# The electronic patient record: a linguistic ethnographic study in general practice

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# A Linguistic Ethnographic Study in General Practice

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me hanging around, asking questions and looking over their shoulders as they got on with their day-to-day work in an already very demanding NHS environment. They made me feel welcome at all times and showed me patience as I sought to understand their working practices. My detailed analysis of the consultation would not have been possible without the willingness of both patients and clinicians to open up their consultations to viewing and recording by an 'outsider' in the interests of this research. I am very grateful to them.

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# Abstract

Electronic Patient Records (EPRs) are in widespread use in UK general practice. Although often taken-for-granted by clinicians, managers, administrators and patients, there is limited understanding of how EPRs shape care processes and healthcare interactions in this setting. The EPR is ubiquitous in practice, but its social impact remains under-researched.

In this thesis I present a novel approach to examining the role of the EPR, which draws on ethnography and discourse analysis. My work is based on eight months of ethnographic observation in clinical and administrative areas of two general practices. This included observation of clinical consultations, with video-recording of the interpersonal interaction and contemporaneous screen capture of the EPR. This opens up the 'EPR-in-use' to detailed scrutiny. In my analysis, which draws particularly on the theoretical work of Goffman and Bakhtin, I pay close attention to the detail of local action and interaction, whilst maintaining sensitivity to the wider context of the general practice organisation. This makes an original contribution to the emerging field of linguistic ethnography.

My analysis shows that the EPR contributes to shaping and regimenting interactions and care practices in profound ways, both within the consultation and more widely in general practice organisations. It creates new opportunities, but also creates new demands and tensions. In particular, it sharpens the tension between different ways of framing the patient – the patient as 'individual' and the patient as 'one of a population' – the latter a more institutional version of the patient. This creates what I have called a 'dilemma of attention' for clinicians engaged in patient care. I show ways in which the EPR contributes to the bureaucratisation of care, the construction and circulation of authority within and beyond the consultation, and the production of new notions of patienthood and professional habitus in contemporary general practice.

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# Glossary

| | |
|---|---|
| BMA | British Medical Association |
| BP | Blood pressure |
| CA | Conversation analysis |
| CHD | Coronary heart disease |
| DA | Discourse analysis |
| Docman | An electronic document management system |
| DOH | Department of Health |
| EBM | Evidence based medicine |
| EMIS | Egton Medical Information Systems Ltd. A primary care software provider |
| EMIS-LV | An example of a clinical information system, produced by EMIS |
| EPR | Electronic patient record |
| GMS | General medical services |
| GP | General practitioner |
| GP2GP | GP to GP transfer of (electronic) patient records. This enables transfer of electronic patient records between GP practices. |
| HCA | Health care assistant |
| HCI | Human computer interaction |
| HERO | Healthcare electronic records in organisations |
| IT | Information technology |
| IM&T | Information management and technology |
| MRC | Medical Research Council |
| MRCGP | Membership of the Royal College of General Practitioners |
| MSc | Master of Science |
| NHS | National Health Service |
| NHS R&D | National Health Service research and development |
| NPfIT | National Programme for Information Technology |
| PCO | Primary Care Organisation |
| PCT | Primary Care Trust |
| PEFR | Peak flow rate |
| PMS | Personal medical services |
| POMR | Problem oriented medical record |
| QMAS | Quality management and analysis system |
| QOF | Quality and outcomes framework, a financial incentive scheme from the DOH which rewards particular elements of clinical and administrative performance in GP practices |
| RCGP | Royal College of General Practitioners |
| RCT | Randomised controlled trial |
| Read codes | An electronic coding system for GP held data |
| RIAS | Roter interaction analysis system |
| UPS | Uninterruptable power supply |
| USB | Universal Serial Bus |

# 1  Introduction

*When doctors start to receive computerized records from their colleagues for their newly registered patients, and these records are seen to be complete, comprehensive, presented in a standard format with clearly legible summaries, diagnoses, and treatments, we feel certain that the popularity of the electronic records will snowball.*

*We have one important reservation about this development. We do not know whether direct input to the computer during the consultation will have an effect on doctor/patient communication. Research on this problem is urgently required.*

(page 9) Royal College of General Practitioners (RCGP 1980)


*The medical record is a tool…it does not "represent" the work, but it feeds into it, it structures it in complex ways: it structures communication between healthcare personnel, shapes medical decision-making, and frames relations between personnel and patients.*

(page 297) Marc Berg (Berg 1998)


Electronic Patient Records (EPRs) are now in widespread use in UK general practice, a setting in which almost universal computerisation had been achieved by 2005 (RCGP 2005). No longer confined to the reception area and the 'back office', EPRs have become an integral part of the clinical consultation, and largely taken for granted by clinicians, managers, administrators and patients. The expansion of computerisation in recent years reflects wider societal trends in technology use and is – at least in part – a professional response to its perceived benefits. Alongside this there have been numerous government policy reforms and incentives, often presenting the EPR as the solution to the many challenges facing the NHS. In what has been referred to as a "technology dream" (Østerlund 2002) or the "vision of a technological utopia" (Greenhalgh, Potts, Wong, Bark, & Swinglehurst 2009) a nationally networked EPR will – according to its enthusiasts – ensure that all the relevant information needed about a patient is available at the push of a button. Policy makers suggest that this will make healthcare better, safer, cheaper and more integrated (Greenhalgh et al 2009).

Within health informatics – a research tradition which concerns itself with the application of computers to clinical work – there have been over two thousand

primary studies measuring the impact of the EPR on different aspects of care (Greenhalgh et al 2009). Most of these studies adopt the randomised controlled trial (RCT) as the preferred study design, this being regarded as the gold standard method within this tradition. Although the volume of literature is huge, the quality of these studies is variable. One major and important finding of a recent comprehensive review of these studies is that there is very limited rigorous evidence that EPR technologies actually improve either the quality or safety of healthcare (Black, Car, Pagliari, Anandan, Cresswell, Bokun, McKinstry, Procter, Majeed, & Sheikh 2011). Despite this – and despite the failure of many large scale IT projects worldwide – there continues to be a common sense assumption that the EPR and related technologies will (in time) improve healthcare and iron out many of the 'messy' problems that arise in healthcare settings, resulting in better care for patients and greater efficiency for clinicians (Monteiro and Hepsø 2002).

An area which has received remarkably little attention by researchers – especially given the ubiquity of the EPR in practice – is the *social* impact of EPR technologies within primary care, for example the impact of the EPR on shaping working practices or on the very experience of being a clinician or patient in the new technology-rich working environment. Few researchers have sought to investigate what is *actually happening in practice.* In particular, there is as yet only a small body of research which has explored the consequences of the EPR for the interaction which takes place between clinician and patient in the consulting room.

This is surprising. As a profession, general practice is committed to the notion that effective communication within the consultation is of fundamental importance to the therapeutic relationship which exists between general practitioner (GP) and patient. Good communication is regarded as a core defining feature of 'good' medical practice (GMC 2011a). Furthermore, there is strong professional commitment to the notion that practice should be based on sound evidence of benefit to patients. It is important that this evidence base incorporates not only research which seeks to measure the impact of particular medical interventions but also research which seeks to illuminate social practices and make sense of

those aspects of practice which are complex, multifaceted and difficult to measure. How clinicians and other staff in primary care incorporate the EPR within their practice, and what this might mean for their professional practice and for the experience of patients is one such example.

The aim of the research on which this thesis is based was to explore whether, how and to what extent the EPR contributes to shaping care practices in the contemporary primary care setting. As a GP myself, I began with a particular interest in the clinical interaction, but I sought to contextualise this by paying attention to wider institutional practices around the EPR. As my research progressed so did my appreciation of the importance of this wider organisational and institutional context for the interpretation of the micro-detail of the consultations within which the EPR is used.

Erickson, in his book "*Talk and Social Theory*" draws attention to what he calls

> *two parallel assertions which, when held together, form a paradox:*
> 1. *The conduct of talk in local social interaction as it occurs in real time is unique, crafted by local social actors for the specific situation of its use in the moment of its uttering, and*
> 2. *The conduct of talk in local social interaction is profoundly influenced by processes that occur beyond the temporal and spatial horizon of the immediate occasion of interaction.*
>
> (page viii) (Erickson 2004)

During my research I have at different times and in different measures focused my interest on the micro-detail of the consultation and the broader context of the organisation and its institutional practices, always mindful of the nature of this tension between the 'micro' and the 'macro'. I have not sought to resolve the tension (which is insoluble) but have been keen to embrace the complexity which this paradox presents us with. The EPR contributes to changing the immediate context for interaction – to shaping its moment-by-moment unfolding – and also contributes to shaping organisational contexts (which – in turn – bear down on the consultation, and so on). It is only through the development of methodologies which facilitate the exploration of both aspects that one can begin to grapple with the complexity of the EPR and make sense of some of the

ways in which it is shaping care processes at many different levels. The EPR is not simply a technological 'container' which is either 'on' or 'off' (as the random-ised controlled trial measuring its impact might suggest) but part of a complex sociotechnical network in which humans and technologies interact.

The fieldwork for this thesis consisted of eight months of ethnographic observation across two general practice research sites, in which I was able to observe administrators, managers, receptionists, secretaries, doctors and nurses as they got on with their daily work in clinical and administrative areas. I developed a novel methodological approach for video-recording clinical consult-ations in which I have carried out contemporaneous screen capture of the EPR in real time. This has opened up the 'EPR-in-use' in the consultation to detailed micro-analysis. I have used my analysis of these consultations as a starting point for my thesis, looking inwards into the detail of the consultation and outwards at organisational practices. I have drawn on a range of concepts from the field of discourse analysis to inform my analysis, and have found the theoretical work of Erving Goffman and Mikhail Bakhtin particularly helpful as I have sought to maintain this dual sensitivity. My work is an original contribution to the emerging field of linguistic ethnography, a field which embraces this orientation towards both the detail of the interaction and the investigation of the wider contexts within which interactions take place.

This thesis argues that the EPR is shaping and regimenting interactions and primary care practices in profound ways. Alongside new opportunities come new demands and new tensions which are constantly being negotiated. This is evident within the consultation and also more widely in general practice organisations. GPs have always had to grapple, to some extent, with a tension which exists between different framings of the patient, both of which are captured in the General Medical Council's guidance "*Duties of a Doctor*" (GMC 2011b). On the one hand is the patient as an 'individual' ("*Make the care of your patient your first concern*") and on the other the patient as 'one of a population', a more institutional version of the patient ("*Protect and promote the health of patients and the public*") (GMC 2011b). I argue that the EPR brings this tension – for which I have coined the phrase a "dilemma of attention" – into much

sharper focus, tending to encourage a shift towards the latter rather than the former, in a process of bureaucratisation of care practices. This is profoundly influential in shaping the meaning of what it is to 'care' for patients within contemporary general practice and contributes to constituting new notions of patienthood and professional habitus.

## 1.1 A brief outline of my thesis

Following this introduction to my work, I will go on to describe the context within which my work has developed (§2). The context for my work encompasses my personal professional journey in clinical and academic settings, both of which have contributed to steering me towards this particular project at this particular time. Alongside this there have been important developments in the UK policy context and within the profession of general practice more widely. It is within this context that the EPR has been gaining ground and which makes it a particularly pertinent area of study. In addition, my work has taken place within a particular theoretical context, one in which linguistic ethnography is an emerging field, if not (yet) an established discipline. My work is an original contribution to this growing field.

In §3, I will review the literature which has informed my work. I will begin this chapter by highlighting some of the challenges around defining the EPR. The extensive scope of the literature on the EPR (which extends to thousands of papers and crosses numerous different disciplines) militates against this literature review being comprehensive so I have focused my attention on a review of medical records and computers in the consulting room, and to previous research on the computer as a 'third party' in the consultation.

I move on to introduce my study design, incorporating my methodological approach and specific research methods in §4. I will also introduce some of my early observations and how these informed the ongoing approach to data collection and analysis. I include in this chapter a review of the literature on the use of video as a research tool within the consulting room and some background literature on ethnography and discourse analysis by way of introducing my own methodological approach. My methodological approach,

conceptual framework and data analysis have evolved in parallel throughout the project, and in this chapter I attempt to pull together these different threads in a coherent 'storying' of this emergent iterative approach.

Mindful of this emergent approach I will go on in §5 to describe and illustrate some theoretical concepts which I have found particularly useful in my analysis and to which I refer again in later chapters. From Goffman I introduce the notions of engagement and involvement, participation framework, production format, footing and face-work. From Bakhtin/Vološinov I introduce the dialogic perspective of language, the notion of 'voice' and the notion of language as a site of social struggle.

In §6, §7 and §8 I present different strands of my analytic work and findings, which together constitute my main argument. In the first of these chapters I focus on one particular aspect of the EPR: the use of electronic templates (or forms) in nurse-led chronic disease management clinics. Drawing on examples of my data, I suggest that the template contributes to changes in the way that disease is defined and care is delivered, and shapes patienthood and professionalism in profound ways. I show that the template contributes to a regimentation of care practices and interactions in the clinical consultation and makes it difficult for nurses to maintain involvement with the patient as Goffman would define this term. I describe and illustrate the tension between 'individual' and 'institutional' framings of the patient.

In §7 I develop some of the ideas from the previous chapter and extend my analysis, showing that the complex structuring and shaping work of the EPR extends beyond the deliberately structured template. I present detailed micro-analysis of a series of case studies to demonstrate the role of the EPR in constructing and circulating authority within and beyond the consultation. I develop the notion of the "dilemma of attention" as clinicians seek to deal with the immediacy of the interaction and the institutional demands of the EPR, and suggest that conceptualising the EPR as a collection of 'voices' is a particularly useful way of attending to the complexity of the EPR within an analysis and ensuring that the broader context for care is kept within the analytic frame. I

argue that the EPR contributes to a shift away from professional interaction towards interaction which is more closely aligned with institutional evidence and accountability.

§8 contrasts with the previous two analytic chapters in its scope and orientation, and here I draw primarily on my ethnographic observation of what Goffman calls the 'backstage' regions of practice (Goffman 1959a). I take some of the analytic themes which emerge from the micro-analysis of the consultation (in §6 and §7) as characterising the EPR, and show how these can be seen to play out in the day-to-day workings of the general practice organisation at a more 'macro' perspective. This serves to demonstrate the potential force of the EPR in regimenting interactions in the 'micro' and regimenting organisations in the 'macro' as a complex web of inter-relationships is constructed.

In my final chapter (§9) I summarise the main conclusions of my work and reflect on the ways in which my parallel roles as GP and researcher have been mutually enriching throughout my PhD journey. I draw on my research findings to suggest implications for clinical practice and policy, and offer suggestions for future work to further develop this research area.

