28 Conversation Analysis in Medicine

VIRGINIA TEAS GILL
Illinois State University

FELICIA ROBERTS
Purdue University

1 Introduction

For over 30 years, conversation analysts have been investigating medical interactions in an array of settings. Initial interest in primary-care encounters between physicians and patients has expanded to include interactions in a variety of specialty care settings as well as in allied fields such as pharmacy and dentistry. Research has also moved beyond the boundaries of the clinic to medical helpline calls, home-care visits, and other sites where care and consultation are provided. In addition to analyzing encounters organized around diagnosing and recommending treatment for illness, conversation analysts have investigated therapeutic interactions, including psychotherapy and physiotherapy, and inter-actions among medical professionals who are simultaneously engaged in treating patients and training future members of the field. Woven throughout this litera-ture are considerations of how participants coordinate their actions around medical technologies and documents, and how they employ nonvocal resources such as touch and gaze. We will call this area of study medical CA. The expanding scope of inquiry and exponential growth in the number of medical CA publications and conferences over the last 30 years reflects its status as a substantive and vibrant subfield within Conversation Analysis.[1]

Medical CA emerged at a time when researchers were beginning to bring the conversation analytic approach to bear in institutional settings such as courtrooms (Atkinson & Drew, 1979) and classrooms (Mehan, 1979), revealing how ordinary talk is adapted or modified to accomplish specialized tasks and achieve the visibil-ity of these social contexts, and how participants orient to institutional identities

and entitlements (see Drew & Heritage, 1992a; Boden & Zimmerman, 1991a).[2] Its emergence followed a productive period of ethnomethodological and ethnographic studies of medicine and psychotherapy (e.g. Coulter, 1973; Sudnow, 1967; Turner, 1972; see ten Have, 1991, for a review), including studies of medical consultations (e.g. Byrne & Long, 1976; Strong, 1979).

In the late 1970s, a number of conversation analysts in the United States, the Netherlands and Britain began to use CA to investigate interaction between physicians and patients. Richard Frankel, who had studied with Harvey Sacks in the early 1970s and held an academic position in an American medical school, was motivated by the practical concern of how to educate physicians to provide more humane patient care. At this time, national concern was growing about the disconnection between the day-to-day realities of healthcare delivery in the United States and how physicians were educated. Frankel (1983: 21) argued that because so much of medical practice "consists of concerns and problems that arise and are managed at the level of discourse," suggestions for improving medical education needed to be better grounded in systematic research of actual medical encounters. Along with colleague Howard Beckman, Frankel began videotaping medical encounters and using them as an educational tool in the medical curriculum (see Frankel & Beckman, 1982); his early empirical investigations drew attention to the role of participants' mutual social participation and coordinated actions (including the use of touch and gaze) in medical encounters (Frankel, 1982, 1983, 1984).

At this time, sociologist Candace West began using CA to reveal the interactional basis of "troubles" between doctors and patients. In her groundbreaking book, *Routine Complications: Troubles with Talk between Doctors and Patients* (West, 1984a), she argued that although feminist scholars and medical sociologists in the critical tradition had raised critiques of male-dominated medicine and cited the impact of doctors' and patients' asymmetrical social roles on their relationships, there was little understanding of how power and control were actually exercised in medical encounters. Through her systematic analyses of doctors' and patients' vocal and nonvocal behaviors in family-practice visits, West revealed some interactional sources of misunderstandings in these visits (West, 1984a; see also West, 1983, 1984b). In the Netherlands, sociologist Paul ten Have also began analyzing recordings from general-practice consultations in the late 1970s. His early investigations, published mainly in Dutch, included explorations of the opening sequences in medical encounters (ten Have, 1980), as well as their overall sequential organization (ten Have, 1987, 1989). In Britain, Paul Atkinson and Christian Heath began bringing their interest in workplace routines and professional practice to the study of medical encounters. Their edited volume, *Medical Work: Realities and Routines* (Atkinson & Heath, 1981), a collection of papers on the routine practices and practical reasoning of participants in a variety of medical settings, included analyses of the use of medical jargon in doctor-patient interaction (Meehan, 1981) and the opening sequences of general practice consultations (Heath, 1981); the latter was part of a series of early papers on how doctors use technologies—such as medical record cards, as well as other nonvocal resources—

in coordination with speech in medical encounters (Heath, 1982b, 1984, 1985, 1986).

These pioneers of medical CA, and those who have built on their legacy over the past three decades, have taken a distinctive approach to the study of medical interaction, one that has enabled unique contributions. The goals of medical CA are to understand and document *what* social actions and activities are accomplished by participants in medical encounters and *how* participants use interactional resources and sense-making practices to accomplish their goals, with the aim of identifying recurrent patterns of interaction (see Halkowski & Gill, 2010). A basic assumption, substantiated by empirical research, is that features of everyday conversation—including fundamental organizational features (such as turn-taking) and practices for achieving actions (such as describing troubles and delivering news)—are brought into medical encounters from the everyday world and adapted to accomplish particular tasks and address interactional dilemmas in those encounters (Drew & Heritage, 1992a; Heritage & Maynard, 2006c; Maynard, 1991).[3] In addition, as in everyday interaction, actions and activities in medical encounters are seen to be jointly accomplished by all participants in the interaction. This is not to suggest that these encounters are symmetrical, but rather that it is the way all of the participants manage their behaviors that produces the recognizable character of their interactions, whatever that may be (Maynard & Heritage, 2005).

