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## Analyzing Patient Participation in Medical Encounters

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An essential component of the delivery of health care is the consultation between the patient and health care provider. Participation in the medical consultation is fundamentally a communicative event in which clinicians and patients use talk to exchange information, to share their expertise and points of view, to build a trusting relationship, and to make health-related decisions. A growing body of evidence indicates that patients who more actively participate in these encounters are more satisfied with their health care, receive more patient-centered care (e.g., information, support) from providers, are more committed to treatment regimens, have a stronger sense of control over health, and even experience better health following the visit than do more passive patients (for reviews, see Kaplan, Greenfield, & Ware, 1989; Roter & Hall, 1993; Street, 2001). Because patient involvement is an important part of the health care process, it is imperative that investigators analyze the phenomenon using reliable and valid measures that have a solid conceptual foundation.

In this article, we have three objectives. First, we describe the conceptual foundation and measurement strategies used in our approach to analyzing the communicative acts that constitute patient participation in medical encounters. Second, we apply our method to an analysis of nine videotaped recordings of physician–patient interactions. Two research questions (RQs) will be examined: (a) To what extent do patients ask questions, express concerns, and engage in assertive behavior in their interactions with physicians? and (b) Are patients more active communicators when their physicians use partnership building (e.g., soliciting the patient’s opinion) and supportive talk (e.g., reassurance, encouragement)? Finally, we conclude with a discussion of challenges and prospects for

developing more ecologically valid and efficient procedures for assessing patient participation in care.

## ANALYZING PATIENT PARTICIPATION IN MEDICAL ENCOUNTERS

### Conceptual Foundation

To participate in medical consultations, patients must be able to express their needs, concerns, beliefs about health, and expectations for care (Street, 2001). For our purposes, we define *patient participation* as the extent to which patients produce verbal responses that have the potential to significantly influence the content and structure of the interaction as well as the health care provider's beliefs and behaviors. Patient participation can be conceptualized both qualitatively with respect to the types of speech acts that interject the patient's perspective into the consultation and quantitatively with respect to the frequency with which these behaviors are produced. Verbal acts of participation might include asking questions, descriptions of health experiences, expressions of concern, giving opinions, making suggestions, stating preferences, to name a few (Kaplan et al., 1989; Roter & Hall, 1993; Street, 1991, 2001).

### Measurement Issues

The most popular approach for studying the patient's actual behavior in the consultation is to first produce a transcript based on an audiotape or videotape of the interaction. Second, the interactants' responses are then divided into discourse units (e.g., utterances) and placed into particular categories of verbal behavior (e.g., questions, opinions). Quantitative indexes of the various discourse categories are then computed and used in statistical models either as a dependent variable (e.g., to test the effectiveness of a patient activation intervention; see Greenfield, Kaplan, & Ware, 1985; Roter, 1977) or as a predictor of outcomes of interest (e.g., patient satisfaction, adherence, health improvement; see Ong, de Haes, Hoos, & Lammes, 1995; Roter & Hall, 1993; Street, 1992a).

Although behavioral indexes of communication avoid some of the perceptual biases of self-report measures, they do have limitations. For one thing, the transcription and coding of interactions is slow and labor intensive. An interaction of 1 hr may take 3 to 4 hr to transcribe and code. Second, behavioral coding schemes often are not sensitive to within category differences in the interactants' perceptions of the coded units (Street, 1992a). For example, a physician might be more concerned if a 67-year-old patient said, "I have chest pains," than if he said, "I have a stomach ache," although both utterances could be coded as information giving.

## A PRAGMATIC APPROACH TO THE STUDY OF PATIENT PARTICIPATION

Aware of the strengths and limitations of behavioral approaches to the study of communication in medical consultations, our research team has developed a manageable, reliable, and theoretically grounded approach to the analysis of patient participation in care, one that can be used for a variety of scientific, clinical, and educational purposes.

### Operational Definitions

In previous research (Street, 1991, 1992a, 1992b; Street, Voigt, Geyer, Manning, & Swanson, 1995), we have identified three forms of speech—asking questions, expressing concerns, and assertive utterances—that are essential and observable features of patient participation in medical encounters. These types of responses are important because of their potential to influence the course of the interaction, elicit resources from providers (e.g., information, patient-centered care), and contribute to improved postconsultation outcomes. Table 1 provides definitions for these features of patient participation as well as some examples.