# 2 Mapping the terrain: the context for this research

## 2.1 Introduction

In this chapter I will describe the background to my PhD research. In particular I will go some way towards addressing two (of many) questions that I have been asked of my work: "Why do you want to research *that*?" and "Why did you decide to do this *now*?" Often asked with more than a hint of incredulity by some of my friends and GP colleagues, the answers to these apparently simple questions are not straightforward. They incorporate a range of personal, professional and academic aspirations and concerns; a particular combination of opportunities as they presented to me; an enthusiasm to explore aspects of my discipline – primary care – at a deeper level, and (perhaps paradoxically) an unsettled feeling about the changing landscape of primary care in the NHS and my own role as a general practitioner within it.

The ancient Greeks distinguished between two different concepts of time – *chronos* (Χρόνος) and *kairos* (καιρός). Chronos is the concept of time with which we are most familiar and refers to chronological time (e.g. clock time, date and year). Kairos encapsulates the sense of there being an opportune or 'right' time, a time which aligns with a particular set of contingent circumstances (Kairos, in Greek mythology was the personification of Opportunity). It is in this latter sense that I interpret the question "Why did you decide to do this *now*?" and I will expand on four selected aspects of this background context here. It is in the coming together of these different aspects of the background context that this PhD project has come about.

First I will set out my personal professional context for this particular work programme, drawing on my own experience as a clinician, teacher and academic. I will then briefly introduce the notion of 'good' electronic record keeping as it is often framed in wider professional discourse, before explaining – in broad terms – the UK policy context surrounding EPRs. In a final short section I will describe what I have called the 'theoretical context'. In this section I will briefly outline the theoretical perspective which I bring to this work, and

position my work as a contribution to linguistic ethnography as an emerging field of study. I will leave questions of how my work develops, and responds to, the work of previous researchers for the literature review in §3, and will develop my theoretical framework in much more detail in §4 and §5.

## 2.2  My professional context for this programme of work

My interest in the EPR goes back to 2001 when, as a relatively newly appointed GP principal[1] I became Information Technology (IT) lead for my practice. I already had a keen interest in Evidence Based Medicine (EBM) and had been active in education and research in this area for several years. I saw potential in the EPR for being able to conduct practice-wide EBM informed audits and improving various aspects of clinical care. Although the practice had been one of the first in the locality to introduce a clinical computing system (in the early 1990's) very little use was being made of the EPR beyond appointment scheduling and prescribing. Traditional paper notes (the A5 Lloyd George envelope containing 'continuation cards' on which medical notes were written in chronological order) were in daily use for summarising and reporting on patient care. This situation was by no means unusual.

At the time I was also studying a health informatics module as part of an MSc in Primary Health Care at UCL, which helped me to consider the challenges of implementing EPRs in practice. Between 2002 and 2003, I led my practice in 'going paperless', and through a process of 'learning on the job' became aware of the central importance of social factors in any technology reform in the workplace – an aspect of health informatics which had received little attention in my MSc module and for which I was ill-prepared. The process involved engaging the whole practice team and being mindful of the challenges felt by some members of staff. For example, one member of staff who was employed

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[1] A GP principal (also known as a 'partner') runs the GP practice. Although some UK GP principals are 'single-handed' most are in partnership arrangements within a group practice and are paid a share of profits as agreed within the partnership. In addition to taking unsupervised responsibility for patient care a principal is responsible for managing the practice, including the employment of practice staff, the development of the practice and all aspects of the practice business. GP principals may employ non-principal ('salaried') GPs within their practice who are paid a salary for an agreed number of hours worked.

part-time to 'pull and file' notes was worried that she would lose her job. Some GPs were anxious that they could not cope with the technical demands of the EPR. I had to anticipate and respond to staff development needs and adopt a very flexible approach as different contingencies arose. I ran workshops, helped staff with data quality and information governance, and contributed to the development of robust in-house approaches to coding records. In the final year of my MSc (2003) I took my experience beyond the practice, delivering an educational activity called 'Going Paperless?' to over 80 primary care staff in Suffolk. This formed the basis of an educational portfolio for my MSc dissertation (Swinglehurst 2003).

After completing my MSc I began working as a tutor on the same MSc course and became responsible for the health informatics module. One of my early contributions was to redevelop the module to incorporate a greater emphasis on the sociotechnical aspects of health informatics, inspired partly by the work of Marc Berg (Berg 1998) whom I quoted at the beginning of this thesis (page 12). I soon realised that in my work implementing the EPR in practice, my understanding of the 'social' had been limited and theoretically unsophisticated. I had paid little explicit attention to the subtle, and even not-so-subtle, ways in which the EPR was changing the detailed nature of the work itself, for both clinical and non-clinical staff. Not only had we incorporated the technology into our work, but the nature of our work was changing, and was continuing to change as we expanded our use of the EPR. I started to feel a sense of discomfort about the project, which by all accounts had been a great success and had earned me a Distinction in my MSc.

One of the things which started to unsettle me was the sense that the EPR was placing additional demands on me, not only as IT lead in the practice – with which I was comfortable – but in my role as personal doctor to my patients. I did not always feel the EPR was making my job easier as I had originally anticipated. I had to work out ways of accommodating the EPR whilst consulting with my patients, since it seemed more difficult to focus exclusively on their needs. Technically the EPR was cumbersome to use, slow and unresponsive at times and it was not always easy to find what I was looking for. I had to make

decisions about where to place the screen on my desk, and found myself moving it around frequently, concerned that it was in the way. Difficult questions were being raised by colleagues about how we could ensure that 'accompanying adults' in the consultation would not see patients' records, which could no longer be hidden discretely on one's lap.

Clinical audit[2] – which I had seen as a great potential of the EPR – was indeed much easier. However, it was not long before clinical audit became a central feature of the new Quality and Outcomes Framework – an opportunity for surveillance by external parties and a key instrument of performance-related pay. With the arrival of this new environment (which I will discuss in §2.4.3) my GP partners were delighted that we were already so well prepared. However my own professional sense of achievement was tinged with ambivalence about the 'bigger picture'. As a practice we were well placed to excel with our quality points but I started to feel concerned that this heralded fundamental changes at the core of general practice. I started to take a more critical view of an innovation which I had previously embraced as wholly positive, reflecting the prevailing enthusiasm for new technologies in the medical profession.

In 2007 I contributed to a successful bid to the UK Medical Research Council (under a 'new methodologies' call) for funding for a three year ethnographic study to explore the impact of the EPR in primary care settings (HERO – Healthcare Electronic Records in Organisations, MRC 07/133). I continued to work one day a week as a GP. We sought to build a rich picture or a "thick description" (Geertz 1973) of the EPR in its social context, exploring the working practices of those collaborating in clinical care. At the outset we acknowledged a dynamic and contingent relationship between 'macro' social structures and 'micro' social action and we embarked on the project with an aim of exploring the ways in which the EPR contributes to shaping professional roles, identities, relationship and working practices. I contributed to the development of an

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[2] Clinical audit is usually defined as "*a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change*" (National Institute for Clinical Excellence and Commission for Health Improvement 2002).

approach to analysis of this data set which draws on a sociological theory of organisational routines (Feldman 2003;Feldman and Pentland 2003;Pentland and Feldman 2005). Our protocol and methods for the HERO study have been published (Greenhalgh and Swinglehurst 2011;Swinglehurst, Greenhalgh, Myall, & Russell 2010). We have also published our ethnographic analysis of the 'hidden work' of receptionists and their contribution to the quality and safety of repeat prescribing in primary care – repeat prescribing being an example of a complex technology-supported social practice (Swinglehurst, Greenhalgh, Russell, & Myall 2011). I include these publications in Appendices 1-3.

In the HERO project, our interest lay primarily in the practices as organisations, or more specifically how the organisation (and organisational culture) *came about* through organisational processes, constructed through patterns of relationships and meaning – a 'way of life' (Czarniawska 2008;Ormrod 2003;Swinglehurst et al 2011). Our task was to experience how 'organisation' was accomplished on a day-to-day basis.

It was whilst doing planning work for the HERO project that I put together my proposal for nesting a PhD project within this broader ethnography and I was fortunate to receive a doctoral fellowship from the National Institute of Health Research which made this possible. I felt that I could enrich our ethnographic study with a more detailed analysis of the social impact of the EPR within the clinical consultation and was particularly interested in how the EPR contributes to shaping clinical interactions.

## 2.3 'Good' electronic record keeping as a profession-wide priority

One of the most widely articulated professional priorities in electronic record keeping is the need for comprehensive, accurate, complete records (Majeed, Car, & Sheikh 2008;Thiru, Hassey, & Sullivan 2003). This is based on a (largely) unquestioned assumption that the development of standards and improved coding in the EPR will result in better, safer and more efficient healthcare (Majeed et al 2008). The document '*Good Practice Guidelines for GP electronic patient records*' – now in its fourth version – asserts:

*There is a need to develop new guidance in areas such as high quality clinical records and data quality to facilitate records sharing, interoperability and communication within a clinical safety framework*

(page 11) (Department of Health, RCGP, & BMA 2011).

Identifying the barriers to clinical coding is thus regarded as the first step in addressing the problem of inadequate records (de Lusignan 2005;de Lusignan, Wells, Hague, & Thiru 2003). The implicit message is one which suggests that *if only we can improve the data entry then the full rewards of the EPR will follow.* These sentiments are reflected in the RCGP curriculum statement on *Information Management and Technology,* which informs training and assessment of GP registrars:

*General practice in the UK increasingly relies upon electronic storage of patient records and electronic communication of records. Each year 1200 people die in England and Wales as a result of medication errors. General practitioners need to understand the principles of good electronic record keeping. They should be aware of potential consequences of inaccurate, incomplete or ambiguous health data. General knowledge regarding the use of computers is desirable to at least European Computer Driving Licence (or equivalent) standard. Accurate and searchable clinical records cannot be maintained without a good knowledge of clinical coding systems, currently Read codes. NHS Connecting for Health and similar initiatives in the other UK countries will have a major effect on general practice in the coming years as paper record systems become unworkable and are phased out. The sharing of electronic records across organisational boundaries, as envisaged by NHS Connecting for Health, demands new ways of working in terms of record quality and information governance. Fulfilling contractual requirements is difficult without the effective use of clinical computer systems*

(last updated February 2009) (RCGP 2011).

The focus on concerns about data quality, coding and standards overlooks an important feature of the EPR – that the act of incorporating data recording (and retrieval) within the consultation is a process which places particular interactional demands on the clinician, and in different ways, the patient, and may change the nature of the consultation in important ways. Despite the widespread integration of the EPR in the consultation there is relatively little research which examines the discursive practices which constitute this 'work', a gap which I seek to address in this project.

I opened this thesis (page 12) with a quote from a report published in 1980 by the RCGP Computer Working Party (RCGP 1980). The two juxtaposed paragraphs within this quote identify a sense of the tension between the potential benefit that a structured EPR may offer, and the possibility that it may interfere with doctor/patient communication. Its authors assume a position that records *can* and *will be* complete, comprehensive and easily transferable between contexts, and yet express uncertainty about the possibility that incorporating a computer in the consultation *might* change communication. Twenty years after this document was published, the transfer of records via GP to GP transfer (GP2GP) had become possible in the NHS, but is still not widely implemented (NHS Connecting for Health 2010a). By contrast, regular input to the computer during the consultation has been common practice for some years (RCGP 2005).

The aforementioned RCGP curriculum statement (last updated in 2009, but still current) which runs to eighteen pages, contains just two short entries concerning the computer as part of the interpersonal interaction. It reads:

> *It is important that GPs should be able to…*
>
> *demonstrate how to use the computer in the consultation whilst maintaining rapport with the patient…*
>
> *demonstrate understanding of the importance of the concept of holism in, and its implications for, the patient's care, and ensure that the use of IM&T does not conflict with their holistic and patient-centred approach to patient care.*

Although somewhat buried within the document this clearly alludes to a potential conflict of competing interests in the consultation when computers are used. The commonly held assumption that data can be collected 'routinely' as suggested in the QOF guidance (see §2.4.3) in pursuit of a thorough, complete, coded record is a focus which overlooks the social interaction. In particular it overlooks the possibility that incorporating the EPR may fundamentally change the nature of this interaction.

In §4 I will introduce the methods which I have developed for use in this project to facilitate a detailed and nuanced analysis of the interactional work involved in

incorporating the EPR into the consultation, and how I have drawn on ethno-graphic observation to situate this within a wider appreciation of primary care practices.

In the next section I will consider the wider UK policy context within which my research is situated. This is relevant not only to the work that I have conducted as a researcher, but also to my role as a clinician and member of staff in general practice – a working context which I share with my research participants.

## 2.4  The UK policy context for implementation of the EPR

The integration of the EPR in UK general practice is set against a complex backdrop of various interrelated policy initiatives, including those which explicitly embrace investment in IT and others in which the requirement for IT is implicit. On the whole the policy context is one in which EPRs are presented as the solution to many of the problems in the NHS, promising safety, better integration of care, greater efficiency and cost savings.

I do not intend to map out a comprehensive history of the development of the EPR; for a readable and succinct account see Berg and Winthereik (Berg and Winthereik 2004). However, I will present a brief résumé of the UK situation to provide a context within which to situate this work.

### 2.4.1  The introduction of computers into general practice

Long before there was any political drive for the EPR, there was interest amongst pioneering GPs in exploring the potential of electronic records to replace the traditional paper based A5 Lloyd George envelope. The British Medical Journal published a paper in 1976 describing early use of 'real time' computer-maintained clinical records within a single GP practice in Exeter, before personal computers became widely available (Bradshaw-Smith 1976). The 1980 RCGP report (*Computers in Primary Care*) – to which I have already referred – welcomed the adoption of new technology as a necessary part of changes anticipated in service provision, and was broadly positive about the potential benefits that may be gained through computerisation (RCGP 1980).

However, it was not until the late 1980's and early 1990's that computer use became more widespread. Under the 1987 Computer Reimbursement Scheme, GPs were able to receive reimbursement from Health Authorities for a proportion of the cost incurred in buying, leasing, installing, upgrading and maintaining computer systems, but computer use remained limited, in most practices, to appointment scheduling and repeat prescribing activities.

