

Conversation analysis, doctor–patient interaction and medical communication

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INTRODUCTION This paper introduces medical educators to the field of conversation analysis (CA) and its contributions to the understanding of the doctor–patient relationship.

THE CONVERSATION ANALYSIS APPROACH Conversation analysis attempts to build bridges both to the ethnographic and the coding and quantitative studies of medical interviews, but examines the medical interview as an arena of naturally occurring interaction. This implies distinctive orientations and issues regarding the analysis of doctor–patient interaction. We discuss the CA approach by highlighting 5 basic features that are important to the enterprise, briefly illustrating each issue with a point from research on the medical interview. These features of conversation analytic theory and method imply a systematic approach to the organisation in interaction that distinguishes it from studies that rely on anecdote, ethnographic inquiry or the systematic coding of utterances.

CONVERSATION ANALYSIS AND THE MEDICAL INTERVIEW We then highlight recent CA studies of the ‘phases’ of the internal medicine clinic and the implications of these studies for medical education. We conclude with suggestions for how to incorporate CA into the medical curriculum. It fits with biopsychosocial, patient-centred and relationship-centred approaches to teaching about medical communication.

KEYWORDS education, medical, undergraduate/ *methods; *physician–patient relations; interpersonal relations; communication; curriculum.

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INTRODUCTION

Since at least the pioneering studies of Frankel¹ and West,² scholars in the sociological discipline of conversation analysis (CA) have studied the medical encounter as an arena of *naturally occurring interaction*. As this phrase suggests, conversation analysts study interaction in general and the doctor–patient relationship in particular as a *co-construction* or collaborative enterprise, on its own terms and as it occurs in real time, rather than as something to be treated through various kinds of abstractions. One kind of abstraction includes accounts generated from observations and post hoc interviews about experiences in the medical interview, as in ethnographic or field studies. Another kind of abstraction is the use of codes that lock aspects of interaction into a set of predefined categories. A number of classic studies have developed this technique to a high degree of sophistication.

Although CA attempts to build bridges both to the ethnographic and the coding and quantitative studies of medical interviews, examining the medical interview as an arena of naturally occurring interaction implies 2 distinctive orientations. Firstly, it is important to capture the interview on audio or videotape so as to have a record for transcription and repeated hearing or viewing. Secondly, analysing the captured interaction in real time means examining how utterances and other behaviours of 1 participant affect another according to ongoing, temporally organised sequences of talk. That is, participants build social actions from vocal and non-vocal aspects

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Overview

What is already known on this subject

Conversation Analysis (CA) involves studying

- utterances as social activities
- sequencing
- interactional detail as a site of organisation
- analysis of participant orientations
- single cases and collections

Research on the medical interview using CA is sparse although there is a recent increase.

What this study adds

Review of recent CA research on the medical interview including: Studies of the various 'phases' of the interview from its opening to its closing and including the history, physical exam, diagnosis, and treatment recommendations.

Suggestions for further research

Additional CA studies of internal medicine and specialty clinics continue to capture doctor–patient communication as a co-constructive or collaborative accomplishment. This will contribute to clinical medical and educational concerns with patient-centred biopsychosocial, and relationship-centred care.

of behaviour through relating those aspects in seriality – first 1 utterance or gesture, then another that systematically takes the first into account, and so on. We discuss the CA approach below in more detail, and then highlight recent CA studies of the internal medicine clinic and their implications for medical education.

A BRIEF INTRODUCTION TO CONVERSATION ANALYSIS: 5 BASIC ISSUES

Utterances as social activities

In an early lecture, Harvey Sacks,³ as the founder of CA, proposed that the most banal and familiar