A question is an utterance in interrogative form, the purpose of which is to solicit information or clarification (Beisecker & Beisecker, 1990; Roter, 1977). An

TABLE 1  
Operational Definitions of Communicative Acts of Patient Participation

<i>Verbal Behavior</i>	<i>Definition</i>	<i>Examples<sup>a</sup></i>
Asking questions	Utterances in interrogative form intended to seek information and clarification	“What’s my thyroid?” “Does smoking do that?” “Is there anything they can do?”
Expressions of concern	Utterances in which the patient expresses worry, anxiety, fear, anger, frustration, and other forms of negative affect or emotions	“It’s very frustrating” “No, ... I just have a fear of the operation” “I’m even scared to play with my own granddaughter”
Assertive responses	Utterances in which the patient expresses his or her rights, beliefs, interests, and desires as in offering an opinion, stating preferences, making suggestions or recommendations, disagreeing, or interrupting	“Go ahead and do it” “I really don’t want anybody to x-ray it.” “I don’t want to have to lie for it”

<sup>a</sup>These examples were taken from the transcripts used in this study.

expression of concern is a statement in which the patient expresses worry, anxiety, fear, anger (Street, 1991, 1992b), or other forms of negative affect (Kaplan et al., 1989; Roter & Hall, 1993). An expression of concern may be marked vocally by tone of voice or linguistically by such words as *concern*, *worry*, *afraid*, *frustrated*, or *mad*. Finally, a patient is being assertive when he or she expresses his or her rights, beliefs, interests, and desires during the interaction (see, e.g., Infante & Rancer, 1995). In a medical consultation, a patient is being assertive when stating an opinion about health, expressing preferences for treatment, making suggestions or recommendations, introducing a new topic for discussion, or disagreeing with the clinician.

### Coding Methods

In general, patients talk less than do physicians (about 40% and 60%, respectively), and most of their communication is in the form of giving information in response to the physician's questions (Roter, Hall, & Katz, 1988). Questions, expressions of concern, and assertive responses each on average represent less than 10% of patient's utterances (Roter et al., 1988; Street, 1992b). Because verbal acts of patient participation occur with relative infrequency, the first step in the coding process is to have coders simply listen to an audiotape or videotape of the interaction. Each time the coder perceives that a particular behavior occurred (e.g., the patient asked a question or expressed an opinion), that portion of the dialogue is transcribed including several conversational turns before and after the identified event. The next step is to divide the segment of discourse into utterances for coding. *Utterances* are the oral analogues of a simple sentence and may be in the form of a complete sentence, independent clause, nonrestrictive dependent clause, multiple predicate, or evaluation (Stiles, 1992). The coder then listens to that part of the tape again, follows the transcript, and places the utterances into mutually exclusive categories of verbal behavior (i.e., questions, expressions of concern, assertive utterances).

Although this sounds simple enough, there are factors that complicate our coding method. First, an utterance conceivably could fall into more than one category. Suppose a patient says, "Why did I get this disease?" In a normal tone of voice, this would be a question; in an emotional tone, this would be an expression of concern. Coders are instructed to code the act as he or she interpreted its primary function within the context of the discourse. Second, we have found that coding some types of assertive utterances is sometimes problematic. Expressing disagreement, interrupting, making a recommendation, stating preferences, and issuing directives are assertive acts that are relatively easy to identify. However, suppose a patient says, "I have borderline diabetes" or "I am a functional alcoholic." Are these simply observations about the patient's health status, or are they opinions emerging from the patient's personal beliefs about health? In our coding system, we generally take a

conservative approach when patients express their views about health. These statements are considered assertive utterances only if (a) coders perceive them as an attempt by the patient to interject his or her beliefs into the interaction, and (b) the clinician explicitly accepts, challenges, or discusses this belief.

## Data Analysis

Because our samples of discourse usually are naturally occurring (and not the product of experimental manipulation), we generally rely on correlational and regression analyses to examine factors affecting and outcomes associated with patient participation in medical encounters. We do, however, try to control for confounding influences either by using a statistic, such as the semipartial correlation, which identifies unique variation shared between two variables (see, e.g., Street, 1991, 1992b) or by using regression procedures that first remove known influences on dependent variables prior to entering predictors of interest into the model (see, e.g., Street et al., 1993; Street & Voigt, 1997; Street, Voigt, et al., 1995).

Finally, a comment should be made about our choice to use frequencies of behaviors and not proportions (i.e., ratio of a particular behavior to the total number of behaviors produced by the interactant) as an index of patient participation. Although frequency and proportion data tend to be highly correlated, the argument could be made that frequency data are confounded by the length of the interaction, whereas proportion data are not. However, this claim ignores the fact that the discourse of medical consultations is mutually constructed by the interactants and that longer interactions will occur primarily because the participants choose to make more conversational contributions. Furthermore, our research indicates that frequencies of patients' and clinicians' verbal behaviors are generally more predictive of outcomes and are better predicted by theoretically meaningful variables (e.g., the patient's age and education, the physician's use of partnership building) than are behaviors coded as proportions (Street, 1992a).