These distinctive aims and assumptions drive the types of data that are collected in CA studies of medical encounters and shape the way analysts approach the data. As with CA research in other contexts (see Mondada, this volume), investigators collect audio- or video-recordings of naturally occurring conversations, which in this instance include a wide range of interactions such as routine and acute clinic visits, surgical procedures, psychotherapy sessions (see Peräkylä, this volume), and so on.[4] These recordings are transcribed using conventions that represent both the vocal and nonvocal features of the interaction, allowing for the detailed study of events as they sequentially unfolded (see Hepburn & Bolden, this volume). This permits fine-grained analysis and systematic documentation of the organized procedures the participants used to accomplish a wide variety of medical activities, from the diagnosis of routine illnesses, to the surgical correction of abnormalities, to the consideration of emotional issues. In line with the CA focus on *what* is being accomplished and *how* it is achieved, conversation analysts do not try to determine why the participants behave as they do. For example, they do not try to determine their motives for behavior nor do they consider how exogenous social factors such as gender, ethnicity, institutional identities, social roles, or power affect participants' conduct during medical encounters (but see Heritage & Stivers, this volume, for a discussion of mixed-methods research).

CA research on medical encounters has revealed a range of phenomena that have been overlooked or empirically underspecified within research traditions that primarily focus on accounting for participants' behavior or investigating its impact on various outcomes. CA investigations reveal how the unique textures

and recurrent features of medical encounters emerge and become recognizable social phenomena through participants' real-time, concrete behaviors. These features include *the general organizational features of encounters* (such as the progression of the different activity phases within medical interactions), *the organization of activities within the different phases of encounters* (such as taking a medical history), *the sequences of action through which these activities are achieved* (such as question-answer sequences), and *the construction of the turns of talk within these sequences* (such as how questions are asked). In addition, CA investigations also reveal *the generation of social arrangements,* such as asymmetries of knowledge and power, which in some analytic approaches are taken to inhere in the participants' institutional identities and to drive their behavior. Reflecting CA's ethnomethodological roots, these identities themselves (as well as asymmetrical social arrangements) are seen to emerge from participants' displayed orientations and behaviors and to be specifiable as systematic practices of action. By focusing analytic attention on the contributions of all parties to the encounter, *the participants' mutual orientations* become visible and encounters become recognizable as co-constructions (Heritage & Maynard, 2006c; Maynard & Heritage, 2005). It becomes possible to recognize *the interactional challenges and dilemmas* faced by the participants and how they handle these dilemmas, as well as the interactional ramifications of the different approaches they take. Consequently, the particular nature of the agency exerted by all participants, including those who might otherwise be assumed to be silenced because of their social status in the institutional setting (e.g. patients, physicians in training), becomes evident.

2   Streams of Research in Medical CA

Stepping back and surveying the scope of the medical CA literature generated over the past 30 years, several streams of research become apparent.[5] Bearing in mind that there are many ways of categorizing elements of any given body of research and that each way of doing so affects what will (and will not) be noticed, three streams become evident when one considers the social identities of the people whose behavior is under study, the settings within which they interact, and the primary social activities or tasks they accomplish in their encounters:

(i) Physician-patient interaction in primary-care and secondary- (tertiary) care outpatient clinic visits, where the main activities are evaluating, diagnosing and recommending treatment for illness, following up on particular medical conditions or doing preventive care (e.g. routine checkups).

(ii) Interactions among patients (or clients) and various types of medical practitioners beyond physicians—including paraprofessionals—where the primary activities are assessment, screening, advice-giving and/or treatment provision; these interactions may occur in a variety of medical settings or even outside medical facilities, such as over the telephone or in the client's/patient's home.

(iii) Interaction (and coordination of activities) among medical professionals—for example, as they simultaneously provide treatment to patients and engage in

professional training activities, decide upon appropriate diagnoses for patients or negotiate administrative matters.[6]

There are several books, edited volumes, and journal special issues within each of these streams of research (e.g. Beach, 1996, 2001a, 2009; Heath, 1986; Heritage & Maynard, 2006a; Hutchby, 2007; Maynard, 2003; Peräkylä, 1995; Peräkylä, et al., 2008b; Roberts, 1999; Stivers, 2007b; West, 1984a). Others cut across different streams; for example, they may consider interactions involving a range of different patients (or clients) and types of practitioners, particular actions and activities in a variety of healthcare settings, or interactions where participants may be coming together for any number of health-related purposes (Atkinson, 1995; Beach, 2012; Collins, et al., 2007; C. Goodwin, 2003b; Pilnick, Hindmarsh & Gill, 2010; Peräkylä, Ruusuvuori & Vehviläinen, 2005). Here we map the three streams of research and their various branches, to provide an orientation for those who wish to get an overall sense of the subfield of medical CA or investigate one particular area. We highlight some representative studies in each group, although space considerations have necessitated the omission of many important publications.