conversational utterances are social objects that *accomplish* actions and activities without necessarily formulating them as such. Accordingly, CA represents the attempt to describe and analyse a host of ordinary activities – informing, criticising, insulting, complaining, giving advice, describing, requesting, apologising, joking, greeting, and many more. These activities are rarely formulated by their initiators in so many words: we do not say, 'This is a greeting: Hello!' We simply say, 'Hello.' Nor does the syntactic structure of an utterance often convey its force as an action. For example, we use interrogative forms to align with a speaker's talk ('Oh, isn't he dreadful?'), we use declarative forms to make requests ('It's cold in here'), and we use imperatives to invite ('Come in'). In the medical interview, patients may perform the activity of asking the doctor for an explanation of medical symptoms through *declarative utterances*: 'My stools lately have seemed dark, and I'm wondering if that's because I did start taking the vitamins with iron too, and I'm wondering if the iron in those vitamins could be doing it.' As *social actions*, however, Gill⁴ calls these 'speculative explanations' – they tacitly ask the doctor to confirm or disconfirm what the patient proposes to be the reason for a particular condition.

Sequencing

The production and understanding of an utterance as an action derives from *features of the social context*, most especially an utterance's place in an organised sequence of talk. Conversation sequencing was explored in early papers on turn-taking⁵ and the organisation of adjacency pairs – turns of talk like questions and answers, or recommendations and acceptance/rejection that are 2 utterances long and have other regular characteristics.⁶ To start analysis with a focus on turn-taking and adjacency pairs translates in the medical context into a concern with everything from 'how are you' questions and their replies, to history taking questions and answers, to diagnostic announcements and their receipts, to treatment proposals and their acceptance or rejection, and to many other kinds of sequences.

Any participant's communicative action is doubly contextual. Firstly, the action is *context-shaped*. Its contribution to a mutual understanding derives in part from the immediately preceding utterance or set of activities in which it occurs. In the medical interview, the phase of the encounter in which a sequence appears helps to configure its meaning. A terse diagnostic pronouncement can be heard as

such by virtue of its placement in the physical examination portion of the encounter.^{7,8} Secondly, conversational actions are *context-renewing*. Every current utterance will itself form the primary framework for some next action in a sequence. When a diagnosis has been pronounced and received, it occasions the relevance of a treatment proposal. In this sense, the context of a next action is inevitably renewed with each current action. Moreover, sequencing functions to recondition (i.e. maintain, adjust or alter) any broader or more generally prevailing sense of context which is the object of the participants' orientations and actions. That is, the doubly contextual quality of utterances contributes to the larger interactional environment or overall activity (such as the medical interview) within which these utterances make their step-by-step appearance.

Interactional detail as a site of order and organisation

Research in CA has shown that interaction is deeply orderly everywhere. As Zimmerman⁹ puts it: 'No scale of detail, however fine, is exempt from interactional organisation, and hence must be presumed to be orderly.' This implies an interest not just in what participants say, but also in silences, in overlapping talk, in sound stretches, breathing and so on. Hence, conversation analysts transcribe tape-recordings to show as many of these features as possible in orthographic form, although the recordings themselves are the ultimate resource for analysis. In the medical interview, being able to track silences, overlapping talk, and other conversational features is extremely important. Through silence, immediate (overlapping) questioning, refusing to engage in responsive laughter, and in other ways, patients may resist the recommendations of a family doctor who diagnoses viral conditions and recommends against antibiotics for their children. Such resistance may occasion the doctor's reversal of recommendation.¹⁰

Grounding analysis in participant orientations

An important methodological consequence flows from the concern with sequencing, actions and details. As a feature of a turn of talk in conversation, a current speaker will display an understanding of the talk in previous turns.⁵ Hence, speakers can look to the next turn after their own to find an analysis of what they have just said. If the displayed understanding in that next turn does not align with the speaker's own, then the *next* turn of the speaker can be devoted to correcting the matter. By and large, *repair* of all kinds of conversational trouble exhibits sequentially systematic properties,¹¹ which means

that conversation has in-built procedures for its maintenance as a mechanism of social action and interaction. This is *local determination*, whereby participants manage the course of conversational interaction on a turn-by-turn basis, and because of the requirement that participants display their understanding on this local, turn-by-turn basis, analysts have a 'proof criterion' and a 'search procedure' for the analysis of any given turn: see how recipients construct their knowledge of it. In the medical interview, to characterise a given utterance, an analyst would draw on what sort of comprehension its recipient exhibits. With regard to doctors' opening questions in the medical interview, particular designs result in answering patterns whereby patients show their understanding of whether the doctor's question is asking about a new difficulty, an acute problem for which the patient has been seen before, or a recurrent and chronic difficulty.¹²

