

Conversation analysis: a method for research into interactions between patients and health-care professionals

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Abstract

Background It is clear that much of the success of health-care provision depends on the quality of interactions between health professionals and patients. For instance, it is widely recognized that patients are more likely to take medication effectively if they have been involved in discussions about treatment options, and understand and support the decision about what is prescribed (patient concordance). Hence, patient participation is important for the success of medical outcomes. The key is to explore how communicative choices made by health professionals impact on the quality of interactions in general, and of patient participation in particular. However, to date there has not been an appropriate method for investigating this connection or impact.

Objective To outline the perspective and method of Conversation Analysis (CA). Developed within sociology and linguistics, CA offers a rigorous method (applicable to large data sets) to the study of interaction in health settings.

Strategy The method of CA is illustrated through a review of CA studies of doctor–patient interactions. Two such studies, one from the US and the other from Finland, are reviewed, in order to show how CA can be applied to identifying both forms of patient participation, and the interactional conditions which provide opportunities for patient participation. These studies focus principally on the medical examination and diagnostic stages of the consultation. Further research will examine the forms and conditions of patient participation in decision-making.

Introduction

At the very heart of the delivery of health-care services lie the interactions between medical staff and patients. Those interactions play a key role in determining, for instance, the accuracy of diagnosis, patients' commitment to treatment regimes, and the extent to which patients are satisfied with the service they receive. But despite

the importance of its role in medical care provision, the interaction between medical staff and patients is perhaps the most difficult aspect of medical care delivery to study and measure. In this paper we describe a methodological approach – that of conversation analysis (hereafter CA) – which offers new insights into medical interaction and communication, on the basis of which it may be possible to:

- identify patterns of behaviour which health-care practitioners might more consciously take into account in their interactions with patients – and which, therefore, may have implications for training.
- identify interactional strategies which may facilitate patient involvement in discussions and decisions about health-care (and thereby contribute to patient concordance).
- explore the association between certain interactional ‘styles’ and certain outcomes – such as patient satisfaction, antibiotic prescription, etc.

In this brief account of CA, our aim is to outline its methodological approach to analyzing interaction, and to illustrate the kinds of findings which CA research into medical interactions, especially those between doctors and patients in primary care, is beginning to generate. We will also outline, in general terms at least, some of the applied directions this research might take.

In what follows we describe and exemplify the method of CA by considering research into interactions between doctors and patients in primary health-care. This is of course only one of the many kinds of encounters between health-care staff and patients which can shape the future trajectory and success of health-care. For example, nursing staff, midwives, health visitors, etc. all play vital roles in patient care (roles which are likely to increase in importance, as in the current expansion of the role of nurses in clinics: there is evidence that nurses sometimes obtain diagnostic information which, for a variety of reasons, patients may not communicate to doctors). However, until now CA research has focused almost exclusively on doctor–patient interaction (for exceptions, see Heritage and Sefi).¹ In describing some of this research, we highlight interactional processes associated with forms of patient participation during the consultation – which is particularly salient to the aims of this journal.²

Conversation analysis

In order to begin to understand the processes which may underlie the quality and effective-

ness of medical interaction and communication³ we have first to identify what happens during medical encounters, and how it happens. For instance, we need to document how doctors interact with patients, in order to begin to determine the impact of interactional processes on the relative success of different communication styles and strategies. So our starting point is to describe the patterns of interaction between doctors and patients – though again, our purpose in doing so is to exemplify the method of CA, a method which can be applied to interactions between a variety of practitioners and patients in any health-care setting.

CA focuses on the largely verbal communicative practices which people recurrently use in interacting with one another. These practices are employed by participants in order both to produce meaningful action and to interpret the other’s meaning. There are three particular features of this analytic approach which should be highlighted.

First, any utterances, and indeed many aspects of non-verbal behaviour^{4,5} are considered to be performing *social actions* of various kinds, actions which are generally bound up with the broader activities associated with the consultation, such as finding out the reasons for the patient’s visit, history taking, conducting an examination, etc.

Second, utterances/actions are connected in *sequences* of actions, so that what one participant says and does is generated by, and dependant upon, what the other has said and done. Hence CA focuses on the dynamic processes through which connected sequences of actions are built up.

