to return to the questions about history.

In Dyad 14, the patient is a return, so they were familiar with each other. This familiarity was evident in their frequent use of small talk, and the doctor's constant reinforcements of the patient's recent weight loss:

P: Gee, look at my weight and my blood pressure.

D: I was getting ready to, oh my goodness, are you dizzy? (laughter). That's wonderful blood pressure. Hundred and two over, no, no, symptoms with that at all?

P: No, and and you know after you sent me to see the nutritionist

D: Mm hmm

P: she put me on that sugar free diet. And I eat just as much as I ever did. It's just that I (breaks with laughter)

D: eat different things

P: eat different things. And and, boy by the first week, I dropped five pounds.

And then a little later on:

D: Yeah, that's wonderful.
P: I have just bought some new clothes=
D: I better go and see the dietitian, see if she can help me
(laughter).
P: I've already lost ah, she, I've had my pants taken in an inch
and a half and I need to have them taken in again. Hell, I
mean it's expensive, I outta wear suspenders. laughter
D: laughter, okay
P: And my blood pressure really surprised me.
D: Yeah, that's great. That's just great. And I suspect that ah we're
probably gonna see improvement in your cholesterol and
triglyserides as well.

This example shows alignment is how they responded to each other's
comments. Additionally, their small talk was not disruptive, but instead
added to the informal nature of their interaction. A clear pattern by this
dyad to use reinforcement, humor, relational statements, and small talk
emerged.

The doctor in dyad 4 exhibited a relational pattern that was on the
surface positive, but in many instances was disconfirming, if not insincere.
"I don't find anything abnormal on exam. Everything checks out, but you
always check out." Meanwhile, the patient exhibited many attempts to
assert her position that her cancer may be returning. In dyad 3, the patient
described her feelings of concern about her eye doctor who scared her
because he said she may have a blood clot travel to her brain. This is scary
to the patient, as she described it, "[c]ause I went through quite a bit with
that stroke." This stroke occurred almost thirty years ago, yet it still
concerns her. And they continued:

D: And that was a long time ago wasn't it.
P: Yeah, that was
D: [You've done well for yourself.
P: 29 years ago. I had the stroke on, over, May the twelfth. That
was seven days before my 42 birthday. They was looking for
me to die. I come to, my sister, my kids was crying
D: But you’ve done great since. Look at the difference you’ve done since.

What this example illustrates is an effort at relational statements and reinforcement but when used continually throughout the interview to change the topic and move the conversation along, they became less sincere attempts to establish relational positivity.

The last example of relational positivity is seen in dyad 1. The doctor’s use of relational statements and the patient’s positive responses was evidence of this second interactional quality. In fact, the doctor’s constant relational comments eventually lead the patient to respond favorably in return where initially he is unresponsive. For instance, the doctor said “I not only want to be your doctor but I would like to be your friend.” The patient responds by saying “That’s cool, you know some doctors are really stiff . . .”

Windows and reinforcement. The third quality of overall relational attentiveness was revealed in cases where the doctors and patients followed through on opportunities to show empathy or sensitivity to each other, even after indirect requests for information or unsolicited information. This sequence included times where patients identified some affective state or concern and the doctor immediately followed up on that issue. Frankel (1995) calls these “windows of opportunity” to follow up on those topics. This was evident in doctors’ use of legitimizing affect and reinforcement. In general, the doctors in the high group seemed to use every opportunity possible to congratulate and confirm the patient on his/her progress or choices. This also includes a general pattern by the doctor to interject reinforcements for the patient at
various points in the interview. The examples provided below illustrate both competent and less competent efforts at this quality.

The less competent interactions generally passed over windows of opportunity and opted for other less aligned utterances. These examples come from a doctor (second year resident) who had both of her interactions qualify as less competent. In both interviews, the doctor seems to have missed at least two windows of opportunity, which she could have pursued for further information. For example, after the patient's attempt to explain what she means by "drawing" when she had a recent seizure, the doctor shifted the topic and asked:

D: Your daughter was there when that happened?
P: [Yeah
D: And sometimes I have (2.5 pause) I don't come out of them right or something's ah (2.8 pause) my whole demeanor personality changes
D: Mm_hmm
P: and I turn into somebody else all together different. Just turn into somebody all together different, name change, everything

A few exchanges later,
D: You had a EEG and a CAT scan then I think in 19, in 1992.
P: [Yeah, so I, ah
D: Oh, you have allergies to Dentine and Phenobarb.

The first underlined portion indicates the window of opportunity for the doctor to pursue the "personality change... name change and all." There seems to be something going on here that is not followed up on by the doctor. Within a few turns, the doctor returned to her line of questions about medications. In addition, these two interactions (2 and 8) lacked relational positivity as seen in no humor or small talk attempted by either
the doctor or patient. In terms of relational development, the doctor does not attempt to legitimize affect of the patients in both interviews. This is disturbing given that in dyad 8, the patient clearly identified his frustration with a clinician at another hospital who referred to him as "an addict." The doctor merely justified the clinic's likely reasons for doing so, rather than attending to the patient's affect. In particular, one response to the patient was, "Probably you misunderstood them because all what they're trying to do is, what us doctors do, our main concern is that you don't become addicted to them because," to which the patient interrupted and disagreed. Yet, the doctor continued to justify reasons why that was the case. While there is nothing inherently wrong with justifications on their own, when placed after a patient's expressed concern or worry over an issue, a justification does not seem as aligning as legitimizing affect or a relational statement would have been.

In dyad 1, the doctor continually reinforced the patient, especially during painful portions of the treatment. In yet another portion, the doctor congratulated the patient on his use of condoms—clearly recognizing a younger person's need to be reinforced positively especially in face of a life-threatening disease such as AIDS that can be prevented through consistent use of condoms. These constant attempts at positive relational definition worked because as the interview progressed the patient became more forthcoming in his responses and elaborations.

Another more competent dyad in terms of attention to patient issues is dyad 9. As the doctor begins inquiring about the patient's blood pressure (which was measured at the outset of the appointment), the
patient admits, "it might be a little high, I walked this morning." In the next turn, she follows up and explains her daily walking routine. The doctor reinforces her and immediately picks up on the fact that indirectly she wants to increase the amount she walks each day. This walking issue is seen as a window of opportunity for the doctor to reinforce the patient’s exercise and dietary choices. Although in the following example the doctor missed the slightly embedded question, within a couple turns he returned to the topic (a pop extension) and elaborated on it. Here they discuss her relatively heightened blood pressure, which was measured at the beginning of the interview:

P: I had walked this morning before they took that, so
D: O.K. Maybe we'll have to re-, maybe we'll recheck that then before, before you leave. And I'll, don't let, don't let the nurse uh, let you get away until I take a look at that.
P: O.K.
D: Because maybe we'll bump that up but, uh, that's back down, uh
P: I have been walking, well, I sta-
D: [I'll check.] I'll check it here myself in a minute. I'm sorry.
P: [O.K., on a steady basis only for the last two weeks I've been walking two and a half miles morning.
D: Good.
P: Uh, I've always walked.
D: Wow.
P: [But, this is something, I have the time to do it now and I
D: Oh, great.
P: so I've been doing it. So, I'd like to up it three ten or to three. See, the thing is I live on a circle.
D: Uh, you uh. Oh, and you're going to want to be able to walk all the way around the circle?

And then within a few turns,
D: Boy, tha-, most patients I've never had ask this before. Usually they just do it. That's great. That's great. Uh, yeah, go ahead.
And from this point, the doctor explained the kinds of symptoms she should be aware of if her heart rate begins to rise. From this point on the doctor framed the next set of questions around this topic and couched his decision to keep her blood pressure medicine the same within the constraints of her walking more each day.

Additionally, note how the reinforcements are interspersed within the doctor's assertion. The topic of walking became a subsequent topic of small talk regarding good places to walk, an in fact, the doctor disclosed his interest in hiking. At one point he said, "Wow, you are an inspiration for me. Maybe, I'll have to start doing laps with you in the morning."

Overall, the doctor's use of constant reinforcement, their reciprocal humor, and attempts at small talk on the walking issue permeated the entire interview. See Figure 2 for summary of these findings regarding how the more competent doctors and patients demonstrated relational positivity toward one another, topical alignment, and reciprocal humor/small talk.

ANOVA results

As a reminder, the next step in verifying these competence groupings and the aligning qualities of more and less competent dyads was to conduct follow up ANOVAs. The results should add verification to the competence grouping if there was a significant effect on the frequency of specific language categories. In this case, language categories relevant to relational attention and positivity are examined.

Frequency data on informativeness showed that more competent dyads had fewer topic changes in the treatment and diagnostic portions of
P: Well, just something is in my stomach. I don't know what it is. I don't feel like eatin.
D: No appetite.
P: Time I try to eat something, I get sick to my stomach.
D: You vomiting?

Patient identifies several symptoms he experiences and the doctor follows up with questions and formulations.

Patient jokes about his allergy to flies and their droppings. Doctor responds how it makes it difficult to go to work since that's what flies do all day.

Doctor jokes with the patient about weight loss. Doctor suggests "I better go and see the dietitian, see if she can help me." They both laugh.

Patient says he uses condoms every time. Doctor replies, "That's excellent, okay. I really congratulate you because we need to avoid sexually transmitted diseases."

D: You're fifty seven?
P: I'll be fifty eight uh, the 21st.
D: You're walking three miles and you came in to ask me if you can can walk more? That's just great for you.

Figure 2. Relationship of text to processes and second competence feature.
the interview. A significant ANOVA was observed on number of topic changes overall by competence group \(F (2, 29) = 2.9582, p = .06\). A follow up multiple comparison test showed that as expected, the more competent group had significantly lower means on topic changes than the less competent group (high mean = 16.55, low mean = 22.8). This result illustrates the fact that a less competently aligned doctor patient interaction shifts topics far more often. This pattern suggests a more physician-centered interview schedule versus one that is topically-balanced by both physician and patient.