## 2.4.2 'New Labour' and the 'modernisation' of the NHS

The election of Tony Blair as Prime Minister in 1997 and the re-branding of the Government as 'New Labour' was soon followed by a radical reorganisation of the NHS and a number of important changes in NHS policy, the implementation of which relied heavily on technological development and information management in particular. The *New NHS: modern, dependable,* a White Paper published in 1997 outlined a ten year programme in which a modern dependable NHS was identified as one which would "*capture developments in modern medicine and information technology*" (Department of Health 1997). It identified the need for an "*information superhighway*" to support a performance driven NHS with a commitment to "*measuring what counts*" – incorporating performance targets, benchmarking of performance and publication of comparative information. The underpinning discourse was one of *high quality care*, where the notion of 'high quality' incorporated a shift towards the development and implementation of normative national standards and guidelines of care (for example through National Service Frameworks).

The concept of the information superhighway was further elaborated in the *Information for Health Strategy* published in 1998, presenting the electronic health record as crucial to seamless care by ensuring relevant information is available to clinicians 24 hours a day (Department of Health NHS Executive 1998). Although – almost 14 years on – this vision is yet to be realised, it set out an agenda for a growth of investment in information technology which was refined in *Delivering 21st Century Support for the NHS* (Department of Health 2002a) and led to the establishment of the *National Programme for Information Technology* (NPfIT), also in 2002. At the heart of this programme lay the

commitment to a fully networked electronic health record, accessible from all points of care (Connecting for Health 2005). This ambitious and controversial programme, which Brennan referred to as the "biggest ever" civilian IT project (Brennan 2005;Brennan 2007) came with promises to revolutionise healthcare, by allowing information sharing throughout the NHS on an unprecedented scale (Connecting for Health 2005).

A parallel related policy initiative outlined in the *NHS Plan* (2000) proposed stepwise reform of the NHS towards a more 'patient-centred' service shaped around patients' convenience and concerns, one in which patients would have "more say and more influence" – effectively framing the patient as a consumer of health services (Department of Health 2000). This document embraced what was then a relatively new concept of *clinical governance*, through the development of national standards, introduction of incentives to improve performance, and systems for monitoring and inspecting performance. Clinical governance may be defined as "*a system through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish*" (Scally and Donaldson 1998).

In 2000, the government removed the legal obligation for paper based medical record systems, and with it the requirement for dual recording which had thwarted GPs' early attempts to shift towards paperless practice. However the most significant policy development was the arrival of the *New General Medical Services Contract* in 2004 (Department of Health 2003). One of many changes heralded by this initiative was the shift of responsibility for funding the purchase and maintenance of IT systems away from GPs and practices towards Primary Care Organisations (PCOs). The PCOs would become the owners of the technology. Systems would need to be accredited against UK-wide standards and would become essential if practices were to meet the requirements of a key new component of the new GMS contract, the Quality and Outcomes Framework (QOF).

### 2.4.3 The Quality and Outcomes Framework (QOF)

QOF is (ostensibly) a 'voluntary' incentive scheme designed to encourage practices to attain clearly defined quality standards (General Practitioners Committee 2009), and has undergone several revisions since it was first implemented under the new GP contract, with some standards being 'retired' and new ones introduced. The EPR facilitates the collection of searchable coded data demonstrating GPs' performance against a range of clinical and organisational performance indicators. This activity is rewarded financially and QOF now constitutes approximately 25% of practice remuneration (and GP pay). This is a huge incentive to take seriously the challenge of demonstrating performance through careful data recording, and I would argue renders the voluntary nature of the scheme questionable. As an editorial in the British Journal of General Practice (aptly entitled "*The Quality and Outcomes Framework: what have you done to yourselves?*") stated: "*What starts as an incentive becomes coercion when it represents such a large proportion of practice income that its loss becomes a credible threat*" (Mangin and Toop 2007).

Although much of the EPR use in the consultation is not directly linked to the QOF, it is significant that it is the demands of the QOF that have been at least partly responsible for bringing the EPR more centre stage in general practice in recent years. Electronic data recording has become a pressing concern for clinicians, managers and policy makers alike. Ostensibly this data recording emerges effortlessly from regular clinical care. The QOF guidance opens with a number of "principles" which include: "*Data should never be collected purely for audit purposes*" and "*Data required for audit purposes should be data routinely collected for patient care*" (General Practitioners Committee 2009). In practice, clinicians and managers invest considerable resources into ensuring robust data capturing systems are in place. This is a high stakes activity, especially in an NHS where competition between practices is being encouraged through activity such as the publication of QOF performance (NHS - The Information Centre 2009) and initiatives such as NHS Choices (NHS 2009), in which patients are encouraged to choose their general practice on the basis of selected metrics.

### 2.4.4 The NHS White Paper and the NHS Bill

After the 2010 UK general election, with the UK in the midst of economic recession, the Conservative and Liberal Democrat parties entered into a Conservative-Liberal Democrat coalition with a remit of government until 2015. They identified a need for an NHS spending review and announced a series of sweeping legislative reforms which has been described as "*the most controversial reform in the history of the NHS in England*" (Pollock and Price 2011b). The NHS White Paper '*Equity and Excellence: Liberating the NHS*' was published in July 2010 and was followed in January 2011 by the introduction of the Health and Social Care Bill to the House of Commons (Department of Health 2010a;Department of Health 2011).

The NHS Bill proposes to pass responsibility for overseeing NHS funds to clinical commissioning groups which all GP practices would be mandated to join. In addition, it proposes that the system of public funding providing comprehensive healthcare to all would be replaced by a competitive market in which 'any qualified provider' may provide health services. Critics argue that this heralds an 'inevitable' shift towards privatisation (Peedell 2011).

In October 2010, as part of the programme of reform, the Department of Health published a related consultation document "*Liberating the NHS: An Information Revolution*" which argues that the legislative changes proposed for the NHS depend on "*transforming the way information is accessed, collected, analysed and used*" (page 2) (Department of Health 2010b). It is beyond the scope of this thesis to detail the complexities of the NHS Bill (and related publications) or the responses of many professional bodies to its content. However I will summarise the proposals for this 'information revolution' and some of the changes which have come about on the change of government which are relevant to the arguments I develop later in this thesis.

A review of the National Programme for IT (NPfIT) (see page 27) concluded that the centralised national approach should be replaced with local providers and local software solutions, with the aim of *interoperability* rather than a unified 'one size fits all' approach. The National Programme folded in September 2010.

However the zeal for data capture (at the point of care) and (specifically) high quality, nationally standardised, comparative data remains strong, with much emphasis on the value of aggregated data sets and the need for a 'presumption of openness' – including routine access to EPRs by patients. Of note, there is a special emphasis on *centralised data collection* for which a new body, the Health and Social Care Information Centre will be responsible. It is assumed that this will lead to better shared decision making, value for money, efficiency gains, better benchmarking of performance and quality outcomes, more choice for patients, and high quality commissioning of services.

The document states that "*we need to establish a principle of recording data once and using it in many ways*" (page 52) and that:

> *The information revolution starts from the premise that the primary use of information is to support the giving of high quality care. The most important source of data is the patient or service user's care record, generated at the point of care.*
>
> *This record also provides much of the data needed for other, secondary purposes. In many cases, the way that data is recorded at the point of care and then moved around the system needs to change significantly…*
>
> *Making centrally held datasets routinely and publicly available will encourage better data recording and thus drive up data quality. Allowing open access to centrally held datasets will inevitably improve understanding about what is really happening in care services and how they can be further improved. This intelligence will enable meaningful benchmarking of performance and quality outcomes. When published in easily understandable forms, it can help people to make meaningful choices about how, when and where they receive care*
>
> (pages 12-13) (Department of Health 2010b).

The document makes a particular point of explaining that this standardised, readily comparable data will only be available for the variety of uses which are intended if there is a move towards increased structuring of records. It regards the "*300 million consultations that take place yearly within general practice*" as the main source of such data, stating that "*high quality commissioning will depend upon information provided as a by-product of individual clinician-patient decisions*" (page 33) (Department of Health 2010b).

## 2.5  The theoretical context for this research

I will end this chapter with a very short introduction to the theoretical context for my work. One of the challenges I faced as I developed my research proposal was the need to identify an approach to studying the EPR which would allow me to explore its influence on the personal work of providing clinical care in the consultation, but which was also sensitive to the 'bigger picture' which was beginning to unsettle me (§2.2). It is not my intention to describe my theoretical perspective and methodology in detail here (this will be the focus of §4) but one important aspect of the context for my work is the emergence of 'linguistic ethnography' as a recent theoretical and methodological development.

Linguistic ethnography has grown out of an appreciation of both the strengths and the pitfalls of several different orientations towards – and methods of analysing – language and communication in the social sciences. For example, much social science research involves the analysis of interview data in which the talk of interviewees is usually taken at its face value and assumed to represent a particular pre-existing set of opinions, untainted by the interview process itself. Data are coded and brought together into themes, but the interview itself is not considered as an interactional event or as a context which may itself shape the emerging talk in important ways. Other methods, such as conversation analysis (§4.4.1) pay detailed attention to the interaction as emerging context but pay little regard to the wider social, historical and political context within which interactions occur. There are then other approaches which pay great attention to the wider social, historical and political context but limited attention to the detail of the local interaction and the meanings which emerge for participants at this local level.

Linguistic ethnography seeks to engage with the complexity of talk and communication by investigating both the detail of local interactions as they occur and also the wider social, historical and political context within which the social interaction takes place. It assumes that it is as important to investigate the context for communication as the communication itself.

I offer this thesis as a contribution to this emerging school of thought, and this has had several implications for my work. Firstly, I have not been able to reproduce a tried and tested method for data collection or analysis, nor have I been able to draw comparisons with previous linguistic ethnographies of the EPR, as none exist to my knowledge. One of my responsibilities as a researcher (in the words of my supervisor) is that "*linguistic ethnography must be shown to work rather than assuming it works*" (Celia Roberts, personal communication). At times this has felt rather risky and disorientating. However I have benefited greatly from the growing interest in linguistic ethnography of researchers from many diverse disciplinary backgrounds. I have been able to take part in scholarly debate in the context of numerous workshops, courses and conferences. Many of these have been facilitated through a Researcher Development Initiative funded by the Economic and Social Research Council, called 'Ethnography, Language and Communication' (2007 – 2010) (Researcher Development Initiative 2011) and the linked UK Linguistic Ethnography Forum (UKLEF) (UKLEF 2011). This interdisciplinary collaboration has greatly enriched my professional experience, has prompted me to ask questions of my work which I may not otherwise have thought of and has exposed me to new ways of thinking about the world which have been both challenging and enlightening. This collaboration has been important in helping me to shape and refine the project as I have gone along. I present a list of conferences at which I have presented my work in Appendix 5.

## 2.6  Summary

In this chapter I have set the scene for my work by exploring some of the context within which it has developed, ranging from my own personal prof-essional context to matters of wider professional, policy and theoretical context. It is in this meeting of several different threads of context that my research derives much of its relevance at this point in time and which – I hope – may offer scope for informing clinical practice, social theory and policy. In the next chapter (§3) I will review the background literature which informs my work before going on to describe my research design.

# 3  A review of the literature

## 3.1  Introduction

One of the major challenges to the researcher of the EPR is the wealth of literature available spanning many different disciplines, each with different conceptualisations of what the EPR is and what might be gained from investigating it. Within the discipline of health informatics alone there are over two thousand published studies, most of them testing a hypothesis in which technology is either 'present' or 'absent', with a view to assessing particular measurable outcomes. The vast scope of this literature has made it necessary to narrow my selection of studies and focus on particular areas of interest for inclusion in this thesis. I have contributed separately to a systematic review of the EPR literature in which we sought to tease out the different meta-narratives (overarching storylines) informing research on the EPR (Greenhalgh et al 2009). I will refer to this briefly as I introduce the challenge inherent in the act of defining the EPR. I will then review the literature on the use of medical records and computers in the consulting room, and the notion of the computer as a 'third party' in the consultation.

My review of the literature extends beyond that which I include in this chapter, and is also woven through the text of later chapters where I feel this is more appropriate. For example, I include in the next chapter (§4) a review of the literature on the use of video as a research method. This approach reflects my experience of the literature review process. Although I conducted a literature review early in my research programme – which informed the aims and design of my study – the iterative nature of the study has meant that there has been an ongoing dialogue between the evolving data collection, rounds of analysis and the identification of additional relevant literature. What is presented here as an apparently linear progression from literature review to methodology / methods to analysis in consecutive chapters of my thesis does not reflect how I experienced this process in practice. I will discuss this observation further in the next chapter (§4).

## 3.2 The challenge of defining the electronic patient record

The EPR is difficult to define. This is partly because it encompasses a wide variety of purposes and partly because the EPR is always evolving as technology advances, incorporating new functionalities. It is not a single discrete entity. The term *electronic patient record* is used in different contexts to mean different things, from an isolated file of computer-held information on a single patient (with or without decision support functions) to a nationally networked database offering built-in interoperability functions with other technologies and systems, oriented toward secondary uses such as research, audit and billing (Greenhalgh et al 2009). Coiera suggests the term 'EPR' is used to describe "*that technology which supports a range of clinical activities which use and communicate information*" (Coiera 2003).

Most biomedical literature (and some sociological literature) sees the EPR as a simple 'container' or repository for information and regards this information as a 'representation' of the reality it seeks to describe. This extract from a paper in the International Journal of Medical Informatics is illustrative of this view:

> *The term electronic patient record (EPR) means the electronic collection of clinical narrative and diagnostic reports specific to an individual patient. A true EPR should allow physicians and nurses to practice in a paperless fashion. The wide adoption of Internet technologies should allow truly distributed sharing of patient data across traditional organizational barriers. Hence, the meaning of an EPR, as a representation of documents, should be transformed into a collaborative environment that supports workflow, enables new care models and allows secure access to distributed health data*
>
> (page 77) (Safran and Goldberg 2000).

Beyond the predominantly positivist biomedical informatics tradition, there is a complex and diverse literature which incorporates many different perspectives on what the EPR is. Berg points out that different authors, different countries, different vendors all use different terminologies for their healthcare IT products and that the medical informatics literature is replete with what he calls "definition quarrels" over whether we should refer to the electronic *patient* record, the electronic *health* record or the electronic *medical* record, for example (Berg

2004b). While Berg chooses to distance himself from such quarrels he points out that it is important to realise that what is precisely meant by a label such as 'medical record' is not self-evident (Berg 2004b).

The quote by Berg which I included in the introduction to this thesis (page 12) presents a sociotechnical perspective on the medical record. He highlights the complexity of the medical record, especially the way in which the role of the record extends beyond that of simply summarising or representing a patient's care. Indeed he states explicitly that the record does *not* represent the work, but is *constitutive* of the work itself (Berg 1998). He and others who draw on a practice-based approach known as actor-network-theory (Latour 1992) have conceptualised the EPR as an *actant* in a network, with both humans and non-humans (e.g. technologies and other artefacts) interacting together within a coherent dynamic network, the latter being the unit of analysis (Berg 1998;Bruni 2005). Several authors have adopted this social constructionist orientation towards the EPR (Davidson and Reardon 2005;Iedema 2003;Orlikowski and Iacono 2001) regarding it as an example of what Harré would call a "social substance" – in that it belongs to a category that is defined in terms of the properties of a social world, or embedded in a narrative (Harré 2002). From this perspective the EPR only makes sense when it is understood within the social context of which it forms a part, in relationship with the practices of those who interact with it (Bruni 2005).