Third, these sequences appear to have stable patterns. How one participant acts (speaks) can be shown to have recurrent (and, to an extent, predictable) consequences for how the other responds, and thereby for the sequential shape and ultimately the outcome of the ensuing interaction.

The identification of sequential patterns, and the practices through which these patterns are generated, are distinctive to CA’s approach. In contrast to the somewhat static picture provided by techniques involving coding behaviour^{6,7} and

then producing statistical aggregations of the relative frequency of coded events, CA aims to identify and describe the specific interactional consequences which follow from given verbal practices.⁸ Also, in contrast to other naturalistic, qualitative approaches to doctor–patient communication (some of which attempt to reveal the negotiation of meaning between doctor and patient in singular instances),^{9,10} CA's findings are based on the examination of large scale data corpora. Its method involves identifying a practice and collecting as many instances of that practice as can be found in the data corpus. In this way we look for what are recurrent and systematic patterns, which do not arise from or depend upon participants' idiosyncratic styles, particular personalities or other individual or psychological dispositions.

This approach depends, then, on analyzing *naturally occurring* interactions. An appropriate number of the kind of interactions under investigation is recorded, including consultations with multiple doctors (in order to guard against what might be idiosyncratic styles, and hence to ensure that findings are generalizable), and usually different patients in each recorded consultation (for example, for their study considered below, Heritage and Stivers recorded 335 consultations involving 19 physicians).¹¹ The recordings are transcribed in considerable detail (to capture aspects of the relative timing of utterances, sound production and intonation, and other characteristics of speech delivery: for an explanation of the transcription system, see below Fig. 1). These enable us to examine the data in order to identify characteristic patterns

<u>The relative timing of utterances</u> Intervals either within or between turns shown thus (0.7) A discernible pause which is too short to be timed mechanically is shown as a micro-pause, thus, (.) Overlaps between utterances are indicated by square brackets, the point of overlap onset being marked with a single left-hand bracket Contiguous utterances, where there is no discernible interval between turns, are linked by an equals sign. Also used to indicate very rapid move from one unit in a turn to the next <u>Characteristics of speech delivery</u> Various aspects of speech delivery are captured in these transcripts by punctuation symbols (which, therefore, are not used to mark conventional grammatical units) and other forms of notation, as follows: A period indicates a falling intonation A comma indicates a continuing intonation A question mark indicates a rising inflection (not necessarily a question) The stretching of a sound is indicated by colons, the number of which correspond to the length of the stretching .h indicates inhalation, the length of which is indicated by the number of h's h. indicates outbreath, the length of which is indicated by the number of h's (hh) Audible aspirations are indicated in the speech in which they occur (including in laughter) °° Degree signs indicate word(s) spoken very softly or quietly Sound stress is shown by italics, those words or parts of a word which are emphasised being underlined Particularly emphatic speech, usually with raised pitch, is shown by capital letters If what is said is unclear or uncertain, that is placed in parentheses

Figure 1 Transcription symbols.

of communication – generally by first distinguishing types of *turn design*, and then tracking the relations between those types and the sequential development of interactions.

The concept of ‘turn design’ is fundamental to CA’s method. It is clear in the following extract from the start of a consultation between a physician and patient in the US that each takes turns to talk (although sometimes one anticipates what the other is saying and begins to respond before the other has finished).

Example 1 (from Robinson)¹²

- 01 Dr: Hi Missis Mo:f[et,
 02 Pt: [Good morning.
 03 Dr: Good mo:rning.
 04 → Dr: How are you do:[ing
 05 Pt: [Fi:n]e,
 06 (.)
 07 → Dr: How are y[ou fe[eling.
 08 Pt: [Much [(better.)
 09 Pt: I feel good.
 10 (.)
 11 Dr: Okay.=so you’re feeling
 a little [bit better] with thuh
 13 Pt: [Mm hm,]
 14 Dr: three: of thuh [Chlonadine?
 15 Pt: [Yes.