2.1   *Physician-patient interaction in the outpatient setting*

One major stream of research in medical CA focuses on the organization of interaction between physicians[7] and patients (and/or patients' representatives, such as parents) during outpatient clinic visits, where the main activities are evaluating health conditions or symptoms, diagnosing illness, and recommending treatment. Although many studies in this area focus on acute-care encounters in primary-care (general practice) settings, including pediatrics (Heritage & Stivers, 1999; Stivers, 2007b) and adult medicine (Heritage & Robinson, 2006a; Robinson, 2003), others consider a range of visit-types in primary-care settings, including routine check-ups and follow-up visits (Ariss, 2009; Collins, et al., 2005; Frankel, 1990; Gill, 2005; Gill & Maynard, 2006; Haakana, 2001; Halkowski, 2006; Heath, 1992; Peräkylä, 1998; Sorjonen, et al., 2006; Stivers & Heritage, 2001; ten Have, 1991; West, 1990). Researchers have also investigated interactions between physicians and patients in several specialty care settings, such as oncology (Beach, et al., 2005; Lutfey & Maynard, 1998; Roberts, 1999), orthopedics (Hudak, et al., 2010), chronic pain management (Clemente, 2009), gynecology (Weijts, Houtkoop & Mullen, 1993) and psychiatry (McCabe, et al., 2002; Mellinger, 1995; Speer & Parsons, 2006).

2.2   *Beyond the physician's office*

A second, and broader, stream of research investigates encounters between patients/clients (or their representatives) and different types of medical professionals, including paraprofessionals and practitioners who work outside conventional medicine traditions (see Pilnick, Hindmarsh & Gill, 2010). These

interactions may occur within or outside clinical environments. The central tasks may be assessing, diagnosing and recommending treatment for/giving advice about medical conditions, as in homeopathic consultations (Chatwin, 2008; Ruusuvuori, 2005a); however, the interactions may also center around providing treatment, as in physiotherapy sessions (Parry, 2009) and speech and language therapy (Beeke, Maxim & Wilkinson, 2007; Wilkinson, 2004), or they may involve one or a combination of these tasks, as in dental visits (Anderson, 1989; Hindmarsh, 2010), nurse-patient encounters (Jones & Collins, 2007), pharmacy consultations (Pilnick, 1998), telephone calls to medical helplines or physicians (Butler, et al., 2009; Drew, 2006; Greatbatch, et al., 2005), home health visits (Heritage & Sefi, 1992; Heritage & Lindström, 1998), and midwifery consultations (Kawashima, 2010). Research in multilingual settings, which may involve the participation of medical interpreters, is an emerging area of interest in medical CA (Bolden, in press-b). Interactions occurring *after* medical treatment has occurred, such as representatives' solicitations of tissue donations following patients' deaths (Weathersbee & Maynard, 2009), have also been analyzed.

This second stream of research also includes studies of encounters where medical professionals and paraprofessionals are testing or screening for various disorders, such as fetal abnormalities (Büscher & Jensen, 2007; Pilnick, 2004) and developmental disabilities (Maynard & Marlaire, 1992), or are delivering news regarding test results and diagnoses (Gill & Maynard, 1995; Maynard, 2003). Another substantial branch focuses on psychological counseling (see Peräkylä, this volume) including psychotherapy sessions (Antaki, Barnes & Leudar, 2005; Hutchby, 2007; Peräkylä, et al., 2008b; Voutilainen, Peräkylä & Ruusuvuori, 2010a) and group counseling sessions of different types (Arminen, 2004; MacMartin & LeBaron, 2006), as well as counseling associated with medical screening such as genetic testing (Lehtinen, 2007; Pilnick, 2002) and HIV testing (Kinnell & Maynard, 1996; Mattson & Roberts, 2001; Peräkylä, 1995; Silverman, 1997).

2.3   Interaction among medical professionals

A third major stream of research in medical CA highlights the coordination of actions and activities among medical professionals as they interact with one another. This includes the study of professional teamwork in medicine, such as the complex intersection of vocal and embodied actions among members of surgical teams (Hindmarsh & Pilnick, 2002; Mondada, 2007c; Svensson, Heath & Luff, 2007), as well as the coordination of actions and activities among medical professionals as they provide care to patients and simultaneously provide instruction to residents/trainees. The latter topic has been examined in surgical contexts (Koschmann, et al., 2007; Svensson, Heath & Luff, 2009) and in case conferences in hospitals (Ikeya & Okada, 2007), as well as in outpatient settings, including primary-care clinics (Pomerantz, 2003b; Pomerantz, Ende & Erickson, 1995) and dental clinics (Hindmarsh, 2010). Studies of interactions among medical professionals that occur outside surgical or training settings, such as those investigating medical decision-making (Atkinson, 1995), or the utilization of medical resources

(Boyd, 1998; Heritage, Boyd & Kleinman, 2001), comprise an additional branch of research within this stream.

Although this general overview groups publications in terms of the participants involved in the interactions under study, the settings within which they interact, and the social activities they accomplish, the last of these is the central analytic focus of the research within each stream (Heritage & Maynard, 2006c). This is because it is the participants' activities with one another—and the practices of action they use to accomplish them, as well as the sequences and individual turns of talk that comprise these practices—that allow social settings to become visible as, for example, ones where acute physical problems are under scrutiny or where medical training is being conducted. In addition, as the participants accomplish their activities, their social identities—for example, 'doctor,' 'patient,' 'trainee'—emerge as recognizable and consequential features of their encounters and the participants establish and ratify particular kinds of relationships with one another. In the following section we focus on CA studies within the first stream, physician-patient interaction, to provide some specific examples of what CA can reveal about the nature and range of the practices participants use to accomplish social activities during medical encounters, some of the interactional dilemmas and challenges they address as they do so, and the social ramifications of the different practices they use to address them.