Single cases and collections

The CA perspective aims to develop claims about systematic structural organisation in interaction. Such claims are supported by substantial accumulations of instances of a practice, each instance of which the investigator examines as an individual 'case.' In the medical interview, investigators examine collections of openings, explanations, physical examinations, diagnostic announcements or other sequences. Particularly important is examining departures from an interactional regularity, or what is known as 'deviant case analysis', which allows researchers to validate empirical findings and discern larger patterns in which a practice helps achieve particular social actions. For example, in a study of diagnostic news about HIV infection, Maynard¹³ found a practice contrary to patterns documented in a variety of health care settings,¹⁴⁻¹⁶ where clinicians overwhelmingly work to shroud bad news and expose good news. In the HIV clinic, counsellors often delivered the bad news of being HIV-positive as forthrightly as they presented the good news of HIV-negative status. In other words, rather than shrouding the bad news, they exposed it. Examining these deviant cases revealed that the counsellors were attempting to 'crack the emotional nut' – the often stoic way in which clients would receive bad news about HIV infection. The tactic was consistent with the otherwise predominant pattern of shrouding the news because, while it was meant to prompt the discussion of 'dreaded issues'^{7,17} associated with HIV and AIDS, it was also designed to facilitate the flow of interaction between counsellor and client.

These features of conversation analytic theory and method imply a systematic approach to the organisation in interaction that distinguishes it from studies that rely on educated intuition, theorising, ethnographic inquiry and the systematic coding of utterances. However, CA inquiries often make use of intuition, theory, ethnography and coding, depending on the study, the phenomenon of interest, the requirements of analysis and the disciplined ways in which CA can be related to these other resources. The above-mentioned CA study of bad and good news¹³ has a 'limited affinity' with ethnography. As well, CA investigations of paediatric interactions involving patients who present with upper respiratory tract infections^{18,19} have resulted in quantitative studies that show how various actions by patients are associated with the perception of demand for antibiotics and inappropriate prescribing.²⁰ These studies also aim to identify communicative resources that doctors can deploy to resist such adverse outcomes.²¹

CONVERSATION ANALYSIS RESEARCH ON THE MEDICAL INTERVIEW

Basic CA ideas have been given form and substance in a large array of empirical studies concerned with turn-taking, achieving understanding, repairing misunderstanding, opening and closing interactions, story telling and a host of other activities.^{22–24} Two conclusions are to be drawn about the application of these findings to the medical interview. Firstly, interactional practices through which persons conduct themselves elsewhere are transported from the everyday world into the doctor's office. Accordingly, studies of the medical interview draw upon the plenitude of previous CA research concerned with ordinary conversation. For example, practices for describing a problem or trouble,²⁵ or for telling good or bad news,¹³ are carried across the threshold of the doctor's office and affect how doctors and patients go about addressing particular interactional tasks. Secondly, the organisation of interaction is fundamentally geared to the joint management of self–other relations. Thus, in a study of relations between residents and their preceptors (supervisors) in a primary care clinic at a teaching hospital, Pomerantz *et al.*²⁶ show that preceptors correct interns' errors in 'soft' or modulated ways that avoid exposing their errors. This is very much related to how repair works in ordinary conversation, where there is a 'preference' for speakers of error to correct themselves. In addition, doctors regard correcting others 'as a potential threat to a sense of competency of those

they correct'.²⁶ Issues of interaction order and the management of social relations emerge repeatedly in CA studies of doctor–patient interaction, and are profoundly related to communicative practices in the clinic.

The most current CA studies of doctor–patient interaction are assembled in a book we have published called *Communication in Medical Care: Interactions between Primary Care Physicians and Patients*.²⁷ Following Byrne and Long's²⁸ classic study, it examines the primary care medical interview in terms of its constituent phases. Because of its very recent publication, and because we do not have the space to reference other research, we will summarise the chapters in this volume to illustrate the implications of CA for medical education.