If disagreeing and correcting one’s interactional partner is indirectly related to a less competent pattern of relational positivity and validation, then the less competent groups would be expected to have more. In fact, the analysis revealed that the less competent dyads had significantly more corrections \(F (2, 29) = 4.1051, p = .02\). This was not unexpected given that frequencies of corrections showed that patients in the less competent dyads had more corrections connected with interruptions than the other groups. This was seen in the interpretation of one case wherein a patient interrupted the doctor who was inattentive to her issues and who kept trying to introduce topics without much success. Interrupting to correct one’s partner, by itself, is not less competent, but within the less competent dyads it was a strategy that was not effective for patients.

In terms of how competent dyads showed relational positivity and validation, the ANOVA results show strong evidence of this competence quality. The more competent dyads had significantly more legitimizing affect \(F (2, 29) = 2.7646, p = .0796\), reinforcement \(F (2, 29) = 2.0225, p = .15\), small talk \(F\)
(2, 29) = 5.461, $p = .008$, and humor \([F (2, 29) = 3.4405, p = .04]\). This shows strong support for the position advanced here that more competent doctor-patients dyads show more signs of relational positivity through legitimizing affect and reinforcement. This resulted in an atmosphere of informality with higher frequency of humor and small during the appointment. The implications for this pattern are discussed in the final Chapter.

**Patient Involvement and Physician Follow-up**

**Frequency data**

This quality is related to how patients in competent dyads ask questions, how often doctors open the floor for discussion of any topic, and whether a pattern emerges whereby a patient elaborates on a topic, the doctor follows up on it.

The reader may note the similarities between this third feature and the second regarding topical alignment. This point further demonstrates that a pattern within competent dyads emerged such that patients and doctors were equally attentive and issue responsive to one another. The pattern of physician follow up is not one that can be verified from frequency results per se, so the frequencies of patient questions and issue responsiveness are reported in Table 4. For additional exploration as to where these exchanges occurred, frequencies are reported by content of talk. However, not all contents provided helpful or insightful findings, so only those relevant to this section are reported.

What is suggested regarding the differences between the competence groups based on number of patient questions is that the fewer embedded questions, the more competent. Of particular note regarding embedded questions is that all three groups had relatively similar
Table 4

Frequency of Patient Questions by Competent Group and Content.

<table>
<thead>
<tr>
<th>Content</th>
<th>High</th>
<th>Moderate</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>History</td>
<td>4 (0)</td>
<td>10 (4)</td>
<td>9 (7)</td>
</tr>
<tr>
<td>Current Problem</td>
<td>4 (2)</td>
<td>12 (8)</td>
<td>10 (6)</td>
</tr>
<tr>
<td>Treatment</td>
<td>6 (0)</td>
<td>20 (4)</td>
<td>18 (7)</td>
</tr>
<tr>
<td>Procedure</td>
<td>18 (1)</td>
<td>18 (3)</td>
<td>8 (0)</td>
</tr>
<tr>
<td>Prognosis</td>
<td>2 (0)</td>
<td>0</td>
<td>2 (2)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>5 (4)</td>
<td>10 (0)</td>
<td>10 (6)</td>
</tr>
<tr>
<td>Non Medical</td>
<td>13 (0)</td>
<td>13 (5)</td>
<td>8 (5)</td>
</tr>
<tr>
<td>Behavioral</td>
<td>3 (1)</td>
<td>3 (3)</td>
<td>3 (1)</td>
</tr>
</tbody>
</table>

Note. The values in parentheses are the number of embedded questions out of the total indicated to the left.
frequencies of embedded questions on diagnostic related topics. This would seem to suggest that patients as a group are still reluctant to ask questions about diagnostic related issues, perhaps because they perceive it as the "physician's area of expertise" and not open to challenge or follow-up. However, across all other contents, the patients in more competent dyads asked fewer embedded questions than patients in the less competent dyads.

The results within the behavioral content are somewhat puzzling though. This content area would appear to be within the "patients' area of expertise" in terms of providing information, yet patients in all three competence groups asked few questions (except prognosis). Perhaps the patients asked fewer questions because it was a topic area with which they had familiarity, more so than the physician. A final curious finding is that patients in the more competent dyads asked fewer questions during talk across four different content areas. It could be, based on the first results about doctors' role in explanations, that because doctors in the high competent dyads provided such elaborate explanations of diagnosis and treatment that patients did not need to ask so many questions.

Within the high competent dyads, patients asked fewer questions overall, including no embedded questions within either history or symptom topics. The less competent dyads asked considerately more questions overall, in particular embedded-type questions. Remember, there was a significant difference between high and low competent dyads on total frequency of embedded questions reported earlier. This appears to suggest that within more competent dyads, when discussing history and
symptom issues, patients are better off being less an information seeker and more an information provider. Indeed, this is where they should be in the role of information provider by giving elaborate information about medical history and symptoms.

When the patient is in the role of information seeker in certain portions of the interview, how do physicians fare on providing issue oriented answers and expansion? Also, where do these utterances occur in terms of content? The following results are not to be interpreted as sequentially based, they are only descriptions of the types of answers doctors provide to patients. The frequency results indicate that the physicians in the more competent dyads attempted to stay on topic, changed the topic less, and provide information in addition to solicited answers. Table 5 provides a summary of these frequencies. Notice from the table there is relative equality of solicited answers and expansions overall across all competence groups. However, what is more interesting is the distribution of those answers within the various contents by doctors in competent and less competent dyads. During procedural topics, physicians in the less competent group provided mostly solicited answers, and only one answer with additional information—the implication being that in response to patient questions the doctors chose to answer only with solicited information. Yet, those in the high and moderate groups provided more elaborate answers in this content. Despite the fact that the numbers being compared here are relatively low, an implication can still be made that the doctors in the low competent group indicated an unwillingness to provide additional information.
Table 5

**Frequency of Doctors' Issue Responsive Answers by Competent Group and Content.**

<table>
<thead>
<tr>
<th>Answer Types(^a)</th>
<th>Competence Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High 305</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Current Problem</td>
<td>3</td>
</tr>
<tr>
<td>Treatment</td>
<td>6</td>
</tr>
<tr>
<td>Procedure</td>
<td>11</td>
</tr>
<tr>
<td>Prognosis</td>
<td>0</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>1</td>
</tr>
<tr>
<td>Non Medical</td>
<td>7</td>
</tr>
<tr>
<td>Behavioral</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td>32</td>
</tr>
</tbody>
</table>

\(^a\)The three digit numbers correspond to issue code and question code:

- 305 - issue responsive solicited answer
- 306 - issue responsive elaborated answer
- 308 - issue responsive expansion
when asked procedural questions in comparison to the high group. Indirectly, this results also shows that patient asked overall more questions in the high group. Curiously, during talk about history, the physicians in the less competent dyads gave considerably more expansions than the other two groups. The question is, why are physicians expanding on issues in this history portion, and this does not include the number of event or topic changes?

All three groups of physicians were relatively the same in providing answers and expansions on treatment related issues. This is considered a positive finding overall, however, as indicated earlier, this particular analysis does not lead to descriptions of what is exactly said. It was found earlier that the physicians in the competent dyads were providing more detailed and elaborate explanations, despite the relative small occurrences of them. Thus, if doctors overall are providing the same numbers of explanations, it would seem to follow that the information in the lows’ answers is less detailed or even irrelevant.

One final observation that occurs given this table is related to the previous result that the high competent dyads had more information-giving relevant to patient prognosis. The frequencies in Table 5 would seem to support that finding since the doctors in the competent group gave more elaborated answers and expansions on the patient’s prognosis. The other two groups have none. So those doctors that did contribute information on patient prognosis ended up in the more competent group, even though not all the doctors and patients in this group discussed prognosis.
Interpretive data

The third and final interactional feature of competent doctor-patient dyads involves the existence of elaborations and expansions, patient questions, doctor follow-up on those questions, and requests by doctors for non-specific content, for example, "Anything else you'd ask me before we move on?" Patients who seek out information and pursue answers from physicians was descriptive of this competent feature and its focus is on the extent to which the patient acts as information seeker. This is exhibited in the frequency of direct questions and is highlighted by the extent to which the physicians respond to questions with elaborations and follow up. Additionally, patients who provide elaborations that gave additional information were identified as contributing to a more competent interaction where the patient and doctor follow up on patient initiated topics. This last quality is similar to the second feature regarding balance of topic alignment.

These particular qualities are exhibited by more competent dyads through three general interactional sequences; (1) evidence of more elaborations with immediate follow up; (2) patient questions and direct answers by the doctor; and (3) non specific requests for additional topics to be discussed. Example of each from the more and less competent dyads are provided below, with a summary figure at the end.

Elaborations and follow up. Among the competent dyads, there was evidence of relatively more elaborations on issues by patients and more doctor continuers and follow-up questions on the basis of that information. This facilitated smoother exchange of information and
generally, but not always, resulted in fewer closed questions by doctors. For example, the patient in dyad 7 spent almost one quarter of his talk time on additional information and expansions. The doctor always responded with either a continuer or follow-up question on that topic. Even when the patient had a difficult time describing one particular symptom, she let him struggle and then when he finished, she formulated those descriptions. The doctor in dyad 7 was also the doctor in dyad 32. In dyad 32, this doctor was consistent in her pattern of allowing the patient to talk, to define the topics, and to elaborate on them at will. She was able to create an atmosphere that was open to questions, expansions, and topic initiation without imposing a structure on the interview. Yet, she still seems to have gotten the necessary information she needs to make a diagnosis and suggest a treatment. In this interview, the patient had over 60 expansions and unsolicited information utterances. In almost every case, the doctor followed up on that information, which generally resulted in few closed questions by her. Again, it was apparent that the patient's issues provided the direction of the interview, not a pre-set interview agenda. With this example, it should be clear how these three features are interrelated patterns of competent interaction rather than distinctly separate.