3   Activities, Actions and Dilemmas in Doctor-Patient Interaction

Many primary- and specialty-care encounters between physicians and patients are organized around the twin tasks of diagnosing illness and recommending ways of managing or treating the illnesses patients are found to have. To accomplish these and other tasks, the participants typically move through a series of activity phases in a particular order: (i) *opening*; (ii) *problem presentation*; (iii) *history taking and physical examination*; (iv) *diagnosis*; (v) *treatment recommendation*; and (vi) *closing* (Heritage & Maynard, 2006b; see also Byrne & Long, 1976; Robinson, 2003; ten Have, 1989). Conversation analytic investigations have shown that these phases both afford interactional opportunities and pose constraints for participants, and that there are special issues, dilemmas and challenges that arise for both parties while accomplishing the tasks within each phase.

3.1   Problem presentations: balancing involvement and detachment

Doctors typically solicit patients' medical problems in the opening phase of clinic visits (see Heath, 1981; Robinson, 1998, 2006c). The problem presentation phase that follows offers patients one of the few opportunities they may have to present their problems on their own terms during the visit (Heritage & Robinson, 2006a).

Analyses of patients' problem presentations reveal that patients often treat the decision to seek medical care as one that could reflect upon their competence and credibility. In various ways, they convey their understanding that they were expected to engage in certain sense-making procedures and to have asked themselves the following questions before visiting a physician:

> Is this a potential health problem, or part of the everyday sensations, aches, etc., that come with having a body? Is this something I need to deal with, or something that will resolve itself? Should I consult a professional about this, or manage it myself? If I treat this, how should I? How long should I try to manage this before I go to a doctor, etc.? (Halkowski, 2006: 89)

Through their very presence in the physician's office, patients show that they have determined that their problems are worthy of medical care; however, once there, they risk the possibility that the doctor's examination will find otherwise. Patients face the dilemma of how to accommodate this contingency when they present their problems, lest they be perceived to be overly concerned about their health, with all that implies about their credibility as witnesses to their own bodily states (Heritage & Robinson, 2006a).

One way patients handle this is to underscore during the problem presentation that they have a legitimate reason for visiting the doctor. For example, patients may report that they are experiencing a recurrence of a previously-diagnosed illness, thereby proposing that their current bout with the illness is also worthy of the doctor's attention—namely that it is a "doctorable" problem (Heritage & Robinson, 2006a: 58). In the following extract from the opening phase of an acute primary-care interaction, the patient presents such a report (lines 2–3) and then notes that the present doctor had given her a prescription for the problem (line 10):

(1) Eczema (Heritage & Robinson, 2006a: 52)

```
1    Doc:  .hhh So what's goin' o:n today. what brings you i:[n.
2    Pat:                                                     [Well-I
3          have this li̲p thing aga̲in:,=
4    Doc:  =Aga̲:in. [Huh?
5    Pat:          [Yes:[:
6    Doc:               [>When was< thuh las' time we
7          s[a̲w you (.) for that.
8    Pat:   [M:a̲rch.
9    Doc:  (in M:arch.)
10   Pat:  An' you ga̲ve me thi:s. er- prescri̲bed me this:.
```

Patients may also describe their futile efforts to treat their problems on their own, suggesting that professional help is warranted (Heritage & Robinson, 2006a). These practices for justifying the visit are frequently accompanied by claims that third parties have urged them to seek care. By making these claims, patients suggest that the responsibility for making the medical appointment is not theirs

alone, "potentially reducing the reputational costs of a visit held to be inappropriate" (Heritage & Robinson, 2006a:71).

Achieving a culturally appropriate balance between involvement and detachment, so as to be perceived as a reasonable, credible patient, has been identified as a central issue for patients; Halkowski (2006: 89) calls it *the patient's problem*. The following extract from a primary-care visit shows a patient addressing this issue by using a narrative. The patient has severe abdominal pain, for which she had previously consulted another doctor (here referred to as "Marion", line 3). She structures her problem presentation as a "sequence of noticings" about potential symptoms (Halkowski, 2006: 88)—events that eventually led her to be concerned enough to seek medical care.

(2) SSMC 3.5 (Halkowski, 2006: 101)

```
1    Doc:  When did it initially start.
2    Pat:  ahhh (.) it started two weeks before I saw
3          Marion.
4    Doc:  mm hmm,
5    Pat:  I noticed I would have this pressured feeling in
6          the bottom of my stomach.
7    Doc:  m hmm
8    Pat:  and then one day I went to the bathroom and it
9          just literally set me on fire to use the
10         bathroom like I had bathed myself in antiseptic
11         or something
12   Doc:  mm [hmm,
13   Pat:     [cause it was burning just that bad. (.hh) an
14         it did that one day and then it didn't do it
15         again (0.5) then thuh next thing I notice I go
16         to thuh bathroom to use thuh bathroom to urinate
17         and (0.2) I'm spotting blood.
18         (1.2)
19   Pat:  so then I f:igured it was time to call (0.2) the
20         doctor to get in to see an appoint- to have an
21         appointment that's when I went to see her. (0.8)
22         when I started spotting.
23   Doc:  Alright, (3.4) ((cough)) Now today (.) you are
24         having symptoms of what now.
```

As Halkowski (2006) observes, the patient first highlights the fact that she tried to deal with the problem on her own before going to see the other doctor. She then reports a series of things she "noticed" before visiting that doctor: "this pressured feeling in the bottom of my stomach" (lines 5–6), "it just literally set me on fire to use the bathroom like I had bathed myself in antiseptic or something" (lines 8–11), and "I go to the thuh bathroom to use thuh bathroom to urinate and (0.2) I'm spotting blood." (lines 15–17). As the patient reports these facts about her body, she paints a picture of a problem that was not only out of the ordinary but had gotten progressively worse. She presents the upshot in lines 19–21: "so then I

f:igured it was time to call (0.2) the doctor . . . " The doctor facilitates this narrative by producing continuers at lines 4, 7 and 12, and by remaining silent at line 18.