## AN ILLUSTRATION

### RQs

As have the other authors in this special issue, we applied our coding system to the analysis of nine physician–patient consultations that were recorded on videotape. Although this is a small sample, we can address two important research questions.

**RQ1:** To what extent do patients in this sample ask questions, express concerns, and engage in assertive behavior during their interactions with physicians?

RQ2: Are patients more likely to participate in these consultations when their physicians use partnership building and supportive talk?

As mentioned earlier, patient involvement in medical consultations can improve the quality of care patients receive and contribute to better health outcomes. Thus, assessing the degree to which patients participate in their interactions with physicians and identifying factors affecting their communicative activity are issues of considerable importance to both researchers and clinicians. In previous research, patient participation has been linked to (a) the patient's personal characteristics (e.g., age, education, personality; Beisecker & Beisecker, 1990; Street, 1992b, Street, Voigt, et al., 1995), (b) patient "activation" interventions designed to help patients become more involved in care (Greenfield et al., 1985; Rost, Flavin, Cole, & McGill, 1991), and (c) the health care provider's communicative style (Street et al., 1993; Street, Voigt, et al., 1995; Wissow, Roter, & Wilson, 1994). In this analysis, we examine patient participation in relation to the physicians' use of two types of patient-centered communication, partnership building and supportive talk.

*Partnership building* refers to communicative acts that encourage patients to discuss their opinions, express feelings, ask questions, and participate in decision making (Roter & Hall, 1993; Street, 1992a, 1992b). Partnership building also occurs when the clinician explicitly agrees with or affirms the patient's opinion, belief, or request. *Supportive talk* includes statements of reassurance, support, empathy, and other verbal displays of interpersonal sensitivity (Ong et al., 1995; Roter & Hall, 1993; Street, 1991). These verbal behaviors facilitate patient participation because they encourage and legitimize expression of the patient's views, needs, and concerns. Furthermore, conversational norms create expectations that the interactants' utterances be topically connected and that certain speech acts (e.g., answers) follow others (e.g., questions; Cappella, 1994; Sacks, Schegloff, & Jefferson, 1974). Thus, if asked by the physician, a patient is likely to state his or her preferences for treatment because the physician has provided an opportunity to discuss these issues and because the patient may feel obligated to share his or her views in light of the physician's request.

## Method

Nine videotaped physician-patient interactions were provided to the authors by the editors of this special issue of *Health Communication*. The patients were ethnically diverse (White, African American, and Hispanic) and balanced between men ( $n = 5$ ) and women ( $n = 4$ ). Four of the nine physicians were women. Transcripts of these interactions were prepared for coding purposes. Two trained coders, unfamiliar with the research questions, independently watched the videotapes while following the transcripts. As described in our earlier explanation of coding methods, the cod-

ers looked for and categorized utterances in which the patient asked questions, expressed concerns, and displayed assertiveness and utterances in which the physician used partnership building and supportive talk.

## Results

Table 2 presents the means, standard deviations, and ranges of physician and patient responses of interest. The first research question asked the degree to which patients participated in these interactions. Consistent with other research (Roter et al., 1988; Street, 1992b), patients varied considerably in their degree of participation, as some rarely asked questions, expressed concerns, and were assertive, whereas others were more expressive. Collectively, however, these acts of patient participation averaged less than 7% of the total utterances for patients. Also, as revealed in Table 2, physicians only occasionally used partnership building and supportive talk. These averaged less than 2% of the physicians' total utterances.

Other research similarly has shown that these types of verbal behaviors represent a small fraction of the talk of medical encounters (Roter et al., 1988; Street, 1992b). However, even by these norms, this sample of patients and physicians produced relatively few of the behaviors of interest. These responses may have occurred infrequently because, compared to patients in other studies, this small sample may have had less formal education, more ethnic diversity, and more physical ailments as primary complaints, variables that are generally associated with lower rates of patient participation and less patient-centered behavior (espe-