In dyad 17, the doctor provided the clearest evidence of how his questions to the patient were framed in information from preceding answers. Not only did the patient contribute elaborations and expansions where the doctor continued that talk, but subsequent questions and topics revolved around that additional and expanded information introduced by
the patient. In one instance, the patient explains why he’s taking a particular medicine because of “that trip to the emergency room.” The doctor immediately replies and says, “What was that all about?” and a line of questions proceeded from there. This would also constitute a window of opportunity on which the doctor followed up.

In general, the patient in dyad 4 was willing to disagree often with the doctor, but only in how he characterized her symptoms. She was the one who brought up the ear infection because she thought it was resistant bacteria and yet the doctor never pursued her concerns on it. When it came to diagnoses or treatments, she agreed rather submissively and did not disagree (could have used more follow through or elaborations on her part), but perhaps she did because of the doctor’s justifications and relational control. This is evidenced in the fact that three times the patient brought up issues that concerned her, but in more indirect ways as the interview progressed. In all three cases, the doctor ignored her requests or told her to continue doing what she had been doing in the past. Coupled with his justifications and immediate dismissals of her unsolicited concerns, perhaps this is why she is reluctant to challenge his diagnoses or treatments. However, she could have just as easily elaborated on this issue, despite his refusal to pursue it. But again, a cycle emerged where it was harder and harder for them to get more aligned.

One final example of participants mutually influence each others’ contributions in the area of no follow-up is seen in dyad 18. In addition to the cancer issue brought up by the patient four times throughout the interview, there were two other opportunities for the doctor to follow-up,
but he did not pursue them. At one point, the patient describes a previous medication she was taking, “Dr. Benke told me to take two in the night and two in the morning, which I thought was pretty (2 sec. pause) much.” The doctor responded by changing the topic, without any follow up on why she thought it was too much. Instead, he said, “Let me try and rehash all this, Connie.” They continued to go over previous visits and medications and eventually revisit the issue of the medication to which she was referring earlier. The patient finally sighs deeply and says, “I’m supposed to be taking two Koraguard in the morning and two at night. I don’t, now what I’m saying is, I don’t know if it’s the blood pressure stuff that is bothering me. Do you know what I mean? Well, even yet I can’t really walk, you know.” At this point, the doctor interrupts her and begins to go over the medications again and in essence, ignores the attempt she made to explain what she believes is happening with one particular medicine. Later, the topic re-emerged when the doctor asked if she needed any refill. She responds, “I’m taking that Koraguard. See, that’s what I’m saying,” and then he interrupts her and says, “Right, you need a prescription. Okay, let’s go down the list of the rest of these again.” and he proceeds to do so. The concern she seemed to keep expressing is never followed up again, either by her or the doctor. So, in this case, neither the doctor nor the patient pursued that information, which may have been important to his diagnosis and treatment.

In dyad 29, there were a lot of patient expansions and elaborations. The doctor does follow up and respond to these issues. These responses ranged from issuing directives, making assertions, giving a continuer or
acknowledgment token, or making relational statements. In one instance, during the exam, the patient asked the doctor to look at a patch of skin:

P: While you’re up there, look at this here. It’s been there over a year.
D: Yeah, you’ve got some sun damaged skin up there. There’s
P: [It’s been there over a year. I put olive oil on it, and I try to massage it to get the blood moving.
D: Uh huh, how much it bother you?
P: It don’t really bother me. I used to (scale) it all the time,. I used olive oil, but I quit (scale).
D: Hm mm. It doesn’t look real bad. I didn’t see anything that looked like it’s skin cancer or anything. But, it’s something that I’ll keep my eye on for you.
P: Okay.

Through the use of expansions later on in the interview after the exam, the doctor found out there was a problem there before and followed up on the patient’s concerns. This dyad worked hard on aligning their utterances, at times it seemed a contentious interaction, but they tried to work with each other.

An example of a less competent interaction where follow-up may have made a difference in emphasis of treatment or patient satisfaction is found in dyad 8. In this interaction, the doctor appeared to have an agenda that she refused to give up, despite the many attempts of the patient to expand and elaborate on other topics. The patient initially wanted his back pain relieved, and in the end the doctor never followed through on it for him because, as she put it, “You are getting the back pain because you aren’t taking your seizure medication. So keeping taking it, when a doctor tells you to take your medicines you should do so unless told otherwise.” His back pain is never followed up from that point on.
Lastly, in dyad 25, it was clear that as the interaction progressed, the doctor became more and more adaptive and responsive to this patient's level of expertise and knowledge of his symptoms and concerns. There were a large number of patient expansions and elaborations which the doctor progressively pursued as, perhaps, he realized that the patient had a handle on his symptoms and could describe them accurately. The doctor also allowed the patient to thoroughly describe his concerns without interrupting and used over 30 continuers throughout the interview.

Patient questions and follow up. The second involvement and follow up feature deals with frequency of patients' questions (including embedded) and doctors' answers. Here, the competent dyads had answers provided that were generally elaborated and expanded upon or in the form of an explanation. Doctors in the less competent dyads respond to patient questions with event extensions or with little to no follow up from the patients when their questions are not pursued. The next group of examples deals with the occurrence of patients' questions and doctors' direct answers with additional follow up.

Dyad 21 provided a small, yet poignant illustration of how even when the doctor does not follow up, a patient who does not restate or reframe the question does just as much to maintain the less competent pattern as the doctor does. The patient has told the doctor that as a child he was diagnosed with a heart murmur. He stated that he made the appointment to see the doctor, in part, "to have something like an EKG or something like that to check for my heart murmur. Because it's something that I have not had, you know evaluated in many years." The
doctors responded by saying, "Who told you you had a murmur?" At very end of the patient’s elaborated answer, he added, “So, I thought maybe I should check and see things have improved. I understand that sometimes the murmurs can go away.” The doctor replied, “Uh hmm. Did anyone tell you that you need antibiotics? If you’re to see a dentist or something.” Asking that question, which was a event extension because he did not address the substantive point of the patient’s utterance, points to an instance where doctor avoided or missed two embedded questions that patient posed about the heart murmur and EKG. To the patient’s responsibility for following up, he dropped the issue as well.

Dyad 6 provides excellent evidence of how a doctor responds to both direct and embedded questions. In one case, the patient provided a classic embedded question, which was immediately followed up by the doctor with a brief explanation of the sensations and symptoms. Below is the exchange with embedded question and the follow up are underlined:

P: I really don’t know what a yeast infection feels like, so.  
((6 second pause))
P: I never thought of something like that.
D: [Well, sometime it's itching. Sometimes it's burning down in that, sometimes there's a vaginal, you don't have any vaginal discharge or anything like that?  
P: (shakes her head “No”).

Then the doctor moved into the exam and said he would check on it during the pelvic exam. In a later portion of the interview, the patient asked about a previous treatment she did not like, the doctor agreed and suggested another way to treat the infection that would work better with her lifestyle.
An example that demonstrates how some patient questions are not followed-up by the physician comes from dyad 4. During the physical exam, the doctor asked the patient if she had any more questions for him. She responded,

P: Listen, why are my eyes so puffy? My eyes are puffier than usual.
D: O.K., let me look at them here.
P: I have wondered if sinus, for three days now I’ve been taking Deconsol. I hadn’t taken it in quite awhile.
D: Okay.
P: But I took it because it tends to change shape up here.
D: I don’t see anything abnormal like a conjunctivitis. They look okay.
P: Is there any chance of sinus,
D: [Sure,

And then a few turns later... 
D: That could very well be causing that (referring to something he suggested). Just stay on that Deconsol. That won’t hurt you and that’s a pretty good medicine. Take a real deep breathe.

Even though the issue she brings up is followed up on, her hypothesis for why her eyes are puffy is not immediately followed up on or acknowledged. In fact, the very medicine she believed was causing the problem is what he suggested she should stay on because "it won’t hurt you" yet is not an issue relevant response to her concern.

Nonspecific requests. The third feature of physician follow up is related to how often the doctor introduced non-content specific open questions early in the history and symptom segment. This feature allowed for patients to identify other concerns without having to wait to the end of the interview. Frequent use of non-specific content requests by doctors seems to set a climate where the patient felt comfortable with providing additional information on a topic at any point.
Regarding request for nonspecific content in dyad 1, the doctor used nonspecific requests in all major segments of the interview. He did so immediately after the patient gave some history and symptoms, and then at the very end. The first one was "Any other problems you would like to tell me?" The next one came quickly after the patient gave more history, "Any other things you would like to ask me?" The final one came at the end of the interview, after the toe treatment, he said, "Any other questions?" This was facilitating in that the doctor did not ask if there were other problems, thereby opening up the interview to other issues. The non-specific questions seemed to move from problems to questions.

Consult Figure 3 for a summary of these findings in terms of how this competence feature is a combination of the previous qualities with more attention given to content.

ANOVA results

None are relevant given that frequencies revealed significant differences and the follow-up feature was more interpretive in nature.

Summary

Three interactional qualities of the high competent groups were identified: (a) those in the high group had more elaborate and detailed explanations of treatment and diagnosis, (b) they showed more balanced control through topic initiation and relational positivity, and (c) they exhibited a pattern of patient involvement and physician follow up on patient initiated topics. Those doctor-patient dyads in the low competent group failed to meet these criteria.
<table>
<thead>
<tr>
<th>Text</th>
<th>Processes</th>
<th>Competence Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>D: How long does it usually last?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: Oh for a minute or so. If I can lie down and stretch out my back, it usually goes away.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: Okay, so lying down flat on your back alleviates it</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P: Yeah...</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Patient is describing a medication he is taking and his wife says, “That’s what the emergency room gave you.” The doctor immediately replies, “You just...what happened there?” The patient explains he couldn’t eat anything, and his stomach was “all tore up.” Doctor then explains how the patient can continue to get nutrition he needs with a high calorie drink.