The turns which each takes to speak, to be followed by the other participant taking a turn in response, and so on, are the building blocks of interaction. In this example the doctor (Dr) constructs two turns which in some respects are quite similar; in line 4 she asks the patient (Pt) *How are you doing*, and then in line 7 asks her *How are you feeling*. The slight difference in turn construction (*doing* in the first, *feeling* in the second) reflects the different actions which each performs. The first is one of the generic open-ended social enquiries (*How are you’s*) with which, after an initial exchange of greetings (lines 1–3), people commonly begin interactions. But Robinson¹¹ shows that the construction used in line 7 is biomedically focused, and solicits an update on whatever problem it was for which the patient previously visited the doctor. So this latter design or format is used in follow-up visits, to check the patient’s progress, response to treat-

ment in the interim, etc. This becomes explicit when in lines 11/12 and 14 the doctor refers to the medication for the patient’s condition (high blood pressure). Notice particularly that the patient discriminates between the different actions which each turn design achieves. She responds to the former as a social enquiry with *Fine*, but to the latter biomedical enquiry with a form (*Much better. I feel good*), which manifests her understanding that he is enquiring about her progress in coping with the condition about which she last consulted the doctor. Thus, the turns are designed differently; and they have different sequential consequences, initially in terms of the kind of replies which the patient selects in answer to each. Hence, the patient’s responses are not random: they are connected directly to the design of the doctor’s preceding turns.

This is meant only to introduce some of the building blocks in CA’s methodology. It illustrates that quite minor, detailed aspects of wording or phrasing in the design of a turn have consequences for the sequential uptake by the next speaker. There is one point to add to this account of turn design, before showing the kind of research results which are being achieved through the application of this methodology. When in line 7 of example 1 the doctor asks *How are you feeling*, she makes a selection from among a range of alternative ‘openings’ which might be used in this position, such as *What can I do for you today?*, *What brings you in today?*, *What seems to be the problem?* and the like, forms which are used for ‘first time’ visits (that is visits about new concerns).¹² So that in designing her enquiry here, the doctor not only changes the wording slightly, thereby differentiating the action she’s performing in line 7 from what she did in line 4; she is also choosing not to use one of these ‘first time visit’ forms of enquiry about the patient’s presenting condition. Of course to have done so would have been *inappropriate*, in so far as it would have betrayed the doctor’s having overlooked or forgotten that the patient was making a return visit in connection with a condition about which she (the doctor) is (or should be) already aware (and Robinson shows what happens when doctors do make this

mistake, as revealed in their selecting the 'wrong' format). Therefore, from among a range of alternative forms of enquiry about the patient's presenting condition, the doctor selects one which is appropriate to the particular circumstances of the visit/patient.

By now it should be clear that the alternative forms for constructing or designing a turn are not at all equivalent. Some may be more appropriate than others, in the circumstances; whilst the one selected from among those which might have been appropriate (for instance, in example 1 the doctor might have asked something like *How have you been getting along with the Clonidine?*) will have different sequential consequences from those others.

Applying CA to doctor–patient interaction: two illustrations

We will now illustrate how this method of exploring connections between turn design and sequential consequences – and hence the significance of turn design for sequential patterns – can illuminate what goes on in doctor–patient interaction. We will focus on two key stages in the consultation; the physical examination of the patient, and the delivery of the diagnosis – and some interrelationships between these. We draw on research being conducted in some of the main centres for CA research into medical interactions, in Los Angeles (UCLA) by Heritage and his collaborators, and in Finland, by Peräkylä and his coresearchers at the universities of Tampere and Helsinki (other significant research along these lines is being conducted at Indiana¹³, Rochester¹⁴ and San Diego¹⁵). From this research, we are selecting findings which relate specifically to patient participation in the consultation – the forms and conditions for patient participation, and how these are shaped by the interactional and communicative choices which doctors make. Thus, there is an interdependence between how doctors choose to design their turns (e.g. when examining patients) and the nature of patients' participation in the consultation. This should not be construed as a limiting or controlling effect: there is plenty

of evidence that patients' participation is not wholly determined by doctor's moves. But the sequential patterns connecting doctors' turns with those of patients are clear enough to suggest that patient participation is closely linked to choices implemented by doctors.

The physical examination: 'online' commentary

Heritage and Stivers report that when doctors conduct a physical examination of the patient, they may also provide an accompanying commentary in which they evaluate the diagnostic significance of certain physical signs.¹¹ In the following example the doctor first explains what he's doing (line 3, *gonna check yer thyroid*) and then in lines 5/7 evaluates the diagnostic result of having checked the thyroid.