The notion that the EPR may be regarded as a social construction is not a peculiarity of electronic records but may be applied to records and record keeping in general. Whether a record is electronic or not, it *does* things. Trace has drawn attention to the notion that what is recorded is never simply 'what happened' but that one needs to bring to the understanding of records a framework which embraces the record as a socially constructed and *maintained* entity, a framework that allows for an understanding of both its technical and social nature (Trace 2002). Cochran et al., adopting a similar approach regard records as "proactive" and bring in the idea of *intentionality* in record keeping (Cochran, Gordon, & Krause 1980). They argue that a record keeper's plans, goals, intentions and assumptions precede and therefore shape a record – that

people assemble and use records with some goal in mind (Cochran et al 1980). Records may be proactive, but they do not act alone.

Østerlund, drawing on the work of Lave, (Lave 1988) Orlikowski (Orlikowski 2002) and Giddens (Giddens 1984) conducted ethnographic research in which he approached documents within a framework of 'knowledge-in-practice' (Østerlund 2004). In his work on documenting practices across medical work settings he draws attention to the primary role of documents (including the EPR) in 'organising practice', conceptualising documents as *itineraries*, which different professionals "relocalise" within their own practice to allow coordination of activities and to *get things done.* Here the 'P' or the 'Patient' in EPR is secondary to the 'Practices' of which it is a part (Østerlund 2004). We might consider that even the term *record* is a misnomer, implying (as it does) a certain transparency which may conceal the complex meaning-making practices that go into its production and use.

In parallel with the earlier stages of this research I contributed to a systematic literature review of both biomedical and social science research on the EPR, which draws on insights from many different research traditions (Greenhalgh et al 2009).  The purpose of this review was not to add to an already burgeoning literature focused mainly on experimental studies (this already included over twenty systematic reviews and 2000 empirical studies, mostly in the health informatics literature) but to explore the wider, more heterogeneous qualitative literature in order to make sense of the different disciplinary approaches and traditions informing research on the EPR. In particular we wanted to uncover the different assumptions underlying these various approaches to EPR research.

This review has highlighted several key tensions and paradoxes in the research literature on the EPR, including different conceptualisations of the EPR, the EPR user, the organisational context and the nature of clinical work itself. This is summarised in Table 1 (Greenhalgh et al 2009).

**Table 1. Seven key tensions and paradoxes in EPR research**

| Conceptualisations of the EPR and its implementation | Key tension | Explanation |
|---|---|---|
| The EPR itself | "container" or "itinerary" | Is the EPR a passive vehicle onto which data are entered – or is it an active player in the social practice of clinical care, shaping and constraining the nature of clinical work and offering opportunities for the [re]structuring of roles and relationships? |
| The EPR user | "information-processor" or "member of socio-technical network" | Is the user of the EPR best conceptualised as an autonomous practitioner who processes information or as part of a dynamic network of people and technologies through which information and communication flows in complex ways? |
| Organizational context | "the setting within which the EPR is implemented" or "the EPR-in-use" | Is context something that can be analytically separated from the EPR – or is it constituted as the EPR is used (and hence inseparable from it)? |
| Clinical work | "decision-making" or "situated practice" | To what extent can clinical work be viewed as a series of discrete decisions as opposed to being a complex, context-bound social practice |
| The process of change | "the logic of determinism" or "the logic of opposition" | To what extent is change a politically neutral exercise in project management as opposed to inherently conflict-ridden? |
| Implementation success | "objectively defined" or "socially negotiated" | To what extent are the criteria for 'success' in EPR implementation self-evident and uncontested (as opposed to differently defined by different stakeholders) |
| Complexity and scale | "the bigger the better" or "small is beautiful" | To what extent do large-scale EPR systems achieve economies of scale and better integration, and to what extent do they merely increase complexity and cost while reducing the facility for local tailoring? |

Within different research traditions there are different perspectives on the EPR and these are accompanied by different perspectives on the EPR user, the wider context and the nature of organisation, for example – since they correspond to different underlying philosophical assumptions and methodological

approaches. They constitute different *meta-narratives* (overarching storylines) corresponding to different scientific paradigms (Kuhn 1962).

Our work suggests that there is a responsibility on the EPR researcher to articulate as clearly as possible the philosophical assumptions that underpin the research endeavour, recognising that these different scientific paradigms are to some extent incommensurable. I will return to this in §4.2 when I discuss my methodology, but the main point I wish to make here is that there is no single succinct definition of the EPR and no single research paradigm which yields definitive findings. This is not just because the EPR is a complex entity, but because the act of defining the EPR is one which incorporates adopting a particular philosophical stance towards it. The definition of the EPR emerges partly from the way in which it is investigated by the researcher and is inevitably related to the way in which the EPR user and the surrounding context is conceptualised.

Similar observations may be applied to the clinical consultation, especially the extent to which it is appropriate to regard the consultation as discrete and separable from the wider organisational context. This wider context includes not only the organisation as it exists beyond the consulting room (for example within a general practice) but also the longitudinal or temporal context of previous (and potentially future) consultations between clinician and patient. I will explain this further when I discuss my own theoretical perspective and how this corresponds to my orientation towards the EPR and the consultation in this piece of research (§4.2).

## 3.3  Medical records in the consulting room

The EPR has not appeared from nowhere but has its history in paper medical records dating back to the early 1900s, a history which Berg characterises as a process of *negotiation* in which both the technology and the practices associated with its use are changed and become intertwined (Berg et al 2004). In 1968, Laurence Weed described an approach to medical record keeping as an organised 'scientific' endeavour in its own right; his proposals for *problem oriented medical records* (POMR) (Weed 1968) and the SOAP framework

(Subjective; Objective; Analysis; Plan) for medical progress notes have influenced subsequent medical record-keeping practices (Weed 1969). The SOAP approach has been the subject of some criticism, especially the distinction which is drawn between the 'subjective' account (the account given by the patient) and the 'objective' account (that given by the clinician) (Donnelly 1997;Donnelly and Brauner 1992). Donnelly argues that:

> *categorizing what the patient says as "subjective" stigmatizes the patient's testimony as untrustworthy. On the other hand, calling physical findings and laboratory studies "objective data" gives an air of infallibility to the quite fallible observations of physician and laboratory*

(Donnelly 1997).

Garfinkel, in his classic 1967 paper "*Good" organizational reasons for "bad" clinic records,* drew attention to the ties between records and the social system that service (and is serviced by) records, highlighting the way in which records do not so much *reveal* an order of interaction but *presuppose* an understanding of that order for a correct reading (Garfinkel 1967a). He argued that medical folder contents can be understood by clinic members because they develop a *documented representation* of what the clinic-patient transaction consists of as an orderly understandable matter – present meanings are constructed within the context of interpretation. He says that the "*contents of a folder may jostle with each other in bidding to play a part in a pending argument."*

In the 1980's, Heath examined the importance of the medical record card as a resource in the organisation of professional conduct – regarding the record as a product of social action, produced and interpreted through an orientation to a set of shared professional practices (Heath 1982). Like Garfinkel, he observed that whilst at first glance the entries in paper medical records appear brief, "almost crude" and lacking detail, they are nevertheless used repeatedly and successfully in medical consultations for many purposes. He pointed to an internal ordering in which entries are mapped in regular ways and in which the sense of individual items (e.g. 'depressed', 'feeling tired') is not fixed, but is generated partly through the ways in which they are mapped and organised, both within and across entries. Notes may be economical, but they are the

result of the doctor's practical reasoning and sensitivity to the understanding of colleagues, the inferences they will draw. They are, says Heath, meaningful in context and adequate for practical purposes (Heath 1982;Heath and Luff 2000a).

The incorporation of paper medical records in the consultation present some (but by no means all) of the challenges and opportunities that computers present. Heath has studied the coordination of verbal and non verbal behaviour between the doctor and patient, drawing on previous work by Goodwin on gaze elucidation devices (Goodwin 1982) and Goffman's notion of participation framework (Goffman 1981a). He found that aspects of a doctor's visual behaviour constrain patient behaviour in particular ways and that patients coordinate their own verbal and nonverbal activity with the nonverbal behaviour of the doctor (Heath 1984;Heath 1986). Specifically he studied the importance of the direction of the doctor's gaze and the strategies which patients employ to encourage doctors to display attention or recipiency, when the doctor's gaze is instead focused on the records (Heath 1984;Heath 1986). Strategies which patients were found to use included: withholding a reply to a doctor's utterance until receiving the gaze of the doctor; pausing part way through an utterance until the doctor's gaze is secured, before continuing; making successive restarts and hesitations at talk, or delaying an utterance by recycling its components, and only continuing when gaze is secured; employing a body movement (e.g. shift of posture or arm movement). When patients employed body movement, this appeared to be designed to assist the talk with which it occurred (not to detract attention away from it) and to establish or maintain the doctor's involvement (Heath 1984;Heath 1986).[3]

Robinson, in a study of 'openings' of clinical consultations (using conversation analysis) confirmed previous observations that doctors' and patients' coord-inated practices of gaze and bodily orientation are highly consequential for the organisation of the interaction (Robinson 1998). He also showed that doctors

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[3] In conversation analysis the use of the word 'design' does not imply a conscious cognitive process of planning before acting, but is used descriptively in a way which draws attention to the coordination of interlocutors' turns in interaction.

and patients both perform regular (non collaborative) tasks in preparation for the chief complaint. This included doctors gazing at the medical records as an indicator that they were preparing for the chief complaint but not yet ready to deal with it. Robinson also suggests that patients are 'distributed' between what he calls the "patient embodied" and the "patient inscribed" (i.e. the patient in the record), and that it is likely that patients understand 'gazing at the record' (at least in the opening phase of the consultation) as part of the relevant preparation for dealing with their chief complaint, and not simply as a display of 'disengagement'. His work supports an argument against any simplistic correlation between direction of gaze and assumptions of engagement in the activity of consulting.

Building on this work, Ruusuvuori studied the part of the consultation in which patients describe the reason for their visit, also using conversation analysis (Ruusuvuori 2001). She found that when doctors disengage with patients by turning their gaze to the records during this part of the consultation, patients often respond by becoming dysfluent in their explanation of the reason for their visit. In 21 out of 51 cases where this occurred, doctors continued to gaze at the medical records (thus failing to respond to these dysfluencies as one might expect in regular conversation). She concludes that while Robinson may be correct to point out that the patient remains the focus of interest when the doctor shifts gaze from patient 'embodied' to patient 'inscribed', this orientation may not be transparent to patients (Ruusuvuori 2001). What is accepted as relevant and expected in the opening of the consultation is not necessarily accepted in the same way at crucial moments of problem presentation.

It is perhaps not surprising to discover that even before computers arrived in the consulting room, the use of medical records was important in shaping inter- action to some extent between doctor and patient. However, there are important differences between paper and electronic records which open up the possibility that computers may be far more influential in this shaping. I will introduce the research which has explored the EPR in this context in the following section.

## 3.4 The computer in the consulting room

As with paper records, the introduction of a computer into the consulting room is known to shape the production and coordination of action between patient and practitioner (Heath, Luff, & Sanchez Svensson 2003). Many of the recent empirical studies of the computer which claim to investigate the 'impact' of the computer on communication (usually between doctor and patient) do so from a perspective that *separates out* the computer from the communication of which (I suggest) it forms an integral part. The underlying issue I highlight here relates to different possible ontological and epistemological assumptions underlying different research approaches. I will discuss this again in more detail in §4.2.

In a recent review of such studies, for example, Shachak and Reis conclude that computer use has a

> *positive impact on information exchange, but exerts a negative influence on patient centredness… The negative impact on communication can be partially overcome by spatial organization of the doctor's office and by physician computer skills and behavioural style*

(Shachak and Reis 2009).

The authors do not offer any clarity on how these categorizations (which are social constructions based on normative assumptions about how the consultation 'should' be) may be discerned. Neither is it clear how one can make evaluative judgements about the role of the computer – as opposed to myriad other factors – in such categorizations. A particular limitation of many of the studies which have been conducted to date is that the question being asked is often somewhat positivist in its orientation ("What does the computer cause to happen?") and little attention is paid to the social complexity of interaction itself, especially the possibility that the computer may be integral to how the interaction unfolds. At the same time the solution proposed to the problems identified (which are assumed to be caused by the *computer* itself) invariably lie with the *doctor*.

There are also studies which effectively turn this question round and ask instead "Do particular *kinds* of consultation impact on the use of the computer?"

For example, one author concluded recently that in consultations which have a "significant psychological component", doctors reduce the proportion of time spent using the computer (Chan, Stevenson, & McGlade 2008). This approach, I propose, suffers from similar limitations. Apart from the difficulties inherent in making judgements about what constitutes a 'significant psychological component', or 'computer use', there are more fundamental assumptions within a study of this type. These relate to the notion that one can break down a consultation into clear categories or typifications, that one can link one category with another, and then further infer direction of effect and causation between these categories.

One small early video study, carried out in a GP practice as it introduced computers into the consulting room suggested that doctors spent twice as long using the computer as they did their paper notes, and that this was achieved either by increasing the total time of the consultation, or devoting less time exclusively to the patient (or both) (Herzmark, Brownbridge, Fitter, & Evans 1984). Another study confirmed that computer use required a greater proportion of the overall encounter time and increased the proportion of "non-interaction time" (defined as time that the doctor used the record exclusively and had no verbal or eye contact with the patient) (Warshawsky, Pliskin, Urkin, Cohen, Sharon, Binztok, & Margolis 1994). Doctors were observed to continue talking with patients while writing (which they call a "conversational style") but moved into a pattern of "blocked use" when using computers (establishing a number of items of information and then entering data during a block of time during which there was minimal attention on the patient). This change of style was observed to interrupt the flow of ideas and disrupt communication (Warshawsky et al 1994). Margalit made similar observations in an analysis of videotapes of Israeli physicians in consultation, finding that they spent approximately 25% of their consultation time gazing at the computer screen (Margalit, Roter, Dunevant, Larson, & Reis 2006). Time spent gazing at the computer was inversely related to engagement in psychosocial questioning and emotional responsiveness, measured using an adaptation of the Roter Interaction Analysis System (Roter and Larson 2002). Time spent "keyboarding" was also inversely related to the

contribution of either doctor or patient to interpersonal dialogue (Margalit et al 2006).