TABLE 2  
Descriptive Statistics of Patient and Physician Responses

<i>Behavior</i>	<i>M<sup>a</sup></i>	<i>SD</i>	<i>Range</i>	<i>% of Utterances<sup>b</sup></i>	<i>Cohen's <math>\kappa</math></i>
Patients' participation					
Asking questions	4.22	3.99	0-10	2.0	.93
Expressions of concern	2.67	2.91	0-7	1.2	.85
Verbally assertive responses	8.56	5.11	1-16	3.8	.80
Total active participation responses	15.44	10.76	3-30	6.9	.83
Physicians' patient-centered responses					
Partnership building	2.44	1.56	0-5	0.7	.82
Supportive talk	2.78	2.43	0-7	0.8	.85
Total patient-centered responses	5.22	3.08	1-11	1.5	.81

<sup>a</sup>Mean scores represent the average frequency of the behavior for each interaction. <sup>b</sup>The percentages refer to the proportion of utterances of this type relative to the total number of utterances produced by that interactant. The mean number of patient and physician utterances per interaction was 233 and 348, respectively.

cially partnership building) by physicians (Kaplan, Gandek, Greenfield, Rogers, & Ware, 1995; Street, 1991, 1992b).

The second research question asked whether patients were more active participants the more their physicians used patient-centered responses. Because of the small number of interactions ( $N = 9$ ) and the relative infrequency with which acts of interest occurred, the statistical relations between physicians' and patients' communication behaviors will be unstable. Nevertheless, these correlations were in the predicted direction, and several reached statistical significance (see Table 3). As expected, those doctors who used patient-centered responses in turn had patients who were more assertive, more freely expressed their concerns, and asked more questions. Moreover, the relation between patient-centered behavior and patient participation was sometimes bidirectional. That is, the patient's acts of participation appeared to encourage the physician to be more patient centered. The examples following, which were taken from these consultations, show how patient-centered responses can be both a stimulus for and response to acts of patient participation.

*Example 1:*

Doctor: Would you feel better if you had some support for your neck to wear once in a while? [partnership building]

Patient: What do you mean by that?

Doctor: Wear a collar?

Patient: On no ... not really. I feel uncomfortable with them on [assertive talk].

*Example 2:*

Patient: (I can) walk around, maybe you know, do a little housework. I do have my 8-year-old granddaughter that I have to take care of.

Doctor: Gosh, it seems awfully frustrating [supportive talk].

TABLE 3  
Correlations Among Patient Participation Behaviors  
and Physicians' Patient-Centered Responses

<i>Patient Participation Behaviors</i>	<i>Physicians' Patient-Centered Responses</i>		
	<i>Partnership Building</i>	<i>Supportive Talk</i>	<i>Total Patient-Centered Responses</i>
Asking questions	.72**	.25	.71**
Assertive utterances	.70**	.27	.64*
Expressing concern	.65**	.61*	.81**
Total patient participation behaviors	.76**	.41	.78**

\* $p < .10$ . \*\* $p < .05$ .

Patient: I'm even scared to play with my own granddaughter ... scared I might hurt myself again [expression of concern].

*Example 3:*

Patient: If you guys want me to keep coming for this, I will. But I do want to keep my doctor [assertive talk].

Doctor: Yah, I think the important thing is to have a regular doctor that you consider your regular physician. I think that's very important [partnership building].

These examples highlight the prospect that the patient's efforts to participate in the consultation coupled with the physician's facilitation of this involvement can create a "cycle" of collaboration and rapport that ultimately leads to more patient-focused care and medical decisions that are better adapted to the patient's unique needs (Levenstein et al., 1989; Street, 2001).

Of course, there will be negative cases such as when the physician's partnership building fails to elicit greater patient involvement.

*Example 4:*

Doctor: OK, do you have any questions or anything?

Patient: No.

In other situations, the physician may be unresponsive or inattentive to the patient's question, concern, or preferences. In the example below, the patient persists in restating his opinion about eligibility for a disability assistance program until the physician finally responds.

*Example 5:*

Patient: Cos, you know, I am, you know, partially disabled. Now I feel like I shouldn't have to lie for it (to get on SFI). What hurts me, you know, there's other people out there, you know, dope addicts ... alcoholics ... and, you know, people just acting like that [assertive talk].

Doctor: Mmm.

Patient: I don't feel like I have to lie for it [assertive talk].

Doctor: Hmm.

Patient: And I have to ... you know ... lie for it? Which I don't feel like I have to do [assertive talk].

Doctor: What have they told you?

In summary, the evidence presented here suggests that physicians' use of partnership building and supportive talk does facilitate patient participation in medical consultations. Some clinicians might argue that greater patient involvement can be

a problem because it takes up time in an already time-constrained visit. However, this is not necessarily the case, especially if providers feel less of a need to dominate the conversation as patients choose to talk more (see, e.g., Kaplan et al., 1989). Experienced and trained clinicians often need only a few minutes to listen to and satisfactorily discuss issues of concern to a patient (Branch & Malik, 1993), an amount of time that takes up only 5% to 20% of the consultation time available (Smith & Hoppe, 1991).