P: I really don’t know what a yeast infection feels like, so. I never thought of anything like that.
D: Well, sometimes it is an itching. Sometimes it is a burning down below, and sometimes there’s a vaginal discharge. You don’t have any do you?

Patient explains she has time for walking in her life now and asked an embedded question to up the amount she can walk daily. The doctor says, “Uh, you. Oh, and you’re going to want to be able to walk all the way around the circle?” She continues and he responds later by saying, “Sure.”

D: Are there any other problems you would like to tell me?
D: Any other things you would like to ask me?

D: Any other questions? (These are especially effective when scattered throughout the interview, not just once at the end of the appointment)

Doctor use of non specific request of information.

Patients asks questions and doctor answers with follow up.

Patient elaborates and doctor follows up.

Figure 3. Relationship of text to processes and third competence feature.
The implications of these results in terms of the preliminary observations of competent and less competent patterns of interactions within the primary care interview, are discussed in Chapter V. In addition, limitations and directions for future researcher are provided.
CHAPTER V

IMPLICATIONS AND CONCLUSIONS

Introduction

The purpose of this dissertation study was to present a preliminary assessment of a coding scheme which would begin to identify competent and less competent patterns of interaction in the primary medical interview, based on the Cegala and Waldron (1992) model of competence. Results of the coding scheme showed that doctors and patients contributed almost an equal amount of language units defined by the coding scheme. As expected, doctors had most of their utterances categorized as questions and patients had over a quarter of their utterances categorized as answering questions. Many of the individual category frequencies were consistent with previous research using coding schemes of a similar nature (Roter et al., 1988). Determining dyadic competence at aligning utterances is where most of the results show a significant departure from previous research. A qualitative grouping of the dyads on the basis of both category frequency and overall combinations of those categories revealed that the 32 dyads could be grouped into high, moderate, and low competent groups. Additional validity was presented which provided external support for the interpretive (text-based) grouping of dyads into high, moderate, and low competence. For instance, ANOVA results
showed that competent dyads had different perceptions about the doctors' competence at information exchange, and relational attention.

Three interactional qualities of the competent group of doctors and patients were identified. One, those in the competent group had more elaborate and detailed explanations of treatment and diagnosis. Two, they showed more balanced alignment through topic initiation and relational positivity. And three, they exhibited a pattern of patient involvement and physician follow up on patient initiated topics. Those in the less competent group failed to demonstrate these interactional qualities. In addition, these dyads exhibited an overall pattern of interaction whereby on the one hand, the physicians demonstrated non-aligning utterances. For instance, the physicians in this group overall had higher frequencies of topic changes, contributed more turns at talk, engaged in minimal positive relational talk, and infrequently followed up patient initiated topics. On the other hand, the patients contributed to their share of less aligning behavior as well. Patients in these less competent dyads interrupted the doctor to disagree or correct, they agreed more often than they made assertions or provided elaborations, and generally they were less involved in the interaction as a equal participant.

Having reviewed the purpose and results of this study, the task within the remaining sections of this chapter is threefold. First, the results will be discussed in terms of general conclusions about competent and less competent patterns of interaction in the medical context, and in terms of the implications for physician and patient training. Second, the limitations of this study will be presented in order to identify problematic
issues relevant to the general design of the study and, in particular, modifications of the coding scheme. Finally, directions for future research will be offered regarding communication competence in the primary care medical interview and doctor-patient communication in general.

**Communication Competence in the Medical Interview**

In Chapter I it was noted that health communication scholars have identified communication competence as a useful conceptual framework for extending results of research on provider/patient interaction. In particular, Kreps and Query (1990) argued that the central mission of research in health communication should be to provide evidence that effective health care delivery depends largely on the communication competence of the participants. The aim of this study was to explicate communicative competence in the primary care interview by identifying how participants align their utterances in coordinating goals. Given the results presented in Chapter IV, some general statements can be made about what may constitute communication competence in the primary care medical interview.

The following conclusions will be made in light of both the frequency distribution of language categories and the interpretive analysis. As a reminder, dyadic frequencies of content, alignment, and function provided information as to specific categories that appeared more frequently and in combination with others. For instance, it was observed that embedded questions by patients and topic changes by doctors occurred more frequently in some dyads than others. These frequencies were used as the basis for taking an interpretive look at the individual interactions
for specific features that could further differentiate them on alignment issues. This interpretive analysis yielded high and low competence groups based on each dyads' performance on general criteria derived from previous research and the frequency distribution data. After the initial sorting of all dyads, the general criteria were summarized into three that represented aligning patterns of interaction. These criteria are the basis on which patterns of competent and less competent patterns of talk are defined below.

In this sample, the competent dyads were those who had overwhelming evidence of three patterns of alignment in their interaction. Namely, the three competent features of physicia-patient interaction are extensive information giving on treatment and diagnostic issues, balanced topic alignment with relational positivity, and patient involvement accompanied by physician responsiveness to patient initiated topics. Each of these competent patterns is examined below in terms of relevance to the Cegala and Waldron (1992) competence model and implications for physician and patient communication training.

**Explanation of Diagnosis and Treatment**

One of the primary tasks in the medical interview is information-giving (Roter & Frankel, 1992). The extent to which this facet of the medical interaction has received attention in health communication research is not consistent with its stated importance. Patients report wanting more information and physicians have been shown to be ineffective at correctly assessing patients' desire for information (Waitzkin, 1985). Given its significance, this study provides some support
for the contention that comprehensive information-giving in the primary care medical interview is central to assessments of communication competence. The first characteristic of competent interaction identified was information-giving, specifically in terms of explanation of diagnosis, treatment, and prognosis.

What is being suggested with this finding is that the extent to which doctors provided and interpreted diagnostic and treatment information showed alignment in coordinating information exchange goals. The doctors in the competent dyads seemed to be responding appropriately to the general desire patients have for diagnostic and treatment information. The doctors in the less competent group were not successful at aligning their utterances regarding information-giving. The competent doctors and patients coordinated information-giving goals by demonstrating explanation of a variety of diagnostic and treatment issues. The presence of this pattern showed attentiveness of the doctors to the information needs of patients. Providing details about diagnosis and treatment is a strategy that shows responsiveness to patients’ goals of information gathering, or their words “what I need to do to get better.” This general pattern was seen as a competent way to coordinate information-related goals. The result was further supported by the fact that the competent dyads had overall higher perceptions of doctors’ information competence and fewer negative technical thoughts/feelings than the less competent group.

Roter (1989) argued that when physicians are perceived as overall informative, it is because they also are perceived as showing a level of care
and concern by spending the time to explain relevant issues. And in this sample, the competent group agreed that the physician was sufficiently competent at relational development.

What is especially intriguing about the existence of extensive explanation is the overall climate of openness it can create during the interview and perhaps in subsequent meetings. Roter and Frankel (1992) have stated that when doctors provide information within the patients' perspective by framing information within patients' knowledge on the topic it sets the tone for patients to provide more appropriate and/or topically relevant information during the interview. This is consistent with research by Roter and Hall (1988) who reported positive correlations between talk about prognosis and diagnosis issues with patient disclosure of clinical information. Clearly, how doctors frame diagnostic and treatment information has ramifications not only for patient knowledge and likely compliance (Roter, Hall, & Katz, 1988), but also the likelihood that they will be more disclosive with relevant information not already discussed.

Two decades after Svarstad's (1976) finding that physicians failed to give explicit verbal advice on how long or how often to take prescribed medication, most health communication scholars argue that this situation has remains relatively unchanged (Parrott, 1994; Roter & Frankel, 1992). Parrott (1994) has suggested that future research should focus on generating "better insights into effects and effectiveness of different ways of communicating information about medications" (p. 278). This call is appropriate in light of the results of this study. So, the implication for
communication training for doctors is in terms their needing to be more forthcoming in proving explanations of diagnostic and treatment information. In proposing competent patterns of information giving, Roter and Frankel (1992) described an interactional strategy whereby doctors seek information about patients' knowledge on a topic and then frame new information within the patients' frame of reference. For instance, the physician asks a moderately open question about a patient's dietary habits. Given the answer, the doctor would be in a better position to suggest a new dietary regimen on the basis of the information provided by the patient. This approach would also allow for the possibility of jointly negotiated treatment decisions. Learning this information-seeking then giving technique could be accomplished either within medical school curricula changes or in training seminars for practicing physicians. Preferably such a strategy would be ingrained in medical school curricula.

Additionally, a more direct approach could be pursued within the actual clinic setting. For example, a checklist could be used to ensure that salient issues relevant to diagnosis and treatment are covered at some point in the interview. This checklist might include names, side effects, performance information, benefits, and other options, etc. Patients could have this checklist available so that if the doctor did not cover an issue, the patient could ask for clarification or elaboration on those topics. Such a brochure would have some information relevant to the importance of getting accurate information from one's doctor. Then the checklist would appear after it and explain how to use it during the appointment. A checklist of items to be discussed would be available for both the doctor
and patient to refer to during the appointment. The list could be picked up at the front office desk and reviewed during the wait to see the doctor. It could have an additional feature whereby patients detail all current and recently past medications. This list could be given to the doctor during the appointment as an aid in making treatment decisions as well as function as a reminder of patient history regarding medications previously and currently taken.

Likely positive outcomes of such a brochure may relate to the costs associated with returning patients for a condition that could have been alleviated with proper adherence to the prescribed medical treatment. As Parrott (1994) has alluded to, physician training in this area holds promise that better informed patients will more likely adhere to treatment recommendations, especially if the treatment decision was made jointly.