Als, who studied 39 video consultations identified the computer as a "veracious character" or a "magic box" – something to which the doctor might nod or point whilst presenting facts derived *not* from the computer itself, but from the GP's own abstractions (Als 1997). She suggested that such actions may give medical statements a higher value. She also observed computer use as a way of obtaining "time out", or thinking time. Although she did not carry out a detailed micro-analysis of talk, she was able to identify conversational changes associated with computer use which suggested that patients synchronised their talk with pauses in the GP's computer work. The rhythm of conversation also changed with computer use (Als 1997).

The nature of this synchrony between patients and their doctors' computer use was a particular interest of Greatbatch et al., who made a significant contribution to the field in the 1990's, when computer use was gathering momentum in the UK context (Greatbatch 1992;Greatbatch 2006;Greatbatch, Heath, Campion, & Luff 1995;Greatbatch, Luff, Heath, & Campion 1993). The work of Greatbatch is important partly because it included an analysis of video-recordings of doctor-patient interactions occurring in a practice *before and after* the introduction of computers in that practice, and partly because it focused on the way in which computer use and communicative conduct between doctor and patient are coordinated and shaped by reference to each other. This is a different perspective from the relatively positivistic or deterministic approach in which the computer is regarded as 'outside' of the communication and causal of particular effects; it acknowledges the interaction of clinician, patient and computer as a collaborative one (Greatbatch 1992;Greatbatch 2006;Greatbatch et al 1995;Greatbatch et al 1993). They used methods of conversation analysis (CA) and ethnomethodology which I will describe very briefly here. I will revisit CA again in §4.4.1.

Garfinkel coined the term 'ethnomethodology' to describe the "*investigation of the contingent ongoing accomplishments of organised artful practices of*

*everyday life*" (Garfinkel 1967b). Central to his method was his observation that the activities whereby members produce and manage settings of organized everyday affairs are identical with members' procedures for making those settings "account-able". By account-able he meant "observable and reportable" and thereby "available to members as situated practices of looking-and-telling". These practices consist of an endless, ongoing, contingent accomplishment which constitutes what Garfinkel calls the "achievement of ordinariness" (Garfinkel 1967b).

Conversation analysis, developed by Sacks and colleagues Schegloff and Jefferson in the 1960's, extends Garfinkel's work further and assumes that talk itself is inherently orderly, that interlocutors share the practical reasoning that is required to enable conversation and that interlocutors are accountable to each other in talk. It incorporates a detailed micro-analysis of turn taking, overlapping speech and pauses (Sacks, Schegloff, & Jefferson 1974). 'Turns' at talk are assumed to be orientated to preceding talk, and also 'project the relevance' of subsequent talk by the next speaker. Thus, this 'sequential positioning' of turns in talk is an object of study (Heritage 2001). Conversation analysts distinguish between what they call 'distal context' (such as social class or the institution in which the interaction occurs) and 'proximate context' (the immediate features of the interaction) which is seen to emerge in and through the talk. Analysts committed to the methodology of CA argue that it is only the *proximate* context which is relevant to analysis (Schegloff 1992). The focus of analysis is therefore a very detailed, but rather narrowly defined study of talk-in-interaction.

Greatbatch studied communication around prescribing, this being the main activity for which computers were used in the consulting room at the time of his research. The situation is now very different, with computers being used almost universally for all aspects of medical record keeping. However, the observations Greatbatch made in the early days of computers in the consulting room were groundbreaking and important. He found that both the initiation and extension of patients' unsolicited turns at talk (i.e. those utterances which were not solicited by the doctor) were recurrently synchronised with the doctor's use of the computer (Greatbatch 1992;Greatbatch et al 1993). The findings suggested

that patients monitor doctors' bodily conduct, to identify upcoming boundaries in keyboard use in a way which avoids interrupting an activity in progress. Furthermore they are able to anticipate these boundaries *in advance of their occurrence* by making what he calls "boundary projections". Close study of the videos revealed that patients were able to base their projection of completions of keystroke sequences on subtle aspects of the doctor's bodily conduct and other cues. For example, these included movement of hands over keys to the carriage return key; a more forceful depression of the return key; a louder key stroke; indicators suggesting temporary disengagement from computer use, such as a shift of gaze from keyboard to screen. Patients appeared to time their questions in ways which caused minimal disruption to the computer-based activity. The more a doctor succeeded in 'backgrounding' the use of the computer, the less the patient appeared to be constrained by it in his or her own interactional moves (Greatbatch et al 1995).

Greatbatch also found that the demands placed on doctors by their computer systems resulted in doctors engaging in a variety of activities which undermined and disrupted their communication with patients as they displayed a preoccupation with the task of issuing a prescription. For example they: remained silent or confined themselves to minimal responses to patients' utterances (where a range of alternatives was possible); delayed responses until they had completed a sequence of keystrokes or checked something on the screen; produced talk with extended delays as they awaited screen changes or completed sequences of keystrokes or tried to figure out what the system was doing or required of them; confined their visual attention to the monitor and keyboard; abruptly shifted topic in order to elicit information that was required by the computer system; glanced at patients while a screen change was in progress, but then immediately returned their gaze to the monitor as the screen-change was completed (Greatbatch et al 1995;Greatbatch et al 1993). The latter phenomenon has since been referred to as maintaining 'peripheral awareness' (Heath et al 2000a). Unless doctors suspended the act of prescribing for extended periods of time (in order to attend to the patient

exclusively) the interactional conduct of both doctor and patient were structured around the use of the system.

By contrast, when Greatbatch compared videos of prescriptions produced with pen and paper he found that doctors were more able to delicately interleave their participation in writing and interpersonal interaction (Greatbatch 1992;Greatbatch et al 1993). The activity of writing prescriptions was adapted to (and structured around) the demands of the social interaction – rather than the other way round. Patients did not recurrently attempt to coordinate their talk with boundaries in doctors' writing. This contrasts with the findings of some of the research discussed in §3.3 on paper records but this may relate in part to the timing of the prescribing activity within the consultation.

Greatbatch identified paper as having greater *ecological flexibility,* allowing it to be moved around the environment (e.g. it can be placed at the corner of a desk between doctor and patient requiring minimal shifts of gaze or bodily orientation) and greater *interactional flexibility* (a doctor can write a document while talking, without having to monitor whether the information has been accepted, as paper-based prescriptions (unlike computers) provide no response (Greatbatch et al 1993). Luff argued, in 1992, that this inherent flexibility might account for the relative resilience of paper in general practice settings even after EPRs are introduced (Luff, Heath, & Greatbatch 1992). In addition, paper documents *co-locate* reading and writing. The physical separation of monitor and keyboard (i.e. reading and 'writing') requires shifts in visual attention which undermine a doctor's ability to delicately coordinate reading and writing with the contingent demands of the interaction (Greatbatch 2006). Greatbatch was not suggesting that doctors are *unable* to interleave text-based activities with their interaction, but notes that displays of *pre-occupation* with text-based activities were more common when prescriptions were produced using a computer than when written by hand (Greatbatch 2006).

Further analysis revealed that doctors would routinely organise their information-giving about prescriptions to correspond with the details they were entering into computer fields (Greatbatch 2006). He eloquently described this as

"*seeking to reconcile the potentially competing demands of their talk-based and computer-based activities by minimising the disjuncture between them*". Doctor talk related to prescribing, but *not* required in a computer field (such as drug side effects) would be habitually timed to correspond with periods when the cognitive and physical demands of the computer were low; alternatively, doctors would configure their keyboard use to accommodate this talk (Greatbatch 2006). Patients appeared to be sensitive to the doctor's activity, avoiding actions which might disrupt the doctor's computer-based activities by eliciting the doctor's gaze. For example, they tended to produce minimal responses (i.e. responses which acknowledged what the doctor had said but which neither expressed an opinion nor demanded further discussion) whilst withdrawing their gaze from the doctor, thus orienting to the doctors' continuing use of the computer, or they averted their gaze immediately if it became apparent that the doctor was preparing to resume typing (leaving the doctor free to continue and reducing the interactional demand) (Greatbatch 2006).

Previous work in the field of human-computer interaction (HCI) had focused on studying a single user carrying out tasks at a personal workstation but Greatbatch challenged this idea by highlighting that activities which may be *apparently* 'single user' activities around a computer are often – on closer scrutiny – collaborative activities, and that any inquiry into computer use in the context of a social interaction should acknowledge both the human-computer interaction and the interpersonal communication, since the use of computers is *embedded* within work practices and interactions (Greatbatch 1992;Greatbatch et al 1993). Greatbatch also concluded that the competencies involved in the accomplishment of text-based tasks are in many cases inseparable from those which underpin doctor-patient interaction (Greatbatch 2006).

Greatbatch's work was carried out at time when computer use was restricted to prescribing and the paper medical record was still being used alongside the computer for most other purposes. The EPR is now used exclusively in most UK practices for medical record keeping, and authors of more recent studies suggest the EPR may now require a level of attention which is impossible to "background" as Greatbatch recommended in the 1990s (Booth, Robinson, &

Kohannejad 2004). Prescription related activity is one in which (primarily) information is being delivered from the doctor to the patient (alongside the delivery of the prescription itself). In addition, it is usually an activity which occurs towards the end of a consultation, by which time doctor and patient have already spent time in interaction. It is possible that more exclusive use of the computer in different parts of the consultation may carry greater significance for the clinician-patient interaction.

## 3.5  The computer as a 'third party' in the consultation

Several authors have introduced the notion of the computer as a 'third party' in the consultation, demanding a significant amount of time, and have begun to challenge the notion of the clinical encounter as a communication dyad, preferring instead to refer to the 'triadic consultation' (Booth, Kohannejad, & Robinson 2002a;Chan et al 2008;Margalit et al 2006;Pearce 2007;Pearce, Dwan, Arnold, Phillips, & Trumble 2009;Scott and Purves 1996;Ventres, Kooienga, Vuckovic, Marlin, Nygren, & Stewart 2006).

Scott and Purves introduced a 'three way interactive DCP model' in which each "component" (Doctor, Computer, Patient) is regarded as having an undeniable effect on the relationships between the other two, presenting this as a "perceptually impossible" triangle and arguing that it is no longer sufficient to analyse the consultation without attending to the third ubiquitous component (Scott et al 1996). Others have drawn attention specifically to the "intrusive" nature of the computer (Booth et al 2004;Sullivan 1995) or have described the computer as an "interloper" into an environment that was not originally designed for it (Pearce, Walker, & O'Shea 2008).

Booth et al analysed video-recordings of 'moments of transition' (when doctors' attention switched between the patient and the screen) amongst ten experienced GP EPR-users and concluded that the multi-tasking which intensive computer use in the consultation demands is very difficult to achieve (Booth et al 2004). They selected 10 out of 137 consultations for transcription, to reflect a variety of consulting styles and room layouts. Only one of the ten GPs in the study habitually recorded information on the computer as the

consultation progressed. The authors analysed the recordings informed by the Calgary Cambridge Guide (Kurtz and Silverman 1996) and identified and classified three styles of doctor behaviour which contributed to the switch of attention. These were: controlling (the GP actively manages the transition, either by directing the patient not to interrupt during computer use or by influencing the flow or dynamic of the dialogue at the transition point); responsive / opportunistic (the GP makes use of gaps which arise in the consultation, resisting any attempt to interfere with the patient's interaction); ignoring (the GP loses rapport whilst engaging with the computer and may not respond at all to interaction from the patient).

Those doctors in the first two groups (controlling or responsive / opportunistic) were found to use specific strategies to manage the transition, namely: signposting (indicating verbally or non-verbally that they are about to use the computer); chatter or "blather" (general conversation incorporating verbal and non verbal cues to indicate listening, or a running commentary); responding every time (stopping typing and turning to face the patient). The authors mapped these observed strategies to the Calgary-Cambridge Consultation Skills Guide (a consultation skills tool which is widely used in GP training), generated a list of competencies to supplement the guide, and developed a training package aimed at improving rapport whilst using a computer in the consultation, the key message being that clinicians should aim to avoid trying to attend to the patient and the screen at the same time (Booth, Kohannejad, & Robinson 2002b;Booth et al 2004).

Whereas Booth et al focused their analysis on moments of transition, Ventres et al. conducted an ethnographic study in the United States incorporating participant observation, video-recording and interviews, considering more broadly the relationship between consulting style and EPR use (Ventres, Kooienga, Marlin, Vuckovic, & Stewart 2005;Ventres et al 2006) and developing "ten tips for patient-centred care" (Ventres, Kooienga, & Marlin 2006). Based on a thematic analysis of the video data, they classified consulting styles as informational, managerial or interpersonal, where these categories represented a spectrum which corresponded with both decreasing time spent looking at the

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EPR (23% - 43% of consultation time) and with notions of doctor and patient-centred approaches. Doctors tended towards one overall style. Ventres et al. provide descriptions of the characteristics and conclude that clinician styles determined involvement of the computer in the consultation (Ventres et al 2005;Ventres et al 2006).

Although this resonates with the findings of Booth et al, their classification of 'style' (informational, interpersonal, managerial) is one which emerged from the behaviours observed in their own data so their conclusion that consulting style determines computer use is something of a tautology. However, their suggestion that a doctor's consulting style may be critical for how the EPR comes to be incorporated into the consultation is certainly plausible and raises the interesting possibility that in the context of a 'patient-centred' consultation (however we define it) the EPR may open up opportunities to become more patient-centred, whilst in a 'doctor-centred' consultation the EPR may contribute to a further shift towards 'doctor-centredness'. This suggestion is supported in Frankel's recent longitudinal study, which incorporated video recordings before and after introduction of computers into a US primary care clinic (Frankel, Altschuler, George, Kinsman, Jimison, Robertson, & Hsu 2005). The authors found that clinicians' baseline communication skills – both positive and negative – judged by observation of them using a paper based medical record are carried forward *and amplified* with a computer record, suggesting that the technology (be it paper or electronic) does not so much exert specific 'impacts' on a consultation but is incorporated by particular clinicians according to a wider range of communication behaviours.

Ventres et al also identified fourteen factors which influenced how the EPR was used in the consultation, grouping these into four categories: spatial, relational, educational, structural – a framework which has since been adapted for use in one small feasibility study of EPR training amongst first year medical students (Morrow, Dobbie, Jenkins, Long, Mihalic, & Wagner 2009). This framework acknowledges that factors relating not only directly to a clinician's individual style, but to wider institutional and professional concerns also feed into and inform EPR use in the consultation. The authors do not specifically explore the

juncture between individual and institutional concerns but this is another interesting possibility for ethnographic study. It is unlikely that there is any simple factor, or collection of factors which 'determines' EPR use at all, rather that there is a complex interweaving of practices which shape EPR use, and which are themselves shaped by the EPR. In any study of the EPR in the consultation it seems important to orient both to the moment-by-moment interactional detail of the consultation, whilst remaining aware of the broader institutional and social context within which the interactions take place.