Example 2 (Heritage and Stivers)¹¹

- 01 Doc: An:' we're gonna have you look
s:traight ahead,=h
02 (0.5)
03 Doc: J's gonna check yer thyroid right
no:w,
04 (9.5)
05 Doc: → 0.hh That feels normal?
06 (0.8)
07 Doc: → I don't feel any: lymph node:
swelling, .hh in yer neck area,
.hh Now what I'd like ya tuh do
I wantchu tuh breathe: with yer
mouth open. =
Nice slow deep breaths.

Heritage and Stivers term the practice illustrated in lines 5/7, of providing a contemporaneous evaluation of certain findings during the physical examination, 'online commentary'. They note that online commentaries:

- are made simultaneously with the act of examination.
- are generally used to report signs which are absent or mild, as is explicit in line 5 above, *That feels normal?*
- are subordinate to the main task of conducting the physical examination; hence patients rarely respond to these evaluations.¹¹

Thus, the doctor produces positive, 'no problem' evaluations during a phase in which the patient's participation is oriented to the examination itself. In so far as patients do not address such online evaluations, they also do not question, query or doubt them. This is significant, because as Heritage and Stivers show, online commentary functions to forecast an upcoming 'no problem' diagnosis. In circumstances where, in acute visits, the patient has presented with a strong indication of being unwell, or in which incipient disagreement is emerging between doctor and patient – in other words, when the doctor has reason to anticipate patient resistance to a 'no problem' diagnosis which is beginning to be formed – then online commentary can serve to build patient acquiescence. For instance, although the data are too extensive to show in full, the following extract involves a patient who has presented with continuing sinus problems, for which he has been taking medication. It is clear that the patient is persisting with his symptomatic complaints, until the doctor produces the online commentary in line 3.

Example 3 (from Heritage and Stivers)¹¹

- 01 Doc: °(Well) let's check your sinuses an'
see how *they* look today.°
02 (1.0)
03 Doc: → That looks a *lot* better = I don't
see any inflammation today.
04 (0.8)
05 Doc: G[ood].
06 Pt: → [(Good.)
07 (.)
08 Doc: That's done the trick.
09 (1.0)
10 Doc: So you should be just about o:ver
it. I don't-(I'm) *not* really (.)
convinced you have an ongoing
infection = it seems like the
augmentin really kicked °it.°
11 Pt: → Good.
12 Doc: Okay. (.) An' *what else* did we need
to address your EKG:?

It is notable that when in line 6 the patient responds to the doctor's online evaluation with

Good, he begins for the first time to indicate that he is prepared no longer to challenge (albeit implicitly) the doctor's assessment of his wellness, an implicit form of acquiescence which is confirmed by his response in line 11 to the doctor's summary evaluation (line 10: this is somewhat mitigated by appearing to change from *I don't think* to *I'm not convinced*, and including the evidential *it seems like*).¹¹

The significance of this is revealed in Heritage and Stivers' finding that in all instances in their data, doctors' use of online commentary resulted in the absence of patients' resistance to the subsequent diagnosis of (comparative) wellness. This is in contrast to the more general tendency for patients to query or otherwise resist 'no problem' diagnoses, when these have not been preceded, or prepared, by online commentary.^{16,17} Thus, an aspect of doctors' verbal behaviour, namely their use of a turn design in which they give an online commentary/evaluation about what they can see, feel, etc., has the sequential consequence that patients who until then have been in incipient disagreement with a doctor about their condition, do not pursue their claims to be unwell and instead acquiesce in the doctor's diagnosis that there is nothing wrong.

Online commentary has a further significance concerning the prescription of medication, especially antibiotics. Heritage and Stivers show that in managing the interaction so as to overcome patients' resistance to a 'no problem' finding, doctors also thereby manage to avoid complying with patients' expectations to be prescribed medication for what they think may be wrong with them – expectations which are generally conveyed implicitly in the way they present their condition, but sometimes in more explicit demands. In view of the evidence that doctors are influenced in their decisions about whether to prescribe antibiotics by patients' expectations (though note the evidence that doctors may overestimate patients' expectations about being prescribed medication),^{18,10} Heritage and Stivers conclude that 'online commentary may prove to be a simple but powerful communication resource with which physicians can

resist implicit or explicit patient pressure for antibiotic medication'.¹¹

This possibility arises directly from a turn design which doctors may choose to implement when they are conducting a physical examination. The selection and implementation of online commentary has a very specific sequential consequence – patients acquiesce with the doctor's 'no problem' diagnosis. In doing so they comply with the non-prescription (or non-continuation) of medication. They do so specifically in circumstances where had the doctor *not* employed online commentary, it appears that patients would continue to resist doctors' emerging diagnoses – making doctors vulnerable to prescribing treatments simply to assuage patient expectations.