Through this narrative, the patient presents her problem as worthy of the doctor's attention. However, she also conveys that she is not hyper-vigilant: by saying she "noticed" these things, she suggests that she was not hunting for symptoms; rather, they simply happened to her. She simultaneously reveals her orientation to "the patient's problem" and manages it by presenting her problem in a way that casts her as appropriately, but not overly, concerned about her health (Halkowski, 2006).

By focusing on *how* patients manage their problem presentations, this and other CA studies have shown patients' orientation to the moral implications of visiting physicians. As patients present their problems to physicians, they make use of phase-specific opportunities to address potential moral vulnerabilities that, in certain cultures, accompany seeking help for sickness (Heritage & Robinson, 2006a), and they invite physicians to treat them as responsible, reasonable and trustworthy parties in the medical encounter.

3.2   Diagnosing illness: patients' contributions to sense-making in the context of medical inquiry

Patients often come to medical encounters with ideas about what is, or is not, causing their symptoms to occur. In the types of outpatient encounters where the central tasks are diagnosing and recommending treatment for illness, patients face the issue of where to present their own interpretations of their problems, and how to do so while displaying attentiveness to the fact that they are laypeople who are seeking the advice of medical experts, and that doctors must gather information via questions and physical exams (and perhaps diagnostic tests) before they can confirm candidate explanations for illness.

One way patients address this is by waiting until their doctors have delivered their diagnoses and, if they disagree, reporting "negative observations," symptoms that are inconsistent with doctors' interpretations (Peräkylä, 2002: 232). By virtue of their placement after the diagnoses, these reports are hearable as evidence against them. However, they are not overt disagreements; rather, they are simply facts that call the diagnoses into question. In this way, patients marshal an epistemic resource that is theirs alone—their own experience of how they feel—in a particular sequential location in the encounter, to express reservations about doctors' diagnoses and prompt reconsideration, yet without overtly disagreeing or challenging doctors' authority to diagnose illness (Peräkylä, 2002, 2006; see also Gill, 1998; Gill & Maynard, 2006). This practice routinely delays the progression of the medical visit, as physicians respond by questioning and sometimes re-examining patients rather than moving directly to the treatment recommendation phase.

Patients may also offer their own interpretations of illness in environments *prior* to the diagnosis, where doctors can take them into account as they test diagnostic hypotheses and where they may potentially affect the trajectory of medical inquiry.

The structure of medical interviews makes this possible. Beginning in the opening phase of the encounter where physicians solicit patients' problems, through completion of the physical examination, the main tasks of diagnostically-focused medical encounters are: (i) gathering information about patients' problems by, for example, asking symptom-related questions; and (ii) testing hypotheses, through questions and physical examination. These phases provide interactional environments for patients to not only describe their problems, but also to advance diagnostic interpretations of their own (Gill, 1998; Gill, Halkowski & Roberts, 2001; Gill & Maynard, 2006) and to work to pre-emptively rule out potential diagnoses (Gill, Pomerantz & Denvir, 2010; Pomerantz, Gill & Denvir, 2007) in both tacit and forthright ways.

However, positioning candidate explanations prior to the diagnosis engenders a dilemma of its own, in that patients may be heard to be prematurely soliciting diagnoses of their problems. Patients' attention to this dilemma is observable in a key feature of their candidate explanations for illness: although they may invite (or work to preclude) further investigation into potential causal factors, they do not necessarily call for physicians to provide immediate *assessments*—that is, to say whether they are correct or incorrect (Gill, 1998; Gill & Maynard, 2006). They may provide doctors with a range of response-options beyond assessment, such as continuing to gather information about symptoms (an option doctors often take). As a result, patients may receive no overt indication of whether doctors have taken their explanations into account or not (Gill, 1998; Gill & Maynard, 2006), and they may then engage in further efforts to determine where physicians are heading with their questions, efforts that may or may not be successful (see, for example, Gill, Pomerantz & Denvir, 2010: 11–14). Their impact (if any) on doctors' interpretations of their problems may remain opaque. However, this is a function of what *both* participants do.

In addition to advancing or pre-empting exploration of particular causal factors to steer or sway doctors' diagnostic interpretations, patients' candidate explanations may do additional work when designed in particular ways. For example, in the following extract from a follow-up visit to a primary-care physician (Extract 3), a patient offers a candidate explanation in a way that invites the doctor to ask her about the current relevance of the candidate causal factor she presents, "stress." The physician is in the midst of gathering information about the patient's ongoing problem with chest pain. Cardiology tests had ruled out heart disease but the patient still has symptoms. The physician asks the patient to confirm that the chest pain occurs with "exercise" and "other activities", and that it wakes her up at night (lines 1, 3, 7–8). The patient responds affirmatively to all three questions. During the ensuing silence (line 10), the physician writes in the patient's chart, providing the patient with the opportunity to continue on the topic of what causes her chest pain to occur. She offers a *speculative candidate explanation* (Gill, 1998: 346) concerning the possibility that "stress" could have brought it on (lines 11–12). Her intonation and the way she formulates this utterance make it clear that she is speculating about the potential impact of stress, rather than asking a question about what the doctor 'knows.'