Introducing the use of such a checklist could be particularly beneficial for resident communication training as well. Training sessions could include videotaped examples of effective and less effective explanations. The residents would view these in order to identify all the necessary kinds of information that should be explained and on which others should be elaborated. Then, residents would be introduced to the checklist which the patients would have at their disposal. The rationale of such a checklist would be examined in light of research that suggests how much information patients really want and how determining a patient’s desire for information is important. Having the residents aware of the fact that the patients will be using the checklist will provide an additional
prompt for the residents to provide explanations in case a patient does not bring it up on her/his own.

The value of setting an open climate to discuss and elaborate on diagnostic and treatment issues brings up the next competence pattern relating to topic management and relational sensitivity. This sequence has to do with both participants taking on the role of both seeker and giver equally without getting trapped into playing one role throughout. **Topic Alignment and Relational Sensitivity**

These two patterns deal primarily with coordinating relational goals. Although there are some implications for information exchange goals, aligning utterances for coordinating relational goals is emphasized in this discussion. How patients and doctors deal with topic initiation and continuation is clearly an alignment issue, especially in terms of who controls topic development. Topic alignment in both initiation and continuation were identified in this study as a competent pattern. This was seen in relatively equal distributions of topic changes, shifts, and event extensions for doctors and patients. This pattern reflected an interaction in which both participants could contribute freely to topic continuation and initiation of previous or new topics. In other cases, generally higher frequencies of closed questions, which would indicate that physicians are restricting topics, and solicited answers, which shows patients provided only information sought, provided evidence of less aligned interactions. Given such a pattern, doctor-patient interactions were characterized as less competent because of an overall rigid adherence to doctor-initiated topics. For instance, in the low competence group, the
doctors had more topic changes overall than those in the competent group (low mean = 40, high mean = 26). The suggestion is that given such a pattern, the doctors were the ones who determined what topics were and were not available for discussion. Roter and Frankel (1992) have argued that "physicians who chronically occupy a sequential position that sets the stage for what will count as an appropriate response can be defined as physician controlling" (p. 1099). In other words, doctors who define the topics that are appropriate for discussion controlled the interview and thus contributed to an asymmetrical pattern (Roter & Frankel, 1992; West & Frankel, 1991). Additionally, Beckman and Frankel (1984) said that turn-taking violations (e.g., topic changes, interruptions, tangential remarks) are very costly to overall positive relational assessments. Dyads in the less competent groups had low relational scores for perceptions of doctors' competence at relational communication implying that those goals were not effectively coordinated.

Accompanying topic alignment as a competent pattern is the existence of relational positivity appearing as reinforcements, legitimizing affect, humor, explicit relational statements, and small talk. This flows naturally from topic alignment because if either participant can contribute to the topic, this may create an communicative atmosphere where no topic is unimportant. That is, engaging in small talk and humor is as important as providing reinforcements and explicit relational comments. The suggestion here is that showing solidarity, equality, and relational communication allows each other the opportunity to talk freely, bring up topics, and be sensitive enough to express positive sentiments toward one
another. Being nice, polite, and courteous are ways of communicating for achieving relational goals. These goals may range from simply greeting the other, getting to know the other personally, or to adding levity to the interaction. In the competent doctor-patient interaction, they chose to engage in polite and positive social talk freely, which contributed to achieving relational goals.

The implications of this pattern for communication training are not as obvious as with the previous competent pattern. Showing relational positivity is something that needs to be emphasized to physicians and patients—be polite and treat one another as equal relational partners. This also could be done for patients in brochure or leaflet format. It could explain that physicians are people who have good days and bad days just as every one else. Showing respect for that and being considerate of each person's situation should be remembered. However, the patient needs to be reminded that the interaction is about getting better and that the physician can best facilitate that process.

For doctors, training seminars could use video tapes which show contrasting interviews where one shows relational positivity and topic alignment and the other does not. Feedback from the doctors about their impression of both could help identify personal beliefs or attitudes about courtesy and positivity. The next step would be to provide evidence to the doctors that the more competent one had more positive perceptions of the doctor relationally and professionally. This may help physicians identify more clearly ways of dealing with the "bedside manner" portion of health care delivery. Specific suggestions that could be made to the physicians
would be; use opportunities to reinforce and congratulate patients; they need encouragement just as you do; be positive and considerate of patients' life situations as you would want them to be of yours.

The promise of this kind of training would be in terms of general satisfaction physicians and patients would have with their relational development and thus better patient retention. Perhaps patients would become more committed to staying with a particular family physician given a positive relational experience that gets more personal with each visit.

Patient Questions and Topic Follow-Through

This sequence relates to how doctors and patients align their utterances in coordinating mostly information exchange goals. Patients' goal for information gathering on their condition puts them in a position to help the doctor in his/her role as information giver and when the doctor responds in that way, she/he has fulfilled that role. When doctors respond on the topic and issue, they align utterances on thematic content and function. In addition, patients have necessary and appropriate information to contribute regarding their condition and when doctors follow-up with either a question or an expansion, they also show alignment on topic and content. This could be perceived as an indirect way of showing attentiveness to patient issues, which has positive relational consequences as well. Relational goals are coordinated in that patients need to be heard and confirmed by having their issues immediately dealt with or recognized.
West and Frankel (1991) proposed that patient questions can also offer an indirect assessment of patients' ability/willingness to express their concerns. Further, where these questions occur is of issue. Overall the patients in this sample asked few questions, those in the competent group asked more direct questions during the talk about diagnostic issues. This may be indicative of competent behaviors exhibited by these patients in their willingness to express concerns and/or challenge doctor initiated topics. That these questions occurred more frequently in the diagnostic and treatment portions is significant in and of itself given that previous code systems did not allow for such specification. Adding content to the code scheme clearly provided a necessary dimension for identifying what topics are covered more often and those that are less likely to be covered. The interpretive analysis of embedded questions in particular showed that those doctors in the competent group attended more immediately to patients' questions than those in the less competent group. Not only are patient questions and where they occur an important facet of competent interaction, so too is the extent to which physicians respond to those questions.

Other researchers have found, however, that patient question asking by older patients was negatively related to patient satisfaction immediately following the visit (Greene et al. 1994). One explanation of this finding is that satisfaction is such a general perceptual measure, more specific scales could address relational development goals and competence.

Topic follow through as an aligning move is indicative of coordination of both information exchange and relational development
goals. When doctors and patients shift topics or drop topics, they risk disconfirmation. Doctors who asked follow-up questions and provided expansions in response to patient questions or elaborations rather than shifting the topic or ignoring patient issues were put into the competent group. In terms of relational development, this pattern is an especially noteworthy finding given that Greene et al. (1994) found a positive correlation between patient satisfaction with visit and physician follow-up and supportiveness on patient-raised topics. In addition to being an alignment move to coordinate relational goals for validation and confirmation, topic continuation also facilitates information gathering goals such that additional information on symptoms, lifestyle, and attitudes are likely to be discovered. In this way, as doctors probe into a patient-initiated topic, new questions and issues may come to mind to both patients and physicians that otherwise may not have been addressed. The implication of follow-up for coordinating information exchange goals is especially important in light of the Greene et al. (1994) finding that patient information giving on patient-raised topics was positively correlated with patient satisfaction with visit. As an effective conversational management strategy, topic continuations and initiation are related not only to confirmation but they also function to introduce information and provide continuity for coherence/alignment in the interaction (Cappella, 1994).

This sequence of aligning moves can be identified in doctor and patient communication training as important to both information and relational goals. One way to deal with this third competence feature in
training patients is to educate them on the usefulness of asking questions (Roter, 1979), asking for clarification when something is not clear, asking the doctor to consider cost and side effects when prescribing medications, and to identifying salient lifestyle issues when treatment regimens are assessed. Helping patients to see that keeping the interview focused on one or two key issues will help the doctors better assess the problem and so providing succinct information on those issues alone would be more competent. The promise of this training is in more accurate diagnoses and thus efficacious treatment recommendations.

Limitations

Project Design and Data

Four general limitations regarding the design of the project are discussed below. First, because of the small sample and specific context of family practice, the results of this study should not be considered generalizable to other samples or context. The results can be viewed as a preliminary results on physician-patient competence features in the primary care setting.

Second, in terms of specific limitations, the post-interview questionnaire needed to be a more sensitive measure of competence. More specific scales have been created (Cegala, McGee, & McNeilis, 1995) that use participants descriptions of what “more competent,” and “less competent,” communication means to both doctors and patients. This will make it easier to relate language categories to specific behavioral outcomes. Despite this, what was used was adequate given the preliminary nature of the study itself.
Third, participants' behavior may have been influenced by being videotaped. However, observing the participants during taping revealed that they tended to ignore the camera after a few minutes. In fact, most did not even realize where the camera was at all because after a few of the appointments were over, participants asked if we forgot to turn on the camera or said they forgot about taking the post-interview questionnaire. This provides some evidence that the unobtrusive placement of the camera and microphone reduced the likelihood that participants were unduly affected by being observed. If the doctors or patients were at all influenced, it would mostly likely have been the residents more so than the patients or faculty members. Some residents may have felt pressured to perform well given that one of the outcomes of the study was to use the videotapes for educational purposes with each resident. Some of the residents expressed some resentment for participating and even showed some reluctance when asked to be taped.

And fourth, the competence model evaluates competence on extent of interactional alignment or coordination—how well each person performs in regards to alignment/sequencing measured with the coding scheme. There are other interactional qualities that one can use to evaluate competence besides sequencing/coordination. For example, identifying extent to which participants share codes, extent to which understanding is emphasized, and integrative vs. other strategies are other ways of assessing physician-patient communication competence. This is not a limitation per se, but an important issue relevant to using the Cegala
and Waldron (1992) framework as the only means by which assessments of competence are made.

Coding Scheme

This section deals with general problems and limitations of the coding scheme. Given these problems and concerns, modifications to the coding scheme are discussed.