The research reviewed here shows how closely interdependent patient participation is with how doctors design their interactional moves (turns at talk). For instance, doctors include online commentary whilst conducting the physical examination in environments in which there are signs that the patient will resist the upcoming diagnosis. In this way a doctor's turn design is responsive to what the patient has said and done previously: and that turn design has consequences for the subsequent sequential development of the talk and the part which the patient plays in it – in so far as the pattern associated with online commentary is one in which patients always subsequently acquiesce to the diagnoses (but do not necessarily do so if the examination has not been accompanied by online commentary). Thus, a doctor's choice to use this communicative practice reflects his/her understanding of the prior talk, and thereafter shapes the talk, and action, of the patient.

Formats for the diagnosis delivery

We have seen that there can be a direct connection between a patient's acceptance of a diagnosis which s/he had previously resisted, and the doctor's mobilization of online commentary as a resource for communicating the emerging findings of the physical examination and preparing the patient for the likelihood of a

'no problem' diagnosis. We turn now to a study which has revealed more about the conditions for patient acceptance of a diagnosis – conditions which are associated with the format in which the diagnosis itself is delivered. Based on research for which over 100 primary health-care consultations were videotaped, involving 14 doctors across 4 health centres in Finland, Peräkylä identified three contrasting formats for the delivery of diagnostic news to the patient, two of which will concern us here.^{17,19} These differ with respect to the way in which the evidential grounds for the diagnosis are made accessible to patients.

In the first format, the doctor just asserts the diagnostic conclusion that s/he has reached.

Example 4 (from Peräkylä)¹⁷

Dr: There's still an infection in the auditory canal

Example 5 (from Peräkylä)¹⁷

Dr: Here's (.) luckily the *bone* quite intact,

Such direct deliveries (type I) of the diagnosis do not refer to the reasons or evidential grounds for reaching the conclusion: they just assert something to be the case. This contrasts with the second format (type II), in which the diagnosis is accompanied by a reference to or account of the evidence on which the doctor bases her/his diagnosis.

Example 6 (from Peräkylä).¹⁷ (The doctor has just examined the patient's foot)

01 Dr: Okay: .h fine do put on your,
02 (.)

03 Dr: 1 → the pulse [can be felt there in your foot so,

04 Pt: [Thank you.

05 Dr: 2 → .h there's no, in any case (.) no real circulation problem

The doctor first articulates the key evidence supporting the upcoming diagnosis (arrow 1, line 3), which is then delivered as an upshot of that evidence (see the *so* at the end of line 3, linking to the diagnosis in line 5, arrow 2). The key feature of this second format is that doctors make explicit, and therefore accessible to

patients, the symptomatic evidence and medical reasoning supporting a given diagnostic conclusion.

Although it might at first appear that the type I delivery format relies for its objectivity and legitimacy simply on the medical authority of the doctor, the picture is not quite as simple as that. Peräkylä finds that this format is used, generally, when the evidence, or at least the nature of the evidence, is easily available to the patient. 'For example, the doctor may look into the patient's ear, and immediately after doing so may assert that there is an infection in the ear; or he or she may examine a medical document (such as an X-ray) and state the diagnosis directly thereafter. By positioning the diagnostic statement next to the examination, the doctor minimizes what could be called *the inferential distance* between the diagnosis and its grounds: the activity context provides for the observability and the intelligibility of the evidence'.¹⁹

One of the principal environments in which the type II format tends to be deployed is where there is incipient or overt disagreement between doctor and patient. We have seen above that online commentary may be used during the physical examination when a doctor anticipates that the patient might otherwise resist a 'no problem' diagnosis. So too a doctor may select a type II format when delivering a diagnosis which will explicitly reject or correct any diagnostic suggestions which the patient has expressed previously in the examination. Thus, this format is used in circumstances where doctors are dealing with possible resistance by patients (though note that doctors may also use this format when narrowing down the diagnosis from a range of possible alternatives). Selection of a type II format is responsive to prior sequential evidence that the doctor and patient overtly disagree about what might or might not be wrong with the patient. And it is deployed to serve the function of attempting to secure the patient's subsequent acquiescence to the doctor's ('discrepant') diagnosis.