Pearce has made an important recent contribution to this body of literature by seeking to describe the nature of the relationships within the 'triadic' consultation (which he calls the "new" consultation) using tagging software to facilitate analysis of videos of 141 patient encounters (Pearce 2007;Pearce et al 2009;Pearce, Trumble, Arnold, Dwan, & Phillips 2008). He criticises previous work for being both under-theorised and primarily 'doctor-centric', and for continuing to frame a triadic relationship as a series of dyadic relationships (for example doctor-patient, doctor-computer, computer-patient) (Pearce 2007). He sought to address this limitation, by bringing Goffman's dramaturgical theories of human interaction to his analysis (Goffman 1974) in what is an explicitly theory-driven approach rather than one which seeks to generate theory from the data. He worked entirely with raw video data rather than with transcripts (Pearce 2007). Pearce considers the computer as a non-human actant, affording it equal analytical attention to the human actors and following the three actants and their "moves" to describe how each contributes to the interaction. Goffman's concept of moves invites examination of "talk or its substitutes" (Goffman 1981b) and Pearce studies talk and bodily conduct to illuminate the triadic nature of the relationship.

Pearce (drawing on Goffman) frames the consultation itself as a 'play', the consulting room as the 'stage', the objects as 'props' – the computer screen itself becoming the 'face' of the computer (Goffman 1959b). He regards the arrangements of the setting as an important aspect of the social milieu, and consequential for the interaction, by being broadly *patient inclusive* or *patient exclusive* (in terms of how it contributes to a three-way relationship) (Pearce et

al 2008). His analysis of the first minute of the consultation revealed that the involvement of the computer often heralded a shift from social conversation to the 'business' of the consultation; when all three actors were 'on the stage', the play could begin. Openings are described as doctor-openings, patient-openings or computer- openings. The computer is identified as exhibiting agency within a three-way relationship and 'joining in' the negotiation, either directly or indirectly (Pearce et al 2008).

Table 2 shows Pearce's classification framework of actors (human participants) and actant (computer) according to their 'key' (overarching theme of behaviours, or style exhibited in their relationships) and 'behaviours' (discrete actions which can be employed variously within a single consultation, regardless of the key) (Pearce et al 2009). Pearce proposes that future work on the consultation must acknowledge this agency of the computer and expresses concern that there is a risk that computers may undermine the status of the patient by posing a threat to patient-centredness (Pearce et al 2008).

Pearce shows ways in which information, power and authority shift amongst the three actants throughout a consultation, in what he calls "ever revolving circles", and calls for further work to be done to examine these issues in more detail – in particular how authority is created dynamically in the consultation. He suggests there are now three agendas to consider, and that the computer vies for attention as a source of authority in its own right, often being acknowledged as such by both doctor and patient, through both their spoken language and their body language. He suggests that the same piece of information may be trusted in one situation but doubted in another, that a doctor may use a piece of information in one setting to empower the patient and in another to bolster the doctor's own authority (Pearce 2007).

**Table 2. Pearce's classification framework, showing "keys" and "behaviours" of actors/actant in the consultation. Adapted from Pearce et al. (2009)**

| Actors / actant | Keys (overarching themes of behaviours) | Behaviours (discrete actions, employed variously within consultation) |
|---|---|---|
| Physicians | Unipolar / bipolar (style exhibited in every consultation)<br><br>Unipolar = lower pole of body facing predominantly towards computer<br><br>Bipolar = switches of focus indicated by lower body shifts | 1.Engaging (e.g. turning gaze towards patient or involving them)<br><br>2.Disengaging (e.g. shift attention away from patient towards computer)<br><br>3.Cogitating (not engaging with either computer or patient) |
| Patients | Dyadic / triadic (stable throughout single consultation)<br><br>Dyadic = body orientation suggests interaction with physician is predominant concern<br><br>Triadic = happy to deal with computer as integral partner in consultation | 1.Screen controlling (patient actively brings computer into play in consultation)<br><br>2.Screen watching (attention focused on screen)<br><br>3.Screen ignoring (patient disregards screen e.g. turning body away from it) |
| Computer | Active / passive (usually both exhibited in each consultation)<br><br>Active = reminders / dialogue boxes that pop up during consultation and actively demand attention<br><br>Passive = computer influences consultation by its presence | 1.Informational (consultation is shaped by information provided)<br><br>2.Prompting (computer displays a prompt through its decision support function)<br><br>3.Distracting (computer distracts one of the other actors) |

## 3.6 The clinical consultation and the patient-centred ideal

Greatbatch's observation that computer use is inseparable from doctor-patient communication (§3.4) is of particular relevance to general practice, a field of medicine in which the relationship between doctor and patient is regarded as a core, defining feature of the discipline. In his seminal text "*The Doctor, the Patient and his Illness*" Michael Balint first described the therapeutic potential of the doctor-patient relationship (Balint 1964) and (in the UK at least) the profession of general practice has been much more proactive than other medical specialities in seeking to incorporate an understanding of this within

training curricula. One could argue that this activity has been constitutive of the evolving identity of general practice.

Since Balint's pioneering work in this area, numerous models of the consultation have sought to conceptualise the way in which this relationship is built through interaction. However 'communication skills' analysis, teaching and assessment in general practice training continues to take a rather instrumental task-focused approach, and to be built on an assumption of a communication dyad. For example, the licensing examination for general practice in the UK currently includes a series of simulated consultations between doctors and (actor) 'patients', but no assessment of a doctor's use of the EPR in a consultation.

Much of the emphasis on consultation skills in general practice focuses around the concept of 'patient-centredness', a term which Enid Balint first introduced in 1969 (Balint 1969) to refer to "*understanding the patient as a unique human being*" and which is increasingly conceptualised as a clinical method. The ideology of patient-centredness has become the focus of quantitative assessments within the educational environment and has also informed the development of quantitative research instruments (e.g. the Roter Interaction Analysis System or RIAS) on the assumption that doctors can be evaluated on the extent to which they offer patient-centred consultations (Roter et al 2002). The term 'patient-centredness' has become rather overused and taken-for-granted and yet a recent review of the extensive literature in this field has revealed considerable ambiguity over what is actually meant by the term (Mead and Bower 2000). The authors of this review present a model incorporating five dimensions which are encompassed in the literature on patient-centredness, but when it comes to the assessment of patient-centredness they concede (unsurprisingly) that consultations are sufficiently complex that "*not all dimensions have proved accessible to current measurement technology*".

Scambler and Britten have criticised much of the recent work on doctor-patient interaction for being decontextualised and under-theorised (Scambler and Britten 2001). In particular they are critical of the positivistic search for those interactional or communicative 'qualities' that are predictive of positive out-

comes for health, health-related behaviour or patient satisfaction, suggesting there is a tendency to neglect substantive sociological theory and a failure to acknowledge the wider social or institutional context within which a consultation occurs (Scambler et al 2001). The quest for patient-centredness is an orientation which does not so much *analyse* the consultation and how it unfolds as an interaction, but seeks to *evaluate* the doctor who may (or may not) display particular pre-defined task-oriented behaviours which are open to such evaluation or measurement. To this end it is (somewhat paradoxically) a rather 'doctor-centred' approach to investigating the interaction.

A detailed exploration of the notion of the patient-centred consultation is beyond the scope of this thesis but I feel that it deserves mention here, since so much of the existing research on the consultation (including some of the afore-mentioned research on the computer in the consultation) seeks to evaluate the consultation against this (admittedly poorly defined) 'ideal'.

## 3.7  Summary and implications for research

I began this chapter by explaining the sheer volume of published literature on electronic patient records. However, within this vast array of papers the body of literature which examines how medical records and computers are used within the consultation is surprisingly small, and much of it pre-dates the widespread uptake of electronic records in recent years. Very little of it has reached the mainstream medical journals and there is little evidence that the research has succeeded in challenging mainstream medical thinking about what the EPR is or what its contribution to contemporary primary care practices may be. It is not clear how much of the research has reached educational practice or assessment.

One observation which is particularly striking is the focus of most previous interactional research on the 'computer' and not, in fact, on the 'electronic patient record' at all.  As I pointed out in §3.2 there are some challenges around defining the EPR which any researcher in this area must grapple with, but aside from this it seems important to 'open up' the computer and allow the complexity that is the EPR into the analytic spotlight so that the full extent of its potential

shaping influence can be explored in detail. The studies which I have summarised in this chapter establish that the computer has significant influence within the consultation, but give little insight into what is *actually* being accomplished as clinicians interact with the computer, or what this may *mean* for clinicians or patients. The computer remains something of a 'black box'. The consultation also tends to be studied in isolation, with no attempt to situate it within a wider social, organisational or institutional context. Given the context within which EPRs have become so widely adopted within the UK (§2) this seems an important omission.

Many previous studies tend to focus on 'impacts' of the computer in a way which regards the computer as separate from the interaction, and not integral to it. Greatbatch challenged this orientation in the 1990s but it is still rare for researchers (and perhaps even rarer amongst clinicians) to embrace this more complex perspective on the interaction. Broadly, the research which I have summarised here may be regarded as either primarily evaluative, or primarily analytic in orientation. The body of research which seeks to classify clinicians by consulting style, or behaviour types, or by the extent to which they are patient-centred is overtly evaluative in nature and seeks to make judgements about behaviours against pre-defined constructs. This is the commonest approach, and sits comfortably along the commitment to the notion of consultation skills in medical education circles. However this approach does not fully appreciate the consultation as an interaction, as *co-constructed* between clinician and patient. By contrast, the analytic studies (for example the work of Greatbatch and Pearce) take account of the consultation as an interpersonal interaction but tend to be highly descriptive and translate less readily into conclusions which are meaningful to practitioners or policy makers.

The time is ripe for examining the potential of novel, more theoretically sophisticated approaches to exploring the role of the EPR within the consultation. Based on my reading of the literature I identify a need for work which seeks to unpack the complexities of the EPR and the complexities of the consultation and which further seeks to contextualise these. By exploring methods and theoretical approaches which embrace the complexity or messiness of actual

social practices I hope that I will be able to identify new ways of 'looking' at – and reflecting upon – professional practice and new understandings of what the EPR *is* and what is being accomplished through the integration of the EPR within primary care practices. I hope that my work will yield conclusions which are valuable to practitioners, policy makers and future researchers of the EPR.

In the next chapter (§4) I turn to methodology and methods.

# 4 Methodology and methods

## 4.1 Introduction

In this chapter I will outline a linguistic ethnographic approach to studying the EPR which pays due attention to the EPR as the focus of the analytic gaze, whilst also acknowledging that the EPR does not exist in a vacuum, but acquires meaning only through its contact with the people who are actively using it in a moment-by-moment way, and within a wider social and organis-ational context. One of the challenges we highlighted in the meta-narrative review of the EPR (see §3.2) (Greenhalgh et al 2009) is the need for research which focuses on "*appreciating the situated micro-practices*" which constitute clinical work (Ellingsen and Monteiro 2006). My PhD has given me the opportunity to 'zoom in' on the micro social interaction in the consulting room, beyond what was feasible within the time and budgetary constraints of the wider HERO project (§2.2).

My interest in the organisation (the primary focus of HERO) and the cons-ultation (the primary focus of my PhD) have run alongside each other and the analytic insights gained from these two parallel approaches have been mutually enriching. As the analytical work progressed within both projects there was increasingly scope for an explicit and productive synergy between the different 'threads'. I have been continually shifting my analytic gaze between a focus on the micro detail of the consultation, to a focus on the meso level detail of the organisation, the macro institution-wide concerns and beyond. The two threads have become increasingly interwoven as time has gone on.

I have tried to capture something of this analytic journey within the three 'findings' chapters (§6; §7; §8) each of which adopts a slightly different analytic perspective. Chapters §6 and §7 focus primarily on the clinical consultation as the core concern (with §7 assuming a more micro level orientation to the interaction data) but the analysis draws on observations of the wider context which the ethnography made possible – what Erickson refers to as "*the field of broader social influences*" (page 5) (Erickson 1985). In §8 I take some of the

analytic themes identified in the micro analysis of consultation data and follow these themes into the 'backstage' regions of general practice taking a more 'organisation level' perspective whilst at the same time maintaining an interest in the "situated micro-practices" (Ellingsen et al 2006).

A great challenge in describing the methods I have used is the inevitable need to represent – in a rather linear fashion – an emergent iterative approach which in practice was 'messier' and far from linear. My experience of this research is that the crisp distinction between 'methods' and 'analysis' – which is maintained within mainstream biomedical research – has become blurred. For example, I would argue that the transcription of interaction data is the first step in an analytic process as much as it is method. The act of writing field notes in data gathering is also a process of selection, analysis and interpretation. The positioning of a camera to record consultations involves judgement about what is most important to capture and is therefore informed by analytic concerns. I hope I can succeed in 'storying' this process as I analysed and re-analysed data through different analytic lenses, and experimented with different 'ways of looking' at the interaction data. One consequence of my approach is that some explanation of my analysis will need to be presented up front so that I may describe the emergent method.

As I outlined in the §3.7 one of my challenges was to broaden the focus of analysis beyond the computer towards the electronic patient record. I wanted to incorporate a sensitivity to both its 'material' dimension (e.g. the screen, keyboard, mouse – what most people would recognise as the 'computer') and its 'textual' dimension (the medical information, prompts, alerts and fields for completion) that are displayed within the EPR. I also embrace an analytic commitment to the concept of 'discourse' as being constitutive. I will explain this in more detail later in this chapter as it is fundamental to my theoretical perspective. In brief, this orientation assumes that social action is an accomplishment which is achieved in and through social interaction.

In the next section I will discuss my theoretical perspective, and then introduce ethnography and linguistic ethnography as a broad methodological orientation. I

will also introduce the field of research called discourse analysis, which I have used extensively. I will then describe my access to the research sites and my methods of data collection. I will include in this chapter a review of the literature on the use of video recording in the consulting room as a means of data collection. Finally, I will describe my method of transcription. My conceptual framework for analysis evolved alongside and in parallel with repeated rounds of transcription and preliminary analysis. I will describe this in detail in §5.

## 4.2  An outline of my theoretical perspective

The theoretical perspective which informs my work underpinned my decisions about methods – including data collection and sampling – and approaches to transcription and analysis.