Our tack is that doctors and patients face many sociomedical dilemmas in talking to one another. One such dilemma begins with the effort to frame what kind of medical visit they are to embark upon. In Chapter 2, Robinson (as mentioned above) shows that a doctor's initial turn of talk is designed differently according to whether the patient is present for a new problem ('How can I help you today?'), a follow-up visit ('How are you feeling?'), or a routine visit for a chronic condition ('What's new?'). Patients, Robinson shows, are sensitive to these designs and will 'correct' or otherwise address solicitations that are inappropriate for their concerns. An implication is that doctors can learn how their practices for soliciting concerns and problems have consequences for patients' perceptions of doctors' competence and credibility. Such practices, accordingly, further affect patient satisfaction and adherence to proposed treatment regimens.

Once launched into the visit, an immediate matter is problem presentation. In Chapter 3, Heritage and Robinson argue that patients are concerned not only with describing the details of illness, but also with justifying and legitimating their decisions to seek medical attention – the *doctorability* of their problems. Related to doctorability is the phenomenon that Halkowski (Chapter 4) addresses in his analysis of *discovery accounts*, whereby patients describe how their symptoms have accumulated to the point where they require a visit to the doctor. In giving these accounts, patients navigate a difficult empirical and moral terrain, striving to show that they are neither overly preoccupied with bodily conditions and health concerns, nor excessively lax and cavalier about them. Together, these chapters suggest that problem

presentation is, in some ways, the most crucial phase of the encounter. As they discuss reasons for the visit, it is important for doctors to understand patients' moral concerns of doctorability and health-monitoring competence.

When presenting their problems and symptoms to the doctor, patients may introduce their own explanations of illness for doctors to confirm or disconfirm (Gill and Maynard, Chapter 5). Patients do so usually in tentative and inexplicit ways because, although from their point of view it is appropriate to offer their own explanations, they recognise that the timing of such offerings may not be precisely right. Indeed, if doctors have not completed their gathering of information (including the physical examination), they can be reluctant to produce an authoritative response, especially as patients only tentatively offer explanations in the first place. A problem, accordingly, is that the patient's explanation may become lost in the course of the medical visit, and may never be addressed later during the delivery of diagnosis and treatment recommendations. An implication for medical education is that doctors may want to at least mark their hearing of a patient's explanation when it emerges, even if it would be premature to evaluate that explanation then and there. Doctors can return and respond to the explanation at a later point, and let the patient know that they will do so.

Doctor questioning during the history phase is a topic that Boyd and Heritage investigate in Chapter 6, describing 3 main aspects: agenda setting, pre-supposition, and preference structure. Preference structure is not about doctors' psychological predispositions, but about how their questions exhibit 2 principles. *Optimisation* refers to the design of questions in ways that favour or encourage 'best case' responses. *Recipient design* is the requirement that questions be tailored to the particular circumstances of the patient. These 2 principles in operation may contribute empirical substance to Cassell's²⁹ suggestion that medical questioning, rather than involving a 1-way provision of information by the patient to the doctor, is an *exchange* between the 2 parties. It may pay doctors to be aware that, while giving information in response to questions, patients also track the structure of these questions and thereby learn implicitly the provider's expectations and beliefs about their conditions.

Another dilemma lies in the physical examination, as Heath demonstrates in Chapter 7. The patient must

present his or her body as an objectified field for the doctor's inspection, examination and manipulation. At the same time, the patient remains a 'subject', an agent with feelings and sensations as well as body parts. Heath's chapter explores the means by which the practitioner, through the ways in which he or she looks at and handles the patient, can treat the body as an object while continuing to orient to the patient as a person.