However, there is a markedly different pattern in patients' responses to the two formats. That is, the two formats have different sequential

implications for the subsequent interactions. Peräkylä reports that patients rarely if ever respond more than minimally to type I formatted diagnoses. They usually just acknowledge the diagnosis, but do not, for instance, describe further aspects of their experience of symptoms related to their presenting complaint. By contrast, in response to about one third of cases in which doctors employed the type II format, patients *did* respond to the diagnosis, sometimes extensively, by describing further the kinds of symptoms they have experienced (and thereby possibly resisting the doctor's diagnosis). This happens quite explicitly in example 7, when the patient pursues her own diagnostic hypothesis after the doctor has indicated that he considers there is nothing seriously wrong (line 9; note the *as...so* construction through which the doctor explains the physical evidence which leads him to this conclusion, after palpating the patient's back).

Example 7 (from Peräkylä)¹⁹

- 01 Dr: (But but) I really can feel these with my
fingers here it is you see [() this way, a
very tight =
- 02 Pt: [Yes,
- 03 Dr: =muscle fibre,
- 04 (1.0)
- 05 Pt: Yes a little th[ere <
- 06 Dr: [IT GOes here from the
top but it probably gives it (.) a bit
further down then,
- 07 (1.0)
- 08 ((Dr withdraws her hands from P's
back))
- 09 Dr: As tapping on the vertebrae didn't
cause any pain and there aren't (yet) any
actual reflection symptoms in your legs
it corresponds with a muscle h (.hhhh)
complication so hhh it's only whether
hhh (0,4) you have been exposed to a
draught or has it otherwise =
- 10 Pt: =Right,
- 11 Dr: .Hh got irrita[ted,
- 12 Pt: [It couldn't be from
somewhere inside then

as it is a burning feeling there so it
 couldn't be in the kidneys or somewhere
 (that p[ain])

- 13 Dr: [Have you had any tr- (0,2)
 trouble with urinating.
 a pa – need to urinate more frequently
 or any pains when you urinate,

The patient responds to the doctor's diagnosis by describing another symptom (*burning feeling* inside, line 12) discrepant with that diagnosis, and suggests an alternative (that the problem might be *in the kidneys*, line 12). Note that she also uses the *as...so* construction which displays the connection between diagnosis and evidence), which the doctor duly begins to consider in line 13.

The paradox here is that a delivery format in which the doctor makes explicit the evidential grounds for the diagnosis frequently results in a continuation of the resistance which the delivery format might have been expected to forestall or resolve. But this paradox highlights the differences between the two formats in terms of their potential for patient participation. Although type I formats are delivered in circumstances where the evidential basis for the doctor's diagnosis might be transparent to the patient – for instance that s/he's just looked in the patient's ear, or at an X-ray – the specific signs which the doctor has registered and their symptomatic relevance is not made available to the patient. In this way the patient is excluded from the details of the inferential process which has led to a given diagnostic conclusion. Type II formats, on the other hand, reveal to the patient the evidential and inferential basis for the doctor's conclusion. Peräkylä comments that in this way 'the doctor establishes a particular relation between the patient and him or herself: one where the patient's reflections on the diagnosis are relevant and welcome'. In short, 'this turn design encourages the patients to talk'.¹⁹ And what they say in response to the diagnosis follows a pattern in which they imply reservations with the diagnosis – not by challenging the evidential basis which has been offered as the grounds for the diagnosis (they do not at all challenge the

doctor's authority to draw certain conclusions from those signs), but by describing additional symptoms discrepant with the diagnosis. In this way patients are given an opportunity to express more fully their symptomatic experience, including feelings, sensations and the like which had not previously been covered in the examination. Thus, the two formats are deployed in different sequential circumstances, and have radically different sequential implications – type II deliveries being associated with a greater degree of patient involvement, and as a consequence with opportunities to describe more fully the discomfort, pain, etc. they have been experiencing and which has led them to consult the doctor.