First, I will explain the related concepts of *ontology* and *epistemology*. Ontology is the philosophical study of the nature of reality. Epistemology is the philosophical study of the nature and scope of knowledge. Research traditions vary in their ontological assumptions, and this in turn relates to different assumptions about the status of knowledge that the research generates. As Green and Thorogood (whose helpful introduction to these philosophical positions I draw on in the following paragraphs) point out:

> *Many debates about the value of research findings are rooted in epistemological differences between researchers in terms of what kind of knowledge they believe research should produce, or what counts as adequate evidence for conclusions to be drawn*
>
> <div align="right">(page 11) (Green and Thorogood 2004b).</div>

For example, *positivist* approaches which have been popular since the Enlightenment (an example is the randomised controlled trial, regarded as the gold standard by proponents of evidence based medicine) assume an objective reality which is stable, 'out there' and exists independently of knowers or their values. It is a reality which, through experimental methods can be explained, predicted, measured and controlled. The scientific method which is used is one which is objective, rational and neutral and the assumption is that there exists a single reality or 'truth' which can be sought out (an epistemological claim). A

positivist view of language would be one which assumes a clear correspondence between the world we experience and the words and language used to represent and describe it. From this perspective, language is a transparent window through which the world is seen and information transmitted. This is an assumption which underlies many studies based on survey methods and many (though not all) qualitative interview studies in the healthcare field.

In contrast, an *interpretivist* approach which is often adopted in the social sciences seeks to explore the meaning-making and interpretations of research participants with a view to understanding human behaviour, rather than seeking to explain, measure or predict the 'reality' of the world. A researcher working within this paradigm makes no explicit (or even tacit) 'truth claim' but regards the knowledge obtained through research as partial and situated, related to the researcher's world view and value system.

Researchers in a related tradition – that of *social constructionism* – make an even bolder ontological claim in opposition to the positivist approach. In this tradition reality itself is assumed to be *socially constructed* – the result of historical, social and political processes – and this opens up the possibility that there exist multiple realities or 'truths'. It is a relativist position in which the interest of the research is in how phenomena come into being, the processes by which they come to be constructed as they are. Researchers may consider themselves along a spectrum of constructionism which – at its extreme – is sometimes referred to as 'strong' social constructionism (in which *all* reality is regarded as a construction). Where one positions oneself on this spectrum is related to one's ontological assumptions about the nature of reality. Even within the field of discourse analysis – which I will explain in §4.4 – there is room to accommodate a range of different ontological and epistemological positions, traditions varying in their understanding of the role of the social.

My own work programme sits within an interpretivist frame of reference in that I seek to explore the meaning-making of the research participants. My core data set, which consists of video data of clinician-patient interactions, opens up the detail of interaction, or 'language-in-use' to analysis. My perspective on

language which underpins my analytical approach is that language and discourse (which incorporates more than just the spoken word) are socially constructed. This orientation assumes that language does not just reflect or express intentions or decisions (the representational role of language) but it makes them (the constitutive role of language) (Roberts and Sarangi 2005). However I fall short of believing that the 'real' has no place whatsoever in discourse, or that there is never any 'reality' at all. I would therefore conclude that my ontological stance is one of weak social constructionism.

## 4.3  Ethnography and the 'linguistic ethnographic' approach

Ethnography is a little used research approach in general practice settings although valuable insights have been made using ethnographic approaches in recent years – for examples see Gabbay and le May (Gabbay and le May 2004), Checkland (Checkland, Harrison, & Marshall 2007), and McDonald etc al (McDonald, Harrison, Checkland, Campbell, & Roland 2007). There have been recent calls for greater attention to methods such as ethnography (Checkland 2009;Greenhalgh et al 2011;Pope and Mays 2009), Pope arguing that researchers are not exploring the full potential of qualitative methods and Checkland proposing that engaging critically with different research traditions is crucial to broadening the evidence base on the organisation and delivery of services.

The term 'ethnography' (from Greek: 'ethnos' means 'people' and 'grapho' means 'to write') is used rather ambiguously to refer both to the process of conducting the research and the product (i.e. the written report) (Agar 1980). A specific interest of this kind of research is to render explicit those aspects of 'culture' – including beliefs and perspectives – that are held outside of conscious awareness and cannot be readily articulated by informants (as one might assume is possible in an interview study) (Erickson 1985). The writing is not simply a description, but incorporates an interpretive perspective and serves a rhetorical function, although the stance of the field worker is not manifestly evaluative (Erickson 1985).

Ethnography is small scale observational research, carried out in every day settings which uses several methods, evolves in design throughout the study and focuses on the meanings of individuals' actions and explanations (Savage 2000). Analysis is driven by an exploration of the tension between what is called the 'emic' (or insider) perspective and the 'etic' (or analyst's) perspective, such that the product of the ethnography goes beyond simple 'insider' description towards a theoretical description (Green and Thorogood 2004a). The research-er can be regarded as 'research instrument', becoming part of the everyday life of the social world being studied, through observing interactions and behaviour and talking to members (Pope 2005) as one seeks to make meanings out of the fundamental question "What is happening here?" A 'naturalistic' approach, the aim is to study the world in its natural state, undisturbed by the researcher (Fox 1998). However, as Hammersley and Atkinson point out this is an idealised view since:

> *It is true that we cannot avoid relying on "common-sense" knowledge nor, often, can we avoid having an effect on the social phenomena we study. In other words, there is no way in which we can escape the social world in order to study it*

> (page 17) (Hammersley and Atkinson 1995b).

The responsibility on the researcher, therefore, is to remain highly reflexive. This reflexivity incorporates a sense of one's own socio-historical location, values and interests, sensitivity to the importance of one's own personal characteristics, awareness of one's effect on the people and processes one studies and an understanding of research as an active process in which accounts of the world are produced through selective observation and theoretical interpretations (Hammersley et al 1995b). The ethnographer is constantly exploring the interplay and the tension between 'strangeness' and 'familiarity' whilst seeking to make sense of everyday practices, by immersion within the field.

Linguistic ethnography is a very recent theoretical and methodological dev-elopment and the debate about 'what is' and 'what is not' distinctive to an understanding of linguistic ethnography is current, but it is grounded in the

practice of a number of scholars in recent years (Creese 2008). Rampton, in a recent discussion paper states:

*Linguistic ethnography generally holds that to a considerable degree, language and the social world are mutually shaping, and that close analysis of situated language use can provide both fundamental and distinctive insights into the mechanisms and dynamics of social and cultural production in everyday activity*

(page 2) (Rampton, Tusting, Maybin, Barwell, Creese, & Lytra 2004).

There is a productive tension between ethnography and linguistics (and so by implication, discourse) and it is at this boundary that scholars of linguistic ethnography see its potential. In contrast to ethnography, linguistics (in its many forms) identifies structural patterns in the ways in which communication occurs, patterns which are relatively stable, recurrent and socially shared, which can be identified using well established procedures and described using technical vocabularies (Rampton et al 2004). One particular tension stands out – the focus of ethnography on the *situated particularities* of everyday life sits in contrast to linguistics as it seeks to *generalise* about language structure and use. Rampton characterises linguistic ethnography by its interest in working at this interface, in which linguistics "*ties ethnography down*" and ethnography "*open linguistics up*" (Rampton et al 2004). Although this contrast is helpful, it is the value of working at this interface rather than the assumed direction of effect that is most productive. Roberts has suggested that ethnography may "*tie linguistics down*" by making some interpretations more likely than others, just as linguistics may "*open up ethnography*" to more discoveries (Roberts, personal communication).

Whilst linguistic ethnography does not encompass any specific method or approach, the underlying assumption is that persons, encounters and institutions are profoundly interlinked and one concern is the nature and dynamics of these linkages. Two methodological tenets help to define its remit. Firstly, the contexts for communication should be investigated rather than assumed. Second, analysis of the internal organisation of verbal (and other kinds of

semiotic) data is essential to understanding its significance and position in the world. Meaning is more than just "expression of ideas" (Rampton 2007).

Scholars of linguistic ethnography thus draw on two well established traditions, those of ethnography (with its origins in anthropology and the social sciences) and linguistics, whilst embracing a 'post-structuralist' research paradigm. I will discuss the distinction between structuralism and post-structuralism in §4.4 when I turn my attention to discourse analysis. Discourse analysis offers tools for exploring language practices which contribute to the construction, circulation and reworking of socially meaningful categories and identities within the social worlds which lie at the centre of 'linguistic' ethnographic observation.

## 4.4 An introduction to discourse analysis

Discourse analysis is gradually becoming more established as a research approach in general practice and can offer sophisticated insights into the complex world that is primary care by offering a range of rigorous methods and techniques (Shaw and Bailey 2009). Discourse Analysis (DA) has been described as a field of research rather than as a single practice (Taylor 2001). Different interpretations of the 'turn to discourse' have resulted in numerous approaches and a range of methods, making a succinct definition difficult. The definitional challenge reflects the fact that discourse analysis has emerged relatively recently, during the latter half of the 20th Century, within a wide range of academic disciplines, each with its own take on what discourse *is,* what *kind* of activity the analysis of this discourse will involve, and what *kind* of knowledge it produces. The wide range of methodological approaches is confusing to the novice, and continues to fuel lively academic debate about the nature of discourse analysis amongst experts from different traditions.

In all traditions 'language-in-use' is a key object of study. However in different traditions different emphasis is placed on precisely what constitutes the language or discourse which is to be analysed. For example in conversation analysis – which is a micro-analytic approach – particular attention is paid to the turn-taking as spoken interaction unfolds in all its nuanced detail between speakers (§4.4.1). At the other end of the spectrum, scholars following in the

tradition of Michel Foucault do not study 'language' *per se* at all, but encompass a broader view of discourse as a *system of representation* including the rules and practices which regulate meaning in a particular socio-historical context. In this tradition, discourse is a group of statements which provide a language for talking *about*, or a way of representing knowledge *about* a particular tropic within a particular historical context (Hall 2001). The predominance of the 'biomedical' discourse in medicine in the 20th Century is an example, since it provides a way of representing bodies and their diseases in a way which makes sense, and is (largely) taken-for-granted – by doctors and patients alike – but which in turn also constitutes what 'counts' as disease within its own frame-works for sense-making (Foucault 1973). Unlike analysts from other traditions, Foucault did not study the *detail* of language (one statement, one utterance or one text for example), but instead focused on language *and* practice – in particular the way in which discursive practices are central to, *and constitutive of* the relationship between knowledge and power within institutionalised settings. That biomedical discourse has become so taken-for-granted makes possible certain interpretations of the world, but also rules out other ways of making sense (which in different sociocultural contexts or in a different historical period would make perfect sense). The following conception of discourse, written by an anthropologist who regards discourse as the concrete expression of language-culture relationships is helpful in capturing the breadth of discourse:

> *Discourse is a level or component of language use, related to but distinct from grammar. It can be oral or written and can be approached in textual or sociocultural and social-interactional terms. And it can be brief like a greeting and thus smaller than a single sentence or lengthy like a novel or narration of personal experience and thus larger than a sentence and constructed out of sentences or sentence-like utterances*

(Sherzer 1987).

It is beyond the scope of this thesis to review the many different schools of discourse analysis which have emerged. Indeed scholars of linguistic ethnography tend to focus on areas of commonality and shared principles rather than emphasising the differences. I will therefore briefly identify some of the

characteristics which are shared across different discourse traditions, in particular the shared assumptions that underpin these traditions.

The 'turn to discourse' in the social sciences reflects the shift away from the structuralist view of language which was dominant in the early 20th Century. Saussure (1857 - 1913) was one important contributor to this structuralist view in which language was conceptualised as a neutral, transparent medium based on a powerful system of signs and rules, and in which meaning was conveyed by employing established conventions of language; individual use of the system did not change the system itself. Kress, in a critique of this Saussurean view insists that language is fundamentally *social* – the "*social is the sign*" (Kress 2001). Discourse analysis is the study of 'language in use', and analysts see language practices as social practices that are worthy of study in their own right being the site where meanings are created and changed (Taylor 2001). This conveys the sense of language doing the 'work' of producing human meaning – or in other words: *when we talk we do work*. We can also extend this understanding beyond talk to include non-verbal semiotic means, as well as written texts and images.

Wetherell expands on this notion of discourse as social action, especially the need to reject assumptions that language is purely representational, a neutral servant, or transparent medium through which a person conveys thoughts (Wetherell 2001). She describes language as *constitutive* of social life. Language is not simply a mirror or a reflection but actively *constructs* social worlds. Discourse analysts are more interested in the *process* of this construction, in how social realities are built, than in the truth or falsity of particular descriptions (Wetherell 2001) – in other words, they embrace a social constructionist approach (see §4.2). In many traditions there is also a focus on identifying the orderly practices or patterns incorporated in discourse and the implications this has for the conduct of social life (Wetherell 2001).

I will briefly introduce conversation analysis as one example of discourse analysis. Within my own research I have drawn on some of the tools and techniques of conversation analysis but I do not align myself with the

methodological assumptions which inform a 'pure' conversation analysis. I explain this in the next section §4.4.1.

### 4.4.1 Conversation Analysis

Conversation Analysis (CA) was developed by Sacks and his colleagues Schegloff and Jefferson in the 1960's, and built upon the earlier work of Erving Goffman and Harold Garfinkel. Goffman's sociological analyses of the procedures of everyday life, as people deal with each other in interaction have been hugely influential in the development of the discourse analysis field. In particular, he regarded social interaction as a moral enterprise and coined the phrase *interaction order* to refer to the face-to-face domain as an *analytically viable* one. I will come back to Goffman's work in some detail in §5.1 as it has been very influential in my study. Garfinkel's main contribution was the belief that interactions allowed people to make shared sense of their circumstances, through use of shared methods of tacit practical reasoning, informing both the production of action and the recognition of action and its meanings (Heritage 2001).

In CA, the focus of micro-analysis is the sequential progression of utterances within a particular conversation (based on the assumption that talk has an inherent order to it) and an interest in the turn-taking within a stretch of talk, with careful attention to the presence of overlapping speech and pauses, for example. Each conversational turn is regarded as being orientated to the preceding talk, whilst at the same time *projecting the relevance* of the next speaker's turn at talk (Schegloff 1972). The interest of the conversation analyst is the analysis of interactional structures, the *talk* itself, and its regularities. Although ontologically, conversation analysts are constructionist, this is based on a realist, broadly positivist epistemology (§4.2) in which the analyst believes that a study of the detail of social interaction will reveal the 'rules' of interaction – the knowledge produced is about the nature of talk itself.