(3) 6:383 (Gill & Maynard, 2006: 138)

```
 1   Dr:   An so tha:t (.) came on with the exerci:[se
 2   Pt:
                                                 [M hm?
 3   Dr:   An- with other activities that you've do[ne.
 4   Pt:
                                                   [M hm?
 5   Dr:   °Oka:y:°
 6         (0.5)
 7   Dr:   .hh (2.5) An in addition sometimes you wake at
 8         nigh:(.)[t wi]th that.
 9   Pt:           [M hm]
10         (3.5) ((Dr. is writing in file))
11   Pt:   An I was wondering if: you know °stress could a (.) brought
12         that on too.°
13         (2.0) ((Dr. is writing in file))
14   Dr:   °Are you feelin: stressed?°
15         (1.0) ((Dr. is writing in file))
16   Pt:   U::m (.) I'm been going through some problems with my: (.)
17         so:n who's now eighteen.
```

This speculation alerts the doctor to a possible cause for the chest pain, one that they have not yet explored. However, by speculating about the potential impact of a *hypothetical condition* (stress), she also invites the doctor to ask her about the relevance of this candidate causal factor in her life. The doctor responds, "°Are you feelin: stressed?°" (line 14). This response provides the patient with an opportunity to report a stressful family problem, something that might otherwise have been difficult to bring up during the visit, and then to discuss the matter (in lines 16–17, and in further talk not shown here) (Gill & Maynard, 2006).

These studies show that diagnostic sense-making in medicine is more than a cognitive, unilateral matter where physicians make sense of patients' problems:

> It is accomplished in and through the participants' collaborative engagement in an array of actions, such as soliciting and providing information, which figure in broader activities such as testing diagnostic hypotheses. The ways in which these actions are performed can shape what information emerges in the visit, when it emerges and how it emerges, all of which has implications for what can be discovered about the symptoms in question. (Gill, Pomerantz & Denvir 2010: 2)

From these and other investigations also emerges a more nuanced picture of patient agency than has been painted by scholars in the critical tradition who have regarded the medical encounter as inherently asymmetrical, and patients, by virtue of their social position, to be powerless and lacking the resources to exert influence in the medical encounter (e.g. Fisher, 1988; Freidson, 1970; Mishler, 1984; Todd, 1989; Waitzkin, 1991; for a review see Lupton, 2003). CA studies of physician-patient interaction document the considerable work patients do to be taken as credible, reasonable and competent witnesses of their own bodies and life circum-

stances, as well as the practices they use to introduce their own perspectives into medical encounters while attending to the opportunities and constraints posed by the organization of medical inquiry. As noted earlier in the chapter, when asymmetries are apparent in these encounters, they are seen to emerge from what patients and physicians do with one another—practices of action that are concrete, systematic and empirically specifiable (see, e.g. Gill, 1998; Maynard, 1991; Peräkylä, 2002; Roberts, 2000; Robinson, 2001a).

3.3 Treatment recommendations: formulating, justifying and resisting proposals

In the health communication literature, physicians' recommendations for treatment have often been viewed as an outcome variable, given public health concerns about both under- and over-treatment (e.g. Schulman, et al., 1999). The goal has been to understand the impact of factors such as physician bias and patient preferences on treatment patterns. Conversation analysts have taken a different approach, one that seeks to understand the interactional processes through which treatment recommendations are presented, justified, negotiated, accepted, rejected, and so forth (Costello & Roberts, 2001; Koenig, 2011; Roberts, 1999, 2002; Robinson, 2001a; Stivers, 2002a, 2002b, 2005b, 2005c, 2006, 2007b). From this vantage point, treatment recommendations cannot be attributed to one participant or any one moment in a medical encounter; the full interactional landscape must be examined (Roberts, 1999).

It is clear that clinic visits present the participants with several environments for establishing that treatment is relevant or justified, and that patients (and their representatives, such as parents) may actively participate in this work. In pediatric encounters, for example, parents may establish the relevance of antibiotics as a mode of treatment early in the visit, in the problem-presentation phase. Thus, while explicit requests for antibiotics are relatively rare (Stivers, 2002a), parents work to establish the potential relevance of antibiotic treatment via other methods, such as suggesting that their children have illnesses of the type that are typically treated with antibiotics (e.g. an ear infection) or by including *diagnosis-implicative symptoms* (e.g. green nasal discharge) in their symptom descriptions (Stivers, 2002b: 312, 2007b).

In cases where patients will require no treatment, physicians have ways of demonstrating that they recognize "the patient's problem" described above (Halkowski, 2006: 89) while preparing patients for 'no problem' diagnoses and the likelihood that no (or nonaggressive) treatments will be required. The physical examination provides doctors with an opportunity to address this via *online commentary*, descriptions or evaluations of what they are feeling, hearing or seeing during the exam (Heritage & Stivers, 1999; Stivers, 2007b). This practice, illustrated below, can indicate to patients (and co-present participants) whether or not there is some observable evidence of a problem.