## CONCLUSIONS

In this article, we described the conceptual foundation and coding procedures for our method of investigating communicative behaviors underlying patient participation in medical encounters. Our approach is manageable and should be of value to researchers and clinicians interested in understanding and improving ways in which patients can participate effectively in the health care process. The limitations of our own and others' methods of studying provider-patient discourse highlight the need to develop even more valid and efficient measurement systems. Toward this end we see two important challenges, improving the interpretive reality of the coding system and developing more efficient coding methods.

### Improving Interpretive Reality

As mentioned earlier, verbal behaviors categorized as a particular type of speech act (e.g., giving information) may vary greatly in their perceptual salience to the interactants. A patient will respond very differently to "you have a cold" than to "you have cancer," although both utterances would likely be categorized as information giving. In a recent study, Street (1992a) explored the relation between perceptual and behavioral measures of communication and found that a quantitative index of physicians' information giving was not predictive of patients' perceptions of the doctors' informativeness. However, the same study did find that physicians who used fewer controlling and directive behaviors and who displayed more patient-centered responses were perceived by patients as more interpersonally sensitive and more actively engaged in partnership building.

Why would some behaviors be more closely linked to patients' perceptions than others would? One possibility deals with frequency of occurrence. Significantly more of the physician's time is devoted to giving information and asking questions than to partnership building and supportive talk (Roter et al., 1988). Thus, patient-centered responses may have high salience for patients because they are valued and relatively rare. Patients may be more discriminating with information giving because these responses occur more often and will vary in their per-

ceived relevance (i.e., importance, novelty, clarity) to what the patient needs or already knows.

However, recognizing that a behavior of interest is a scarce but valued commodity does not address the overarching issue of how to converge behavioral categories with interactants' interpretations of the behavior. Several strategies may help this effort. First, investigators could adopt a "multiple measures" approach to analyzing communication by using both behavioral and perceptual measures (see, e.g., Street, 1992a, 1993, 1997; Street & Voigt, 1997; Street, Voigt, et al., 1995). A related approach is to combine qualitative and quantitative methods of analysis as we have done in this article (see also Roter & Frankel, 1992; Street, Gold, & McDowell, 1995). Quantitative analyses of verbal behavior allow researchers to discover the relation of discourse variables to each other and to outcomes of interest for an entire data set. On the other hand, quantitative measures are generally inadequate for capturing the underlying themes of discourse and the context in which they occur (Waitzkin, 1990). In this regard, qualitative methods (e.g., interpretive and critical analyses) may be very useful in understanding the rich complexities of the content and structure of discourse.

Finally, researchers could consider using stimulated recall, a methodological technique that requires the participants to review a recording of their consultation. As they listen or watch the recording, each interactant makes note of what he or she perceived as the significant events in the interaction. A major advantage of stimulated recall is that, rather than focusing on all of the behaviors exhibited during the exchange, the provider, patient, and (perhaps) coder can focus on the most notable behaviors that led to the most significant perceptions and outcomes. In this way, stimulated recall connects actual behavior to perceptual salience (cf. Frankel & Beckman, 1982).

### Improving the Efficiency of Coding Discourse

As just mentioned, the coding of verbal behaviors can be a laborious and time-consuming activity. If more investigators are to undertake the task of analyzing large samples of physician-patient discourse, efforts must be taken to streamline methods of observation and analysis. Several possibilities have potential in this regard. First, researchers can employ sampling procedures in which only a subset of the interactions are transcribed and coded. For example, researchers might analyze every 3rd min of the interaction, the first and last 5 min of the interaction, or the first 10 min of talk. By so doing, investigators are assuming that the distribution of talk in the segments of the interactions studied will be comparable to the pattern of talk for the entire interaction, an assumption that can be verified empirically.

Second, improvements in computing technology soon may help researchers reliably generate quantitative indexes of a wide variety of discourse features based

on key words, forms of speech, and even paralinguistic cues. Currently available are programs that scan text to compute measures of content and style (see, e.g., Hart, 1984). These programs only partially reduce the need for human labor because a transcript of the interaction is needed as input into these programs. However, with new developments in voice recognition technology, we one day may be able to create indexes of verbal behavior based on audio signals alone. Of course, whether by machine or by human senses and interpretation, the coding of discourse will only be as good as the conceptual foundation of the coding system and the degree to which the measures generated and examples selected are connected to what interactants perceive and experience.

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