General Observations

Some general observations about the mechanics of applying the coding system are noted. First, results of the coding scheme should be tempered by the reliability scores. Lower scores were likely due to inadequate training and/or motivation of the coders. The two coders were undergraduates and participated in order to receive independent study credit. Second, the coding scheme was not able to adequately deal with multiple party interviews. The results presented here did not include cases when additional members were present in the appointment. Coding multiple party interviews should be incorporated in coding revisions.

Coding System Assessment and Modifications

Even though this study is preliminary in nature, it does provide some evidence that conclusions about physician-patient interaction based solely on aggregated data from singular categories can be incomplete or misleading. This problem is especially evident if, in addition to singular category results, no consideration is made with respect to occurrence of that category in relation to what came before and after it. Coding schemes that have one level of categorization based on, for example, content with number of topic changes or interruptions, by themselves do not provide
adequate description of the interaction qualities necessary to make
generalizations about competence or coordination. For example, the 32
dyad frequencies examined here had no significant differences in the
proportion of issue versus event extensions, total number of topic
changes, or total embedded questions. Even when looking at differences
within doctors and patients, there were few significant differences for any
specific category and its relative proportion. Competence judgments could
not be made solely on the basis of category frequency. That is to say that
conclusions such as, “more of X is more competent,” or “less of Y is not
competent,” were not directly available.

Readers may question whether this coding system, which was
created to assess alignment, was supported in the results presented. For
example, the number of conditionally relevant questions was not found to
occur more frequently in competent dyads. The indication was never
made in the rationale that the results of the coding system would provide
conclusive results of competent alignment versus less competent
alignment in physician-patient interaction. Specifically, it was never
posited that the frequency results would provide this information. Given
the fact that this was a preliminary assessment of a coding scheme, those
specific hypotheses were intentionally withheld from the rationale. What
was put forth was the presumption that certain patterns of interaction
would lead to judgments of competence. However, the biggest limitation
with the coding scheme was its inability to provide an immediate, tangible
assessment of alignment and thus competent patterns of talk during the
medical interview. In this case, throughout the analysis it was clear that
the frequency results were not telling the story of what was really going on between the interactants in terms of their alignment and coordination. The raw output of the coding scheme did provide some identification of how interactants aligned their utterances in coordinating goals. The output of each coding level was helpful in guiding the additional interpretive analyses into, for example, alignment differences within specific portions of the interview, differences within content, and differences in depth and quality within specific functional categories. This last issue points directly to modifications that are necessary to improve the code system's ability to identify patterns of competent and less competent talk. These will be addressed below.

In sum, the results of the coding scheme provided only limited aid in the competence grouping. The results of competence grouping ultimately were derived from frequency output and qualitative inspection of the data themselves. Therefore, it is possible that given another sample of doctor and patients, the results may not be the same in terms of interactional qualities that differentiate between high and low competent groups. What these conclusions do point to is the limitation of any coding scheme that reduces rich interactional data to a series of numbers, no matter how many levels are used (Schegloff, 1993).

Below are the modifications and revisions that are suggested given the results of the coding scheme, problems encountered during coding, and the limited information certain features provided.

Depth/quality of functional categories. The one problem that became immediately apparent within the coding scheme results was that
the content of the talk was not adequately identified in terms of depth and quality. Some of this was evident in a few of the codes such as hedging and elaborated information, but none of the other codes had this quality attached to them. Because quality and depth of explanation and instruction became one of the competence criteria, it should be something that is coded and identified in the coding scheme itself. This would require two steps. The first step would be to reduce the current list of functional categories to include only those that identify a specific function of the utterance without mention of the quality. For instance, hedging, elaborated answer, expansion, polite directive, justification, and qualified directive would be eliminated. The second step would be to add to each functional category a "quality or depth" valence. Adding the quality/depth measure would help in further explicating the explanation sequence identified as a competence criteria. In addition, it would provide additional information on the physician follow-up and patient question competence feature.

Below is a list of possible categories for categorizing depth/quality:

1) Extremely brief with few details, to the point, minimal depth.
2) Elaborated with examples (e.g., names of drugs) and interpretations provided.
3) Hedged, vaguely stated.
4) Stated with justification by offering a reason or warrant to account for an utterance.
5) Said with positive affect.
6) Said with negative affect.
7) Stated with emphasis added (tonal).
8) Phrased in the negative (Greene et al., 1994 found that most questions are phrased this way).
9) In command form "you must do X."
10) Does not apply or is irrelevant because it is inherent (i.e. restatement, relational, reinforcement, humor, social talk, etc.).
**Topic initiator.** In order to identify how topics are followed up and by whom, another modification to the coding scheme would be to keep a record of who raised each new topic and what the content was. This could be done by keeping a separate log of who initiated a new content area (e.g. doctor and patient) and on what line of the transcript that occurred. Having this additional information will help in further identifying topic alignment and development for each dyad. Topic initiation and continuation could be easily tracked and related to extent of follow-up and elaboration (for example, see Charon et al., 1994).

**Expanding on uptake categories.** Interruptions and the utterance which follows those interruptions posed a special problem for interpreting the issue and event extensions. In most cases during coding, after an interruption, the very next utterance was coded an issue, extension (code 308) to indicate that the utterance before the interruption is being continued and expanded. Because of vague specification as to what counted as continuation after an interruption, the expansion category became a catch all for a variety expansions that were qualitatively and quantitative different.

So in order to further define an issue expansion that occurred as a result of an interruption, an eighth uptake code should be added. This uptake code would be used only in cases of an utterance that was an issue expansion which occurred after an interruption by the other interactant. In this way, there would be a set of three utterances that could be identified as first utterance, then interruption, and next utterance. This would allow for separate identification and interpretation of expansions with and
without interruptions present. The issue expansion without an interruption would only be those which were not occasioned by an interruption. This new category could be called "interrupted issue extension" to indicate it is an issue response that occurred after an interruption, is still on the issue, and continued on the same topic. This would be used only in the case where the person being interrupted continued on the same theme and generally did not change the focus or frame of the utterance given the interruption.

Additional categories and revisions. Three other revisions would be made on the existing coding scheme. First, because content of talk provided such useful information regarding differences in competence, it would be useful to add another content category in order to further differentiate contents of talk. A category called "medications" should be added in order to identify talk about specific prescriptions, previous medications taken, history of previous medication, and current medications. During coding it was noted that sometimes talk occurred about previous drugs taken that would now be taken again or how a patient was currently taking a particular prescription. This became difficult to identify as either history or treatment. So, in order to more accurately reflect those issues, adding a "medication" category can provide further information relevant to specific content of talk during the interview. "Medication" would also include names of medications, performance information, cost issues, side effects, and/or interaction effects with other drugs.
Second, in the functional code "relational," one revision is suggested. During coding, this category became a sort of catch all for when doctors and patients said "hello," "good-bye," or "thank you," in addition to the more explicit statements regarding relational feelings. Restricting this to only those explicit attempts to forge positive feelings, partnership building, and trust-building could further crystallize the central meaning and thrust of this category. Although doing this would reduce the number of times it occurred, the gains made in knowing the specific function it was serving would be more an important outcome.

Given that change in definition, a third addition to the coding scheme would be necessary. Just as the alignment codes have a "first utterance category," the functional categories should also have one that indicates comments are serving to open the interview and close it. Therefore, a final modification would be to add a category for identification of "social talk" that serves to open and close the interview. This would include saying hello, introducing self, and saying good-bye to one another.

**Future Directions for Research on Physician-Patient Interaction**

Within these limitations, however, a few observations seem in order regarding the direction in which research might proceed. Future research regarding where this project will go include using the revised coding scheme on different and larger population samples. Later, the code scheme could be further adapted in content categories to be used for other clinician-patient interactions (nurse, physical therapist, etc.) for identifying competence patterns within those contexts.
Further research efforts should at a minimum revolve around the use of video taped interactions. For example, video tapes of high and low competent dyads can be used to educate doctors and patients. In effect, showing the doctors and patients examples of high and low competent interactions and how they led to less satisfactory outcomes (i.e. low satisfaction ratings for both doctor and patient) can give them tangible evidence of the impact of communication on outcomes. A process such as this could help the doctors and patients learn through watching how other doctors and patients exhibit better techniques of information-giving or relational sensitivity.

In addition, research would prove useful in helping doctors identify those patients who have a desire for more or less diagnostic and treatment information. This points to the issue that doctors and patients likely have differing perceptions of what constitutes relevant information or what the other believes it is. Results from additional data collection (Cegala, McGee, & McNeilis, 1995) showed that 60% of the doctors and patients disagreed on the desire for information and what was actually provided during the interview itself. This finding points to the necessity of being sensitive to differences in patients' need for information and in using that to guide the interaction.

Finally, the area of research that should be attended to by all researchers is in how larger patterns of interaction, such as explanation sequences, work to define relationship perceptions, judgments of competence, and ultimately health outcomes. Clearly, how effective doctors and patients are at being information providers has implications
for whether the treatment is jointly-negotiated and, in turn, how well the patient adheres to the recommendations. Looking at competence dyadically in the medical interview should be the call that all researchers respond to in future research.

**Conclusion**

Kreps and Query (1990) argued that the aim of health communication inquiry should be to increase the effectiveness of health care delivery by generating relevant knowledge for the participants to enhance their communicative effectiveness. The implications of this research for physician/patient interaction revolves around communication training that should be made available for both participants. Additionally, this study points to the need for further thought and research on exactly what the relationship is between language use in context, perceptions of relationships/quality of care, and ultimately real health outcomes. This is the path health communication scholars should be committed to follow in future research on health communication and physician-patient interaction. Realistically, in order to reach doctors and patients and make some changes in their orientation to each other, it is necessary to give them evidence that more competent dyads attend to information exchange and relational goals and that competence in that process is what can lead to improved quality of care and more healthy people.
Appendix A

Code Book

Several content categories are described in this code book. They are grouped into four sets of codes: Content, Coordination Level 1, Coordination Level 2, and Function. Content codes are concerned with the general topic of discussion, such as medical history or diagnosis. Coordination codes, in general, are designed to signify the extent to which one participant's utterance interfaces with the other's utterances in terms of form and content. Function codes, as the term suggests, indicate the purpose an utterance serves, such as seeking information, providing information, clarifying.