(4) 305 (Stivers, 2007b: 159)

```
1    Doc:  Which ear's hurting or are both of them hurting.
2          (0.2)
3    Pat:  Thuh left one,
4   ·Doc:  °Okay.° This one looks perfect, .hh
5    Mo?:  (U[h:. ???)
6    Doc:     [An:d thuh right one, also loo:ks, (0.2) even more perfect.
```

Using online commentary, physicians can validate the concerns that led patients to make the office visit (if there is some evidence of a problem); yet such commentary can also forecast (and build a case for) 'no problem' diagnoses and associated nonaggressive treatment via the inclusion of facts that can serve to justify those outcomes (Heritage & Stivers, 1999: 1505; see also Maynard, 1996). Because doctors obtain this evidence through the use of medical instruments such as otoscopes, patients/parents may find it difficult to mount a challenge (Heritage & Stivers, 1999; Stivers, 2007b). Stivers (2007b) has found that online commentary may help parents accept non-antibiotic treatment recommendations even in cases where they initially appeared to expect or desire antibiotics for their children. This echoes findings about how incremental approaches to news delivery can smooth the delivery of diagnostic news (Maynard, 2003).

Importantly, CA research has demonstrated that participants orient to treatment recommendations themselves as *proposals*, for which patients' assessments are relevant (Costello & Roberts, 2001; Stivers, 2006, 2007b) and for which justification is expected (Roberts, 1999). Acceptance of physician recommendations is not automatic; patients and their representatives can and do resist recommendations that may not suit their situations or correspond to their preferences. This has been demonstrated in a variety of settings, including primary-care adult medicine (Costello & Roberts, 2001), pediatrics (Stivers, 2006, 2007b), and oncology (Roberts, 1999). For example, in the following extract from an oncology visit, a patient openly disagrees with her oncologist that chemotherapy will be effective for someone her age:

(5) Roberts (1999: 95, simplified)

```
1    DR 4:  Regimens with Adriamycin in them are helpful
2           even in women . . . past their menopause.
3    PT 70: Well ih it they did say that it was not helpful. Eh tha-
4           such a small percentage was helpful.
```

This kind of active resistance tends to elicit efforts from physicians to convince patients (Roberts, 1999; Stivers, 2006), but those efforts can fail and reformulations and extended negotiation may occur. In the acute-care setting, actual reversals of recommendations are rare but nevertheless do happen (Stivers, 2006).

Patient resistance to physician recommendations can also be more subtle; counterproposals, delayed responses and weak forms of agreement can all affect the

form of the final treatment recommendation (Costello & Roberts, 2001). Consider the example below, which is from a primary-care encounter. The physician had previously recommended a half packet of cholestyramine three times a day to treat the patient's high cholesterol. In Extract (6) he suggests that the patient "work up to it." (line 1), but following the patient's silence (line 2), he downgrades his proposal by making it contingent upon the patient's ability to comply. At line 4, the patient offers a counterproposal—to take the medication less frequently, but to take a full pack at a time. This represents an increase in dosage from the physician's initial proposal (which amounted to 1.5 packs per day, total). The physician accepts the counterproposal (line 5).

(6) Costello & Roberts (2001: 253)

```
1    DR 1:  So: I think you should try to work up to it.
2           (0.5)
3    DR 1:  If you can.
4    PT 3:  .hh I'd rather do one packet twice uh day.
5    DR 1:  That's alright with me:
```

Although the increase in dosage is modest, and apparently acceptable from a medical standpoint, the outcome is nonetheless negotiated, indicating how treatment recommendations are oriented to as proposals rather than the final word on treatment.

CA research has shown that treatment recommendations are decidedly interactive, with both providers and patients demonstrating agency and contributing to the final formulation of a treatment plan. Physicians work to achieve patient/parent alignment with, and acceptance of, treatment decisions at various points in medical encounters, and they may pursue this "even to the point of offering (sometimes major) concessions" (Stivers, 2006: 311). This is not to say that consensus always emerges, but that all of the participants play a role in the outcome.

4 Future Directions in Medical CA

CA studies of medicine are valuable in their own right for their ability to illuminate social arrangements in medical settings and the interactional processes that produce them. However, echoing Frankel's (1983) initial impetus for bringing this approach to bear in medicine, recognition is growing that CA is a crucial resource for medical educators, practitioners and others whose aim is to improve the quality of medical care and relationships among participants in medical encounters. Because recordings and transcripts make it possible to focus in on the details of interactional sequences, subtle variations in behavior can be compared—for instance, different ways doctors solicit patients' presenting concerns, which can convey that they are more or less willing to listen, foster or preclude opportunities for patients to provide clinically-relevant information, and convey varying degrees

of credibility and professional competence (Robinson, 2006c). By viewing different questioning practices and their interactional ramifications, doctors can learn to more effectively facilitate patient participation in their own encounters, a crucial clinical skill (see Drew, Chatwin & Collins 2001). Similarly, CA studies of the simultaneous vocal and nonvocal activities of multiple parties make it possible to determine how medical technologies and delivery systems can be designed or reconfigured to provide better patient care, and how instruction in surgical (and other) contexts can be carried out most effectively. CA's ability to elucidate the organization of interactional processes and practices as they unfold over time is a key to understanding how social arrangements in medicine are constituted, and thus make it a key resource for enabling social change in the medical arena.

Additionally, CA can support research aimed at understanding the distribution of interactional practices and their correlation with various outcomes. Scholars have begun to use CA findings as an empirical foundation for quantitative studies about the frequency of interactional practices among different population sub-groups (e.g. Haakana, 2002; Stivers & Majid, 2007) and the relationship between practices and outcomes such as insurance companies' decisions to reimburse for medical procedures (Boyd, 1998), patients' satisfaction with physicians' communication skills (Robinson & Heritage, 2006), the likelihood that patients will leave clinic visits with unmet concerns (Heritage, et al., 2007), and physicians' prescribing decisions (Heritage et al, 2010; Mangione-Smith, et al., 2003). For example, having conducted CA investigations about how doctors' online commentary functions during medical clinic visits (Heritage & Stivers, 1999, discussed earlier in the chapter), Heritage and colleagues went on to investigate the relationship between online commentary and doctors' prescribing behavior in 522 pediatric encounters (Heritage, et al., 2010). They found that in cases where doctors reported during online commentary that physical problems were present but eventually diagnosed viral illness, doctors were likely to write prescriptions for antibiotics even though they are ineffective against viral infections. In light of these findings, the authors were able to recommend that doctors avoid reporting the presence of problems during online commentary in cases where viral illness is suspected, because it may raise parents' expectations that their children will receive antibiotics for viral illnesses.