Summary

On the basis of the kind of CA research reviewed here, we can begin to see how – in quite specific ways – the opportunities for and character of patient participation in primary care consultations is shaped by the ways in which doctors design their turns at talk, when conducting a physical examination and delivering a diagnosis (though research shows this is true for other phases also; on openings see Robinson;¹² and Boyd and Heritage on history taking²⁰). The selections which doctors make in their turn design are likewise responsive to the prior verbal behaviour of patients (among other things, such as the certainty or clarity of the diagnosis which a doctor might be entertaining). Although we have focused here on the examination and diagnosis phases of the consultation, the same principle holds for other phases, for example when responding to the reasons patients give for seeking medical care, including the explanations or hypotheses which patients sometimes give about what they think might be wrong with them;^{21,22} and when discussing treatment options available to patients (patient participation in discussing and agreeing treatment options will be a particular focus of the project from which this paper derives). We do not mean to imply that patients have no autonomy or no scope to initiate courses of action in the

consultation. There is evidence that they do create opportunities which go beyond those provided by doctors' turns/questions¹⁴ (for instance by adding accounts of symptoms in answer to questions about quite different matters²³). Nevertheless, the opportunities which patients have to participate and the nature and extent of that participation are closely bound up, in systematic ways, with the design of what doctors say during the interaction. Hence, patient participation should be understood as at least partially the interactional product of doctors' communicative practices and choices – in ways which go beyond what is known already about the differential opportunities which open and closed questions offer patients to contribute and fully to describe their experiences.²⁴

What is novel, and powerful, about CA's approach is that it offers a methodology for identifying the kinds of choices doctors make in their turns at talk, in terms of how they design their turns, whether taking the patient's history, conducting a physical examination, delivering the diagnosis, or suggesting treatment options, etc. This approach enables us to track (a) the kinds of environments in which doctors tend to select one choice rather than another (where 'environments' refers to what happened in the preceding talk), and (b) the sequential trajectories which follow from the choices they make (these points apply equally to patients' design of their turns, and the sequential implications of those designs). At an abstract level, CA explores the relations between turn design, sequential patterns and the subsequent development of talk. In terms of doctor–patient interaction, CA research shows that, and how, the selections which doctors make in designing their turns have certain consequences for what patients go on to say and do (e.g. whether they continue to resist a diagnosis) – and hence for patient participation.

CA's method is an observational science: it does not require (subjective) interpretations to be made of what people mean, but instead is based on directly observable properties of data (e.g. of turn design), and how these affect the

interactional uptake by the other participant. Hence, these properties can be shown to have organized, patterned and systematic consequences for how the interaction proceeds.

Applications

Two preliminary points may be made about the possible applications of the findings of such research. First, it is clear that although the success of health-care services depends very considerably on biomedical factors in diagnosis and treatment, communication also plays a vital role in the efficacy of health-care. For instance, the quality of interaction between doctor and patient can affect whether patients disclose full and accurate diagnostic information, and their subsequent concordance with prescribed treatment. Second, the findings reviewed above will no doubt correspond with doctors' own intuitive impressions about what they say when conducting an examination or delivering a diagnosis (including what best to do when things are becoming 'sticky'); which is to say that doctors will almost certainly recognize these practices (online commentary, etc.) in their own behaviour. However, these findings make explicit how these practices operate, and specify their likely interactional consequences, through identifying the sequential patterns associated with different turn design options. They, therefore, provide a sound basis for assessing the likely interactional and communicative consequences of adopting one form rather than another. This is important in considering what to recommend that doctors should do or say in particular circumstances. If recommendations are to be made about which communicative practices are most likely to be efficacious in principle ('best practice'), or specifically to facilitate patient participation, these need to be founded upon information about the interactional consequences of adopting a given practice. The methodology of CA has the potential to provide that information. However, it should be noted that outcomes which can be attributed specifically to interactional features of a given encounter are difficult enough to identify, let

alone measure. And measures of the 'success' of medical interactions are still too unrefined for us to begin to understand the conditions which contribute to the relative success or otherwise of different interactional 'styles', strategies and such like.

The potential applications of CA research in this field can be summarized under three closely interrelated headings:

- 1 Patient participation.
- 2 Health care processes, including those relating to (unnecessary) medication.
- 3 Health care outcomes, especially relating to patient satisfaction.