Two chapters in the book deal with conveyance of diagnosis. Peräkylä (Chapter 8) argues that this conveyance represents the moment at which the doctor's authority over the patient is maximised, but that this authority is routinely tempered by *accountability*. Both parties, in a variety of ways, address the evidential basis of the diagnosis. The import for doctor training is that doctors can learn practices for mitigating the appearance of authoritarian pronouncements. Uncertainty in diagnosis is thematised in Maynard and Frankel's Chapter 9 on diagnosis, which includes a discussion of the strong interactional asymmetries in the delivery and receipt of good as opposed to bad news. The theme of uncertainty emerges in the authors' discussions of how bad diagnostic news represents a rupture in rationality (posing problems of emotion management and patient recognition or *realisation* of a disease and its prognosis), and paradoxically how good news can also be a source of difficulty. This is because of the problem of unexplained symptoms or what the authors term 'symptom residue.' Maynard and Frankel propose that, just as medical educators have advocated for research and training on delivering bad news, the delivery of good news and uncertainty demand similar attention.

Yet another pair of chapters deal with treatment recommendations. In Chapter 10, Stivers, focusing on upper respiratory infections, reports that, while patients' responses to diagnostic news tend to be minimal, responses to treatment recommendations are substantive, involving acceptance or rejection. Rather than overtly rejecting a recommendation they do not like, however, patients or family members may *resist*, either passively or actively. Of relevance to the medical educator is how, when feeling pressured to prescribe inappropriately, doctors who make overt and positive recommendations of non-prescription medications (rather than offering no treatment at all), may reduce patient resistance. Patients perceive that such recommendations show the doctor's understanding that the medical visit was justified. In Chapter 11, on prescribing, Greatbatch analyses the

use of computer technology, which poses significant problems of co-ordination between communicating with the patient and working with computers and the requirements of software.

'Lifestyle' questions (smoking, alcohol consumption, etc.) are the subject of Chapter 12. Sorjonen and colleagues, studying Finnish medical encounters, underline the idea that medical interactions contain a more or less explicit moral element. A central feature of question–answer sequences that deal with the patient's lifestyle is their normative orientation. Although doctors design their questions so as to display a neutral stance toward the lifestyle matter at issue, patients often display an orientation to a normative priority of certain habits, and this affects how they answer. Sorjonen *et al.* suggest that doctors learn to use patients' own metrics of involvement in discredited behaviours, both to evaluate lifestyle concerns and to fashion advice about these concerns.

At the close of the medical visit, West (Chapter 13) finds that doctors and patients conclude the visits using the common stock of resources for closing many kinds of encounters. There are preclosing moves, which may invite, while discouraging, new and previously unmentioned topics, and there are arrangements for tests and next visits, practices that are valuable in evoking a standing relationship between doctor and patient and achieving what is known as continuity of care.

In the final chapter of the volume, Drew considers telephone calls to the doctor. His research contributes to an understanding of how doctors must evaluate the legitimacy of patient complaints and requests. Discrepancies of judgement, with the doctor functioning without direct access to the patient, create conversations in which the normality or abnormality of symptoms described by callers is a salient issue. Each party – caller and doctor – regularly resists the other's apparent assessment of the seriousness or urgency of the ailment/condition that prompted the call. An issue for medical education is how doctors can walk the line between treating serious conditions and preventing unneeded urgent care visits.

CONVERSATION ANALYSIS, COMMUNICATION AND MEDICAL EDUCATION

A central question on this theme concerns how conversation analysis might be used in medical

education. One possibility is to incorporate conversation analytic studies into the part of the curriculum that deals with talking to patients. Some medical educators are already using the chapters making up *Communication in Medical Care: Interactions between Primary Care Physicians and Patients* or other recent CA studies on the medical interview to introduce students to the perspective and to specific empirical findings. This is particularly effective when medical educators who have learned CA in their graduate training, in workshops, or at professional meetings allow students to record their interviews with patients, and then bring the recordings to the CA-informed educator for review. During such reviews, the educator and student both look or listen for critical junctures, and can examine what is happening sequentially or on a turn-by-turn basis that may have gone well or badly for 1 or both participants in the interview.