Once researchers begin investigating statistical relationships between interactional practices and outcomes, they have moved beyond the aims and assumptions of Conversation Analysis. In other words, this type of inquiry does not represent a new type of CA. It is dependent upon CA research for operational definitions of the interactional practices that will be coded and counted (Heritage, 1999), but thereafter it addresses different types of research questions, involves different data-gathering techniques, and employs different modes of analysis. Granting agencies are particularly interested in funding studies that assess the probability that certain interactional practices are associated with desired outcomes, and such projects may ultimately work to CA's benefit if grantors recognize that CA investigations are integral to the quality and integrity of these types of quantitative studies.

Research is flourishing in all of the streams in medical CA, but there is still much to be explored. This includes, but is certainly not limited to, the organization of encounters centered on the management of common chronic conditions such as cardiovascular disease and obesity (see Webb, 2009). Similarly, longitudinal studies of the interactional landscape in cases where behavior change is paramount (such as weight management or exercise) could provide a better understanding of the interactional work that contributes to patient success over time. The relationship between medical interaction and the misuse of prescription opiates for pain management is also a key area for inquiry (see Roberts & Kramer, 2011); as this continues to be a significant public health problem, the interpersonal dynamics of the medical visits that produce prescriptions for these medications must be better understood. The rapid advancement in, and increasing use of, technologies such as electronic medical records calls for an expansion of how the newest tools figure into people's activities in various medical contexts (see Heath, Luff & Svensson, 2007), and further research on the multilayered and intersecting activities of medical teams and the real-time organization of medical service delivery can reveal how it can be more effectively configured (see Ikeya, 2009). Studies of participants' orientations to the moral/normative dimensions of health and illness and deployment of cultural resources outside Western and Anglo contexts would allow for comparisons with existing data from the United Kingdom, Scandinavia, Europe and the United States. And in general, an area for future growth in medical CA is the organization of medical interaction in the developing world, especially in Asia (see Zayts & Kang, 2010), in non-English speaking contexts and in multilingual settings.

Medical CA encompasses the study of social practices in many professional contexts, involving a variety of participants. In its 30 year history, this subfield has yielded insights about the kinds of recurring social dynamics and interactional patterns that are difficult, if not impossible, to access through other approaches, and that ultimately have profound consequences for peoples' personal and professional lives, the functioning of healthcare delivery systems, and the health of populations. As this work continues and as the interactionally-grounded insights of CA are combined with other forms of research, it will surely contribute to a better understanding of how many dimensions of health care can be improved.

NOTES

1   The depth and breadth—as well as the international scope—of this subfield can be seen in Paul ten Have's bibliography of ethnomethodological/conversation analytic publications in the field of medicine, psychotherapy, and related topics (http://www.paultenhave.nl/EMCA.htm). For reviews of medical CA, see Drew, Chatwin and Collins (2001); Halkowski and Gill (2010); Heritage and Maynard (2006b, 2006c); Maynard and Heritage (2005); and Pilnick, Hindmarsh and Gill (2009).
2   While Conversation Analysis itself is rooted in Sacks' investigations of data that could be considered medical in nature (telephone calls to mental health professionals in a suicide prevention center and recordings of group psychotherapy sessions in the 1960s), Sacks' primary concern was "how

ordinary activities get done methodically and reproducibly" (Schegloff, 1992a: xvii) rather than the institutionality of the encounters and how this was enacted by the participants (see ten Have, 2002b).

3 For example, see Heritage, et al. (2007) on the design of physicians' questions. Physicians often ask, "Is there *anything* else you want to address in the visit today?" to elicit additional concerns from patients in medical visits. In everyday conversation, the *any*-formulation conveys an expectation that the co-participant will say *No*, whereas the *some*-formulation anticipates a *Yes*. Heritage and colleagues found that when doctors used the *any*-formulation to elicit additional concerns, patients who had indicated on a pre-visit survey that they had multiple concerns oriented to this formulation as they would in everyday contexts: they were more likely to respond that they had no more concerns. However, patients who were asked, "Is there *something* else you want to address in the visit today?" were more likely to express additional concerns.

4 A number of researchers in medical CA have supplemented recordings with fieldwork; e.g. Christian Heath's studies of primary-care medical consultations began with nonparticipant observation "in order to begin to assemble a sense of the organization of certain specialized tasks such as diagnosis, treatment and using medical records" (Heath, 2004: 273).

5 Here we are restricting the review to human patients; the literature also includes studies of interaction during veterinary encounters (e.g. Roberts, 2004; Stivers, 1998).

6 This overview covers the streams of research in medical CA within which there is already a relatively large literature; one burgeoning area is lay-members' conversations with one another about medical matters, such as families' conversations with (and about) family members who are ill (Beach, 1996, 2009).

7 In the United States. this may include nurse practitioners, who can diagnose illness and write prescriptions.