Coding decisions should be made in the order of these content codes. So, you should first decide what the content of an utterance is, then determine Coordination Level 1, followed by Coordination Level 2, and finally what function the utterance serves. As you will see, the specific codes within each group are numbered consecutively. You will record the number of the code you select within each group. Thus, each utterance you code will be described by a six digit number, the first digit refers to the Content Code, the second and third digits refer to Coordination Level 1 and Level 2 respectively, and the last two digits refer to the Function Code.

In most instances, one turn at talk gets one set of codes. In other cases, there are multiple units within one turn. In that case, the units will be identified with a slash at the end of the unit. Each unit should be coded separately.
Content Codes

1. **History:** Utterances that describe/report past instances of medical problems/conditions. These include hospital stays, past diseases, injuries, or problems; medications taken in the past, but not currently taken; previous diagnoses, treatments or procedures.

2. **Current Problem:** Descriptions, explanations, etc. which address current medical problems along the lines of providing or reporting information or context about symptoms of the concern.

3. **Treatment:** Utterances addressing some aspect of recommended medical procedure to treat the current condition or on-going treatments. These may include recommendations about diet, exercise, medication, etc.

4. **Procedure:** Statements about test procedures, directives given during an examination (e.g., "Open your mouth.", "Jump up on the table."), or steps that will be followed during/after the visit (e.g., "First I'm going to ask you some questions, then I'll do an exam."; "After we are finished here, you'll need to make another appointment for next week."). It also includes statements about the results of current or previous treatments, such as weight loss due to dietary changes.

5. **Prognosis:** Descriptions, explanations, etc. that address the long-term aspects or concerns about the current medical condition.

6. **Diagnosis:** Utterances about the causes of the current medical problem, naming of the problem, reasons for the problems, etc.

7. **Non-medical:** Talk about something that does not involve technical aspects of the current medical condition, such as 1-6, above.

8. **Behavioral:** Talk that is related to medical concerns in general, but focuses on lifestyle issues, such as sexual contacts, tobacco, alcohol or drug use, smoking, stress, exercise, etc.

9. **Non-specific:** Utterances that invite talk but do not specify the topic of talk, such as "Is there anything else you want to discuss?"
Alignment: Level 1 Codes
Code Both

1/0 Acknowledgment Token: Utterances that begin with explicit recognition of the partner's previous turn. For example, "Oh, I didn't know that", "I see, well tell me...", "Okay, when did you..." Note that acknowledgment tokens generally do not appear alone, most of the time they are followed with other talk. However, occasionally there will be a free standing acknowledgment token. This occurs when the acknowledgment is the only response, or when the talk following the acknowledgment is on a substantively different topic. Since the units to be coded will already be marked on the transcript, it should not be difficult to determine when there are instances of free standing acknowledgment tokens. Utterances either do or do not begin with an acknowledgment token. If one is present, 1 is coded, if one is not present a 0 is coded. Free standing acknowledgment tokens have the form: X10300, where "X" is a content code and "3" signifies issue extension (see below).

1/0 Interruption: Any simultaneous talk other than a continuer (see below). Like acknowledgment tokens, utterances either do or do not occur with an interruption. If an utterance begins as an interruption, it coded with 1, if not, it is coded with 0.

Alignment: Level 2 Codes
Choose 1-7

1. Continuer: Brief, usually one word, utterances that serve a back channel function, such as "Mmm", "Uh Huh", "Okay", "Right", etc. Continuers are different from acknowledgment tokens, even though some terms like "okay" may sometimes serve as an acknowledgment token. The main difference is that continuers occur within the other person's speaking turn. As indicated above, these instances of simultaneous talk are not considered interruptions. An example of a continuer is "right" in the following snippet:

   A: You know I was supposed to take the medication twice a day
   B: Right
   A: but instead I've been taking it only once a day.

Because continuers generally stand alone, they do not include a function code. So, continuers have form of: X00100, where "X" is a content code.

2. Event Extension: This indicates that the current utterance is an extension of the topic of the previous utterance, but is shifted to some degree. It may be seen as related to the previous topic, but not exactly the same topic. For example,

   A: It burns?
   B: Really bad. It burns for like a minute or so.
   A: Um, how long have you been having this trouble?

A's second turn is an event extension of the topic because she has shifted the focus from "burning" to "how long".
3. **Issue Extension**: This indicates that the current utterance is an extension of the same topic as the previous utterance, and is central to the fundamental meaning of the previous utterance. For example, an issue extension to "I take five drinks per day, sometimes as many as seven", might be "Why do you feel you need to take 5-7 drinks per day, are you under stress or something?" Similarly, in the example above (for event extension) B's utterance is an issue extension of A's first turn.

4. **Pop Extension**: Pop extensions involve taking up a theme that was mentioned in a prior turn, but not an immediately prior turn. Pop extensions refer to a theme that was discussed or mentioned five or more turns prior. Usually a topic change or event extension occurs before this code is given. See immediate pop, below for additional information.

5. **Topic Change**: As the term suggests, these are utterances that introduce a topic that is substantively different from the topic of the previous utterance. Unlike event extensions, topic changes are not seen as directly related to the previous utterance.

6. **First Utterance**: This code is used only to indicate that the utterance is the first statement of the interview, or the first statement made after a long period of silence (e.g., this sometimes happens during physical exams, sometimes the doctor or patient will leave the room for a period of time).

7. **Immediate Pop**: These are similar to Pop Extensions, except that Immediate Pops refer to a theme that was discussed or mentioned 3-4 turns previously. For example:

   A: Have you ever had surgery?
   B: The only surgery I had was for tonsils, when I was little. I had several minor problems when I was little.
   A: When you were five or so?
   B: Yeah.
   A: Okay, what sort of minor problems did you have?

   A's last utterance is an Immediate Pop to B's first utterance.
Function Codes
Choose 1-31

1. Closed Question: An utterance designed to solicit specific information (e.g., "How many pills are in one prescription?"; "What day did that happened?"; "How many..."; "Where did it...")

2. Moderately Closed Question: An utterance designed to solicit somewhat specific information, but that affords the respondent with an option to answer in a closed manner or to elaborate ("When did you decide to have the operation?"; "Have you been experiencing any back pain or troubles since the operation?"). Most of the time these questions provide context for an expected answer.

3. Open Question: An utterance designed to solicit information in a manner that clearly invites the respondent to elaborate and usually on his/her thoughts or feelings about something. ("Tell me how you feel when that happens"; "What do you think we should do about that?").

4. Embedded Question: This is an utterance that is in the form of an assertion, but within context, is really serving as a question. Typically, these types of utterances are made by patients, although it is possible for doctors to use them too. Patients will sometimes make diagnostic statements as a way of asking the doctor for a diagnosis without actually asking, for example:

   A: I noticed in your chart that you had problems with your sleeping habits. Is that better now?
   B: I think it was just because I stayed up late, then slept in. I was always tired cause I slept in so late. I'd go to bed late and wake up late. That's why I was always tired, I think that what it was.

5. Solicited Answer: This is an utterance which serves as a direct answer to an immediately preceding question. Often these utterances are brief and to-the-point with little or no elaboration or hesitation. They are typically given in response to closed or moderately closed questions.

6. Elaboration: The form of this is: solicited answer + an extension. For example, if a person was asked "How often do you drink wine?", an elaboration might be, "Not very often. Well, sometimes I do drink wine several days in row, but I don't do that all the time."

7. Unsolicited: This an utterance which provides information that has not been directly prompted by the previous utterance. The information is related to the topic of the previous utterance (in other words, it's not from "left field"), but it is not directly prompted by it, such as a question prompts a certain response.

8. Expansion: A continuation on a theme/topic. This usually occurs when an utterance is separated by a continuer or interruption from the partner.

9. Conditionally Relevant Question: An utterance designed to seek clarification of another's immediately preceding utterance (e.g., "I'm sorry what did you say?"; "Did you say three times a day").
10. **Formulations**: A summary of the gist of what self or another participant has said (e.g., "So, you have had back pain for two weeks and you think it's related to lifting a heavy object").

11. **Restatement**: A participant re-states what the other has just said. Often the restatement uses exactly the same words as the other, but sometimes there is a slight change in word usage (e.g., A: "I took three pills yesterday", B: "You took three pills"). As a rule, re-statements are typically briefer than formulations and address only a single utterance, whereas formulations summarize an entire segment of talk.

12. **Assertion**: A declarative statement with propositional content. In other words, these indicate someone's assessment of what is going on or how he or she sees something.

13. **Agreement**: An explicit endorsement, acceptance or confirmation of a speaker's utterance (e.g., "Okay"; "I feel the same way"; "Exactly"; "That's right").

14. **Disagreement**: A rejection or challenge of a speaker's statement (e.g., "No, I don't think you'll be able to follow that diet"). Disagreements, as opposed to corrections (see below), are clashes of opinion where one speaker takes a position on something that is in opposition to the other.

15. **Correction**: A repair of the accuracy of a speaker's statement. For example:

   A: Why do you use the salt water, to keep things open?
   B: No, I use it to keep things moist.

16. **Legitimizing affect**: Any statement showing understanding or validation of an affective state of the other (e.g., "I understand how you felt when that happened"; "I can see why that would frighten you"). Or, as in the following:

   A: That was, I think that's probably the most dangerous thing that happened.
   B: You bet. Sounds pretty significant.

17. **Naming**: A speaker identifies and names a verbal or nonverbal behavior of the other (e.g., "You look sad"; "You sound angry"; "I noticed that you hesitated when...").

18. **Apology**: Utterances designed to serve as an expression of remorse about something, "I'm sorry about being so late."