Patient participation: there is widespread agreement with the importance of encouraging greater participation by patients in the medical consultation, as part of fostering the broader involvement of patients in the health-care process. The kinds of findings reviewed here suggest that certain communicative practices employed by doctors may encourage patients to contribute in significant ways. For instance as Peräkylä notes, the type II format for diagnosis delivery, in which doctors explicate the evidence for their diagnoses, 'opens up' the talk after the diagnosis, in ways that other formats do not: and in their responses to type II diagnoses, patients have the opportunity to report other symptoms which were not covered during the examination, as happened in example 7. These additional observations by the patient may turn out to be diagnostically significant. But in any case, the opportunity to have talked over their symptoms more fully than might otherwise have been permitted, and thereby to have expressed what they fear might be wrong, is itself an important contributory factor in reassuring patients, and also in patients' assessments of and satisfaction with the consultation.

Health care processes, including those relating to (unnecessary) medication: certain medical benefits may follow more directly from an understanding of the interactional patterns which have been outlined, and others identified through CA research. We have stressed that doctors' verbal behaviour impacts on patient

concordance. There is every likelihood that further consequences are associated with doctor's verbal behaviour, including shaping patients' beliefs about their illness and treatments. If it is true that patients are more likely to take medication effectively if they have been involved in discussing treatment options and what has been prescribed, then the communicative practices identified through this methodology might have implications for improving patient understanding of and commitment to treatment – and thereby to the success of medical care. The findings concerning 'online' commentary suggest that communication strategies which simultaneously reassure patients that they were justified in seeking medical help but that there is nothing wrong which need be treated medically, can play a vital role in reducing the unnecessary prescription of antibiotics – thereby reversing the trend of rising antibiotic prescription in the absence of bacterial infection.¹¹

Health care outcomes, especially relating to patient satisfaction: CA's methodology does not provide 'external' measures of patient satisfaction, nor ways to connect patient satisfaction with particular communicative practices. However, it is perhaps likely that the practices described here may potentially contribute to patient satisfaction – for instance, by being given the opportunity to give a full account of the symptoms they experience, and of what they fear might be wrong with them. Practices which expand the range of opportunities of this kind available to patients are likely to increase their satisfaction with their interactions with doctors. Furthermore, it may be possible in the future to identify certain endogenous indicators of patient satisfaction, which may be linked with localized interactional practices – this along the lines of Drew's suggestion, in the context of telephone calls made to the police, that certain troubles in or disruptions to the fluency of interaction indicate difficulties which callers experience, and which may be related to their (dis)satisfaction with calls.²⁵ At any rate, communicational techniques such as 'online' commentary draw the patient into the process of understanding

what, if anything, is wrong with them. By giving them access to the physical signs being checked, and the assessment of those signs, the patient is helped to understand a 'no problem' diagnosis which may be contrary to his/her own fear that they had been suffering some chronic malady. In this way, the diagnosis emerges from a process in which they have played a part, rather than being imposed on them.

Furthermore, it may be possible in the future to integrate CA's methodology with certain external assessments of patient satisfaction. This might be achieved in a research design which combines detailed analysis of communication in medical interactions, with interviewing patients about their expectations concerning those interactions and how far they felt those expectations were met – including, for instance, how satisfied they were with the role they played in reaching decisions about their treatment. Comparisons might then be made between interactions themselves and patient responses expressed in interviews. This would enable us to identify those interactional episodes which are associated with particularly positive or negative evaluations by patients. We could then begin to specify which communicative practices, evident in those episodes, are likely to result in patient satisfaction, and which result in their dissatisfaction. The contribution of CA in such a research design (and this is precisely the design of the project in which we are currently engaged: see *acknowledgements* below) might add a novel dimension to our understanding of the (communicative) conditions for patient satisfaction.

In all these respects, the research which we have reviewed here has implications for communication training for health-care workers. This information can enhance their awareness of the interactional consequences which are likely to follow when they select from among the alternative practices available to them in certain situations. This can, in turn, assist them in selecting courses of action which are most likely to succeed in achieving certain aims.

In order to illustrate the general character of CA's methodology and its application to medical interactions, we have focused on

research into doctor–patient interaction in primary care encounters. But we are confident that the methods and findings of CA are applicable equally to interactions between health-care professionals (e.g. nurses, health visitors, and clinical specialists/consultants) and patients/clients across a range of medical encounters.¹

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