Conversation analysis-informed reviews are often possible when students are in faculty-supervised small groups practising with actors who play patient roles.³⁰ The review of recordings also is carried out on a 1 : 1 basis with students' tapes of their actual primary care encounters. Dr Timothy Halkowski, a conversation analyst in the Department of Family Medicine at the University of Wisconsin, works with medical students by asking them to identify, in their tapes, any points that they find to be interesting or confusing. Among other things they do, as per his own Chapter 4 in *Communication in Medical Care*, is to explore the opening minutes of the encounter to see how patients present themselves as 'appropriately' seeking care, or how the issue of what Heritage and Robinson (Chapter 3) call 'doctorability' is handled. To further elucidate problematic moments in the medical interview tapes, Halkowski also uses chapters and data segments from 'Communication in Medical Care'. He finds, for example, that the problem of 'symptom residue' discussed in Maynard and Frankel's chapter on diagnosis, is massively present in primary care medicine.

Additional CA studies in a variety of clinics, such as oncology, diabetes and paediatrics, and the CA approach in general, depart from previous education-oriented research in a very particular and important way. Where investigators have concentrated on the conduct of doctors separately from that of patients,^{31,32} the co-constructive and collaborative analytic approach of CA emphasises the conduct of *both* parties as they interact with each other in real time. Together, doctor and patient assemble each specific visit with its interactional textures, perceived features, and satisfactory or unsatisfactory outcomes. Analysing

co-construction is a direct research embodiment of *patient-centredness*³³ and it facilitates the *biopsychosocial approach* to the interview,³⁴ as well as a more recent emphasis on *relationship-centred care*.^{35,36} Conversation analysis research and teaching, that is, includes both doctors and patients within the nexus of communication through which medicine is practised. As Cassell³⁷ has remarked, 'Doctors must work at tools for analysing communication with patients in order to assume partnership in understanding disease.' The conversation analytic approach and research tradition, we believe, is such a tool.