19. **Polite Directive**: Orders or commands that are phrased in a polite form, such as "Please open your mouth", or that include the other's name, "OK Frank, jump up on the exam table."

20. **Directive**: An order, command, etc. to do something, such as "Take off your shirt", "Move your arm upward."

21. **Qualified Directive**: An order, command that is phrased in question form, such as "Can you lay down for me?" If polite and in qualified form, use qualified.
22. **Compliance**: An utterance or behavior that is in direct compliance with a directive (i.e., 19, 20 or 21, above). Usually, the utterance is brief, such as "OK", "yeah".

23. **Relational**: An utterance that is primarily intended to establish/maintain a relational function of some kind, such as trust, or friendship (e.g., "I not only want to be your doctor, I want to be your friend"). This code also includes conversation openers, such as "Hi, how are you today?" and self-introductory statements like "Hello, I'm Dr. Jones."

24. **Hedging**: Utterances that suggest the speaker may be trying to avoid a direct response (usually to a question). The utterance may include pausing, filled or unfilled.

25. **Justification**: A warrant or reason is offered to account for a question, directive or assertion. For example, "The reason I asked you that was I couldn't find anything in your chart about that.", "I'm going to ask you to roll over for a minute because I can't see very well from this angle."

26. **Explanation**: The primary function of these utterances is to inform/instruct the other. For example, a doctor might explain the reason for a test or procedure. This is different from a justification in that the focus is on teaching/instructing rather than justifying/accounting.

27. **Reinforcement**: Utterances that provide encouragement, or positive support for something said or done. For example, "Great, you lost five pounds since your last visit", "That's wonderful."

28. **Bracketing**: Telling the other that a particular topic will be discussed later in the visit. For example, "You mentioned back problems, we'll discuss that in a minute." In addition, when telling the other person what will be coming next in the interview. "We will be doing the exam here in a second," or "Hold on as I look through your file."

29. **Small Talk**: Talk about non-medical topics, such as the weather, people the participants know, vacation plans, etc. Use this code even if the utterance is in question form. This talk usually occurs at the beginning, end, or during the physical exam portion of the interview.

30. **Humor**: Talk that is intended to serve as a joke.

31. **Incomplete**: This is an unfinished utterance, often occurring with an interruption on the other's part. The key here is that the utterance is difficult to interpret because of the missing part, so it is not clear what other category it might be coded as.
### Appendix B

**Post-Interview Questionnaire For The Physician**

**Directions:**

Please provide your reactions to the following questions by circling the most appropriate response. The questions refer to the visit you *just had* with your patient. All responses will be held in strict confidence.

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
<th>Somewhat</th>
<th>Not Sure</th>
<th>Somewhat</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I spent enough time with the patient.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I answered all the patient's questions honestly and completely.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I explained the patient's medical problem to him/her in language that he/she could understand.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I made sure the patient understood his/her medical problem.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I made a special effort to get the patient to explain his/her symptoms and problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I made sure the patient understood the prescribed treatment (what he/she should do to get better).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I showed that I really cared about the patient and his/her health problem.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I was a competent communicator during the visit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. The patient was a competent communicator during the visit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I decided what treatment the patient should have without asking for his/her opinion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>-------</td>
<td>----------------</td>
<td>---------</td>
<td>-------------------</td>
</tr>
<tr>
<td>11.</td>
<td>I explained alternative treatments and, together, the patient and I decided which alternative to follow.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>12.</td>
<td>I honestly and thoroughly explained the limits of the prescribed treatment.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>13.</td>
<td>The length of time the patient waited to see me today was reasonable.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>15.</td>
<td>I showed understanding for what the patient was experiencing due to his/her health problem.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>16.</td>
<td>I created a climate so the patient could talk freely and ask questions</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
</tbody>
</table>
**Post-Interview Questionnaire For The Patient**

**Directions:**

Please provide your reactions to the following questions by circling the most appropriate response. The questions refer to the visit you just had with your doctor. All responses will be held in strict confidence.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The doctor spent enough time with me.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>2. The doctor answered all my questions honestly and completely.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>3. The doctor explained my medical problem in language I could understand.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>5. The doctor made a special effort to get me to explain my symptoms and problems.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>6. The doctor made sure I understood the prescribed treatment procedure (what I should do to get better).</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>7. The doctor seemed to really care about me and my health problem.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>8. The doctor was a competent communicator during the visit.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>9. I was a competent communicator during the visit.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>10. The doctor decided what treatment I should have without asking for my opinion.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
<tr>
<td>11. The doctor explained alternative treatments and together we decided which alternative to follow.</td>
<td>Agree</td>
<td>Somewhat Agree</td>
<td>Not Sure</td>
<td>Somewhat Disagree</td>
</tr>
</tbody>
</table>
12. The doctor honestly and thoroughly explained the limits of the prescribed treatment.  
Agree Somewhat Not Sure Somewhat Disagree

13. The length of time I waited to see the doctor today was reasonable.  
Agree Somewhat Not Sure Somewhat Disagree

14. The doctor engaged me in small talk and friendly conversation.  
Agree Somewhat Not Sure Somewhat Disagree

15. The doctor showed understanding for what I was experiencing due to my health problem.  
Agree Somewhat Not Sure Somewhat Disagree

16. The doctor created a climate so I could talk freely and ask questions  
Agree Somewhat Not Sure Somewhat Disagree

PLEASE PROVIDE AS MUCH DETAIL AS YOU CAN FOR THE FOLLOWING QUESTIONS.

17. Explain what the doctor said about the cause of your problem. In other words, what was his/her diagnosis?

18. What did the doctor say you should do to feel better? In other words, what did the doctor prescribe or recommend for treatment of your problem?

19. Please specify any other details you learned during your visit with the doctor.
REFERENCES


Hall, J. A., & Dornan, M. C. (1988). What patients like about their medical care and how often they are asked. Social Science and Medicine, 2, 935-939.


Koch & Mendelbaum (1986). (to be added later)


and D. O'Hair (Eds.), *Relational communication and health outcomes* (pp. 57-72). Cresskill, NJ: Hampton.


Steele, D., Jackson, T. C., & Guttman, M. C. (1990). Have you been taking your pills? The adherence monitoring sequence in the medical interview. *Journal of Family Practice, 30*, 294.


Street, R. L. (1992a). Analyzing communication in medical consultation: Do behavioral measures correspond to patients' perceptions? Medical Care, 30(11), 976-988.


NOTES

1The meaning of accommodation here is to adjust or adapt to another’s goals as opposed to necessarily reconciling self/other goals. This allows for definitions of competent behavior in situations where it is appropriate to reject another’s goals.

2Regarding pop extensions, when a speaker returns to a topic that s/he previously overlooked or discounted, in the pure sense, it may be considered a topic change since it does not directly relate to the previous utterance. However, in reality, the speaker may actually be attempting to repair the interactional problem by returning to the original topic of conversation (Garvin & Kennedy, 1986).

3Whether a question is moderately closed or conditionally relevant may be of concern to the reader. The difference is in what immediately precedes the question. If the question stands alone, without any indication to a previous assertion or question, it is moderately closed. However, when the previous statement by a participant is being clarified by the current question, it should be considered conditionally relevant.

4The scale values of this item were reversed.
Intercorrelations for all categories showed some significant correlations. That is expected given the sequential nature of this coding scheme. A table with these correlations is very large, but is available from the author on request.

The numbers above do not include conditionally relevant questions. Reporting the number of questions patients ask relates to the patient as information seeker in the sense that they ask direct or indirect questions in hopes for substantive or elaborated answers. In terms of information giving, conditionally relevant questions rarely provide "additional" information. Instead, they provide clarified or restated answers. The numbers reported in this section include only direct questions. Doctors and patients were almost equal in the proportion of conditionally relevant questions each asked.

The moderate competent dyads are not explicitly dealt with in this analysis. The moderate represent a group that has a truly a mixture of high and low competent interactions and aligning moves, but not a significant enough presence of either that would qualify them as either high or low.

Before illustrating this feature, it should be noted that there are some variations in amount and quality of information provided by the doctors relative to patient status. For instance, new patients generally received
information on a variety of issues (e.g. history taking revealed continuing problems a patient deals with, in addition to the main reason for the appointment) and repeat patients usually received information on their single reason for the appointment (e.g., getting prescription refills, reviewing previous test results, or following up on a chronic problem). So, staying on only those issues pertinent to the interview relative to the patient status revealed a difference between the 32 dyads. Those dyads eventually categorized as the high competent group kept to the issues set aside for the appointment and/or were not susceptible to those “oh, by the way” comments at the end of the interview (except in those first time patient cases where other issues were purposefully addressed).

9A final note needs to be addressed about how doctors provide information to patients with explanations and justifications. This analysis was not based on the criteria that frequency of these categories relates to better explanations. The sheer frequency of these categories does not provide the evidence of how and to what extent physicians are giving diagnostic and treatment information. Instead, each instance of explanations was evaluated on Parrott’s criteria, diagnostic detail, and in other cases prognosis. In addition to these, doctors’ use of expansions on topics and elaborations on patients’ questions were also considered a part of explanation and information giving. This analysis was based on doctors’ use of both explanations, justification, elaborations, and expansions.
After viewing the ANOVA results, a decision was made to widen the range in interpreting probability levels. This decision was made for two reasons. First, given the developmental nature of the coding scheme and its results, it was necessary to allow for more latitude in which analyses could be interpreted based on significance level. Thus, going beyond the a pre-set alpha, such as .05, would be appropriate. The second reason for doing this was that because the dyad was the unit of analysis in the ANOVAs, the total N would be reduced from 64 to 32. This results in a significant loss in degrees of freedom, which contributes to the overall significance level (cite). So, the probability levels reported here ranged from $p < .0001$ to $p < .14$ in order to account for fewer degrees of freedom and the developmental nature of the coding scheme.