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REFERENCES

- 1 Frankel R. From sentence to sequence: understanding the medical encounter through microinteractional analysis. *Discourse Processes* 1984;**7**:135–70.
- 2 West C. *Routine Complications. Troubles with Talk between Doctors and Patients*. Bloomington, Indiana: Indiana University Press 1984.
- 3 Sacks H. *Lectures on Conversation. Vol. 1. Fall 1964–Spring 1968*. Oxford: Basil Blackwell 1992.
- 4 Gill VT. Doing attributions in medical interaction: patients' explanations for illness and doctors' responses. *Social Psychol Q* 1998;**61**:342–60.
- 5 Sacks H, Schegloff EA, Jefferson G. A simplest systematics for the organisation of turn-taking for conversation. *Language* 1974;**50**:696–735.
- 6 Schegloff EA, Sacks H. Opening up closings. *Semiotica* 1973;**8**:289–327.
- 7 Peräkylä A. Authority and accountability: the delivery of diagnosis in primary health care. *Social Psychol Q* 1998;**61**:301–20.
- 8 Heath C. Diagnosis and assessment in the medical consultation. In: Drew P, Heritage J, eds. *Talk at Work: Interaction in Institutional Settings*. Cambridge: Cambridge University Press 1992;235–67.
- 9 Zimmerman DH. On conversation: the conversation analytic perspective. In: *Communication Yearbook II*. Newbury Park, California: Sage Publications 1988;406–32.
- 10 Stivers T. Participating in decisions about treatment: overt parent pressure for antibiotic medication in paediatric encounters. *Soc Sci Med* 2002;**54**:1111–30.
- 11 Schegloff EA, Jefferson G, Sacks H. The preference for self-correction in the organisation of repair in conversation. *Language* 1977;**53**:361–82.
- 12 Robinson J. Soliciting patients' presenting concerns. In: Heritage J, Maynard DW, eds. *Communication in Medical Care: Interactions between Primary Care Physicians and Patients*. Cambridge: Cambridge University Press 2005.
- 13 Maynard DW. *Bad News. Good News: Conversational Order in Everyday Talk and Clinical Settings*. Chicago: University of Chicago Press 2003.
- 14 Heritage J, Stivers T. Online commentary in acute medical visits: a method shaping patient expectations. *Soc Sci Med* 1999;**49**:1501–17.
- 15 Leppänen V. *Structures of District Nurse–Patient Interaction*. Lund, Sweden: Department of Sociology, Lund University 1998.
- 16 Stivers T. Pre-diagnostic commentary in veterinarian–client interaction. *Res Language Soc Interact* 1998;**31**:241–77.
- 17 Bor R, Miller R. Addressing 'Dreaded Issues': a description of a unique counselling intervention with patients with AIDS/HIV. *Counselling Psychol Q* 1988;**1**:397–405.
- 18 Stivers T. 'Symptoms Only' and 'Candidate Diagnoses': presenting the problem in paediatric encounters. *Health Comm* 2002;**14**:299–338.
- 19 Heritage J, Stivers T. Online commentary in acute medical visits: a method shaping patient expectations. *Sociol Health Illness* 1999;**49**:1501–17.
- 20 Mangione-Smith R, McGlynn E, Elliot M, Krogstad P, Brook R. The relationship between perceived parental expectations and paediatrician antimicrobial prescribing behaviour. *Pediatrics* 1997;**103**:711–8.
- 21 Mangione-Smith R, Stivers T, Elliot M, McDonald L, Heritage J. Online commentary on physical exam findings: a communication tool for avoiding inappropriate antibiotic prescribing? *Soc Sci Med* 2003;**56**:313–20.
- 22 Clayman SE, Gill VT. Conversation analysis. In: Bryman A, Hardy M, eds. Beverly Hills: Sage Publications 2004.
- 23 Goodwin C, Heritage J. Conversation analysis. *Annu Rev Anthropol* 1990;**19**:283–307.
- 24 ten Have P. *Doing Conversation Analysis*. London: Sage Publications 1999.
- 25 Jefferson G. On 'trouble-premonitory' response to inquiry. *Sociol Inquiry* 1980;**50**:153–85.
- 26 Pomerantz AM, Ende J, Erickson F. Precepting conversations in a general medicine clinic. In: Morris GH, Chenail RJ, eds. *The Talk of the Clinic*. Hillsdale, New Jersey: Lawrence Erlbaum 1995;151–69.
- 27 Heritage J, Maynard DW. *Communication in Medical Care: Interactions between Primary Care Physicians and Patients*. Cambridge: UK. Cambridge University Press 2005.
- 28 Byrne PS, Long BEL. *Doctors Talking to Patients. A Study of the Verbal Behaviours of Doctors in the Consultation*. London: HMSO 1976.
- 29 Cassell EJ. *Talking with Patients. Vol. 1. The Theory of Doctor–Patient Communication*. Cambridge, Massachusetts: MIT Press 1985.
- 30 Frankel RM, Beckman H. Teaching communication skills to medical students and house officers: an

- integrated approach. In: Clair J, Allman R, eds. *Sociomedical Perspective on Patient Care*. Lexington, Kentucky: University Press of Kentucky 1993;211–22.
- 31 Lipkin M Jr, Putnam SM, Lazare A, eds. *The Medical Interview. Clinical Care, Education and Research*. New York: Springer-Verlag 1995.
- 32 Platt FW, McMath JC. Clinical hypocompetence: the interview. *Ann Intern Med* 1979;**91**:898–902.
- 33 Stewart M, Roter D, eds. *Communicating with Medical Patients*. Newbury Park, California: Sage Publications 1989.
- 34 Frankel RM, Quill TE, McDaniel SH. *The Biopsychosocial Approach: Past, Present, Future*. Rochester, New York: University of Rochester Press 2003.
- 35 Williams GC, Frankel RM, Campbell TC, Deci EL. Research on relationship-centred care and health care outcomes from the Rochester Biopsychosocial Program: a self-determination theory integration. *Families, Systems, Health* 2000;**18**:79–90.
- 36 Suchman AL, Williamson PR, Litzelman DK, Frankel RM, Mossbarger DL, Inui TS. Toward an informal curriculum that teaches professionalism: transforming the social environment of a medical school. *J Gen Intern Med* 2004;**19**:501–4.
- 37 Cassell EJ. Making the subjective objective. In: Stewart M, Roter D, eds. *Communicating with Medical Patients*. Newbury Park: Sage Publications 1989;13–5.

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