Importantly the talk itself, and how it is acted out in practice, is also the context. In other words, conversation analysts (at least those working within the early, purist traditions of CA) do not take context into account other than that which is

itself manifest within the talk. Schegloff calls this the *proximate context* and distinguishes it from *distal context* (incorporating factors such as gender or social class) which is seen as irrelevant unless brought into the interaction through the talk of participants (Schegloff 1992). The micro-analytic procedures for analysing talk may be drawn upon by discourse analysts from different traditions, who may or may not be committed to CA's focus on identifying the regularities of talk itself, nor indeed its narrowly defined concept of context. Linguistic ethnographers often use micro-analysis as a resource to explore the detail of talk, whilst situating this within broader contextual frameworks, such as institutional processes. In my own research I draw on the techniques and tools of micro-analysis informed by CA in this way, situating my work deliberately within a broader contextual framework which I have explored using ethno-graphic approaches.

## 4.5 Revisiting the definition of the EPR as a focus for study

In §3.2 I outlined the difficulties inherent in reaching a coherent definition of the EPR. I will take this up again here by way of explaining my own orientation towards the EPR as a focus for study.

Whilst recognising that the EPR incorporates a tangible infrastructure of wires, cables, chips, and so on, and that it has material dimensions which come into play in the consultation (e.g. the screen and keyboard) which hold some consequence for the interaction (§3.4 and §3.5), the EPR has a textual dimension which we must also take into account. The EPR may be seen to emerge discursively in that it acquires meaning through interaction and social practices which incorporate both the material and the textual dimension. Further, the EPR may be conceptualised as *contributing to* and *sustaining* the discourses which support its 'coming into being', through the representational practices which it facilitates, and through which it mediates social relations. Interacting with the EPR can contribute to a moment-by-moment renewal of context within the interaction, and can also be productive in a more far-reaching sense.

Before I developed my research interest in the EPR, I conceptualised the EPR as (more or less) a summary of the clinician-patient encounter (the 'patient record' or 'medical record') housed in a computer on the clinician's desk (and it was this housing that made it 'electronic'). This aligns with the notion of the record as a container and the user as an 'information processor', working within a defined pre-existing setting (the practice). Whilst I appreciated that the record could never capture *all* that is salient about a consultation, I had considered the record as primarily a description of clinical practice (and separate from it) rather than as integral to – and constitutive of – clinical practice. I had seen the EPR in rather concrete terms – a 'thing'. My review of the literature and my early work in the field began to challenge this.

Notwithstanding the difficulties around definition, the term 'EPR' covers a range of possibilities and I will offer a pragmatic practical description of what I am studying. When I use the term EPR I am referring to the clinician's desktop computer (including a monitor, mouse and keyboard, for example) and the display of clinical information that is visible on the monitor. This is itself part of a practice-wide patient information system and can be seen from various points within the practice network. The EPR user has access to a database (or file) of information about the individual patient. Information can be added to (or edited in) this database and patient information can be retrieved from the database. Different users of the EPR and clinical system may have different levels of access, which means that they have different permissions to view, edit or retrieve the patient's data. The EPR offers different options for how information is displayed, allowing the user to select from a limited range of displays (such as 'consultation mode', 'medical record', lists of 'values and results' and 'templates'). The EPR contains some decision-support functions – for example prompts, reminders, risk calculators and alerts. The patient information system incorporates functions such as appointment scheduling, electronic messaging and the capacity to conduct audits and searches across the practice population (e.g. using an in-built module called 'Population Manager').

The fully networked integrated EPR, accessible from all points of care (as was envisaged in the NPfIT §2.4.2) is not yet a reality – and may or may not ever

become a reality. Although there is connectivity outside of the practice (for example 'path[ology] links' delivers test results direct to the local EPR, and one practice had just begun to use GP to GP transfer of records or GP2GP) most of the EPR use is within the practice. This is sometimes called the 'local' detailed record. However, data within the EPR are extracted from within the clinical systems for analysis within QMAS (Quality Management and Analysis System), a national IT system which shares data between practices and Primary Care Trusts (PCTs) and provides evidence and feedback on quality of care as measured against national QOF achievement targets, making this available throughout the year to both practices and PCTs (NHS Connecting for Health 2010b).

## 4.6  Data collection

In the remainder of this chapter I will very briefly describe the study practices (I expand on this in much more detail in §8.2 and §8.3), ethical approval and governance, and my experience of recruitment and access. I will then introduce my experience of ethnographic observation, my use of video and screen capture to record consultation data, and my approach to transcription.

### 4.6.1  A brief introduction to the study practices

I spent approximately four months as an ethnographer in each of the two study practices, which I have pseudonymised as Clover and Beech. Both are urban general practices situated outside of London within the same Primary Care Trust (PCT) in the UK, and each with PMS contracts (Personal Medical Services).[4] The practices were of similar size serving mixed patient populations of 12,654 patients (Beech) and 11,800 patients (Clover). Both practices operated from converted houses in residential areas and both used a clinical information system called EMIS-LV, which was the most widely used system in the UK at the time of the study. Beech had many years of experience as a GP training practice, although a change of regulations on space requirements for

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[4] In a Personal Medical Services contract the practice holds its contract for delivery of GP medical services with its local Primary Care Trust.

GP registrars means it has not had a GP registrar since 1998. Clover had recently been approved as a GP training practice and the first GP registrar was in post. Clinicians in both practices had been using electronic records exclusively within the consultation for several years and as such were accustomed to its operation. Based on these parameters the practices would appear (at least to the casual observer) to be very similar, but my ethnographic work revealed important differences in the organisational aspects of these practices, which I draw attention to in §8.

### 4.6.2  Ethical approval and governance

Research ethics approval was granted for the HERO study by the Thames Valley multi-centre research ethics committee (06/MRE12/81) and subsequent amendments approved to allow the use of screen capture (§4.6.5) of the EPR (an aspect of this PhD study which had not been anticipated in the original ethics application for the HERO study). I made an application to the relevant PCT within the Research Governance Framework for the appropriate NHS R&D approvals and these were in place before I began my research in the two practices. In addition the HERO project (within which my PhD study was nested) appointed an external steering group with a lay chair which met approximately four-monthly throughout the three year period of the HERO study. The data set on which this PhD is based was collected within this study period.

### 4.6.3  Recruitment and access

I gained entry to the practices by being introduced to them through a single GP contact within each of the organisations. I had discussed the project informally (and separately) with these two GPs and following their show of interest I sent them a formal letter of invitation. This use of local contacts is recognised as an appropriate and legitimate way of gaining access to the field in this kind of work (Pope 2005). The approach favours research sites offering what Stakes calls *opportunity to learn* over concerns about 'typicality' (Stake 2005).

I had worked briefly in Beech (as a GP registrar and a locum GP) over ten years previously and this meant that I was known to some of the staff who continued to work there. My previous working experience preceded the routine use of electronic records by several years. My links with Clover were more tenuous; apart from the GP who acted as my advocate I was known only in my capacity as 'local GP' (although the practice manager and one of the other GPs had attended a workshop I ran within the PCT on 'Going Paperless' approximately five years earlier §2.2). As Hammersley and Atkinson say:

> *Gaining access is a thoroughly practical issue…it involves drawing on interpersonal resources and strategies that we all tend to develop in dealing with everyday life*
>
> (page 54) (Hammersley and Atkinson 1995a).

They also point out that 'access' is not simply a matter of gaining 'entry' or of physical presence.

My access experience was different in each practice and reflected different concerns about the research process. In Beech I was invited to give a present-ation about the research at a meeting of the GP partners, which prompted discussion and questions. I was then invited a second time to talk more informally at a staff meeting, so that everyone in the practice had an opportunity to meet me and discuss the project before embarking on the formal process of consent. There was an explicit recognition by the GPs that involving the practice staff early on would be important to the success of the project, and they were keen that it should be a joint responsibility for the GPs and myself to get staff 'on board'. Information sheets and consent forms (which had been approved by the NHS ethics committee) were given to GPs and staff only after these discussion meetings, by which time I had already established a willingness to accommodate me. This also gave me the opportunity to respond to the specific concerns that people expressed, not only during the meetings but in my early days in the field.

In Clover, I was also invited to a meeting of the GP partners and the practice manager. I was explicitly asked not to give a formal presentation, but to explain

briefly the nature of the project. The context was a business meeting in which there were many other agenda items for consideration. I offered to meet separately with the wider practice staff, but the GPs decided at this initial meeting that this would not be necessary; they would pass on the information about the project to their staff. They expressed willingness to take part in the research there and then. I passed on information sheets about the project and consent forms for staff to be distributed around the practice.

We had agreed as researchers on the HERO project (and had built into our ethics application) an ethical principle that we would only carry out the ethnography if all practice staff members were happy for an ethnographer to be present and observing the workplace (whether or not they were willing individually to be shadowed more closely, or to have their clinical consultations observed or recorded). My different experiences around access did not result in any difference to the consent rate (which was 100%) but it meant that gaining access as opposed to 'entry' was more obviously an ongoing process of negotiation in Clover. In the early stages of the field work I had to pay much more attention to potential sensitivities around my role until we all felt comfortable about my place as researcher within the practice. For example, in Clover I spent my first visit as researcher introducing myself to everyone and responding informally to queries they raised about the project. I avoided making contemporaneous field notes at first, a compromise which I feel paid off in terms of gaining the trust of staff and led to the opening up of opportunities for closer and more detailed observation of their working routines. One GP in Clover declined consent to being observed in the consultation or to having consultations video recorded, although this GP was happy for me to 'be around' in the practice.

### 4.6.4 My ethnographic observation

In total I carried out approximately 187 hours of non-participant observation across the two sites, in clinical and non-clinical areas of the practices. I began my observations in what Goffman calls the 'backstage' areas of practice – the administrative offices, the office areas of reception and the common rooms

(Goffman 1959b). My observation incorporated a mixture of "lurking and soaking" (Werner and Schoepfle 1989) and shadowing of individuals carrying out their working routines. I made detailed observational field notes, noted what people talked about and elicited narratives from staff as they worked ("*Would you be happy to talk me through what you are doing?*") Workers are typically unable to describe what they do unless they are doing it (Barley and Tolbert 1997) and this approach was more flexible and more sensitive to local contingencies than formal interviews. I collected documents which were relevant to the way in which the EPR was used. This included documents which came into play within routine practice or which were referred to through talk, as well as newsletters and practice leaflets designed primarily for patients.

The focus on organisational routines was a particular interest within the HERO project and is reported elsewhere (Swinglehurst et al 2011;Swinglehurst et al 2010). As I embarked on my PhD in which my primary interest was to observe the micro-detail of the clinical consultation, this observational work served two important purposes. Firstly, it served the practical purpose of getting to know practice members (and vice versa) and familiarising myself with practice procedures. The importance of this cannot be underestimated in this context as I wished to be granted access later to the 'front stage' – the intimate and private area of the consulting room. Secondly, this also contributed to an understanding of what Gumperz calls the local "communicative ecology" of the practices – an understanding of communicative practices and wider organisational discourses within which particular interactions are situated – for example, what gets talked about, by whom and in what ways, the values and beliefs that people bring to an interaction (Gumperz 1999). It helped me to understand the tools and technologies that people use, the events that occur, the jargon that is employed, the documents that are written and referred to – all aspects with Heath suggests are crucial to understanding complex organisational environments (Heath and Hindmarsh 2002).

As my understanding of the EPR in the consulting room became more sophisticated (§6 and §7) I found myself drawn once again to the backstage work of the practices and realised that an account of the EPR in the consulting

room could be enriched and extended by following some of the analytic themes into this backstage region. I will describe this in detail in §8.

Having conducted ethnographic work in the backstage areas of practice I observed clinics with GPs and nurses – one full clinic for each clinician who agreed to take part in the study. The preferred method of enrolling patients into the study was discussed and agreed with GPs and reception staff at each site. In both practices, receptionists advised patients about the study as they arrived at the reception desk, and they provided each patient with a letter of invitation which outlined the study, and a consent form. A more detailed information sheet about the project was available to patients on request.

I wrote detailed observational field notes whilst observing these surgeries. This experience was helpful to establishing a sense of each clinician's personal style of consulting, and helped to contextualise the video data which I recorded subsequently. In particular, I have been able to feel confident that the consultations that I collected in my video data set are not substantially different from the consultations I observed – notwithstanding the fact that every consultation is unique.

### 4.6.5  Video-recording and screen capture of consultations

My core data set for my PhD work consists of video-recordings of consultations by clinicians in each of the two research sites. The video-recordings incorporated two digital video streams: the face-to-face interaction and 'screen capture' of the computer screen (displaying the EPR as it was being used in real time). As with the direct observation of surgeries, the receptionists invited patients to participate, advised patients about the recording arrangements and provided patients with a letter of invitation and consent forms as they arrived at the reception desk. I was on hand to respond to queries but on only one occasion was asked for some further details by a carer who accompanied a patient as their advocate.

The consent forms for this work incorporated guidance issued by the General Medical Council on the video-recording of consultations for research purposes,

including an opportunity to withdraw consent after the consultation (GMC 2002). I achieved a consent rate of 64% which is slightly lower than that achieved in most published studies of video-recording consultations (see §4.7). This may reflect specific concerns over the recording of the EPR (in addition to the clinician-patient interaction), or may reflect a response to recent publicised scandals about confidential data losses on USB memory sticks.

I gathered recordings of up to three consultations for each of the clinicians who participated, but only one consultation for each patient on a single visit to the surgery. My participants included 19 clinicians (12 GPs; 5 nurses; 1 health care assistant; 1 nurse practitioner) and 54 patients, resulting in 54 recordings overall. There were technical hitches in 4 of these recordings, though these did not result in complete loss of data. The numbers of recordings are shown in Table 3.

Table 3. Distribution of video recordings in each site by clinical role

| Beech | | |
|---|---|---|
| Clinical role | Number of clinicians who participated in recording | Number of video recordings |
| GP | 6 | 18 |
| Nurse | 2 | 5 |
| Nurse Practitioner | 1 | 2 |
| | | |
| Clover | | |
| GP | 6 | 18 |
| Nurse | 3 | 8 |
| Health Care Assistant | 1 | 3 |
| | | |
| TOTAL | 19 | 54 |

I recorded consultations using a small digital camcorder (Sony® Handycam DCR-SR72) with a wide angle lens and remote control. Good quality voice recordings were achieved using the camera's in-built microphone. Space constraints in small consulting rooms meant that an ideal camera position (by which I mean a camera angle which captured as much as possible of the

clinician, the patient and their orientations towards each other and towards the computer screen) was not always possible to achieve. As a methodological principle, discretion in placement of the camera (so that it remained unobtrusive) was prioritised over fine-tuning the camera position. In all but one consulting room, the camera was mounted on a mini-tripod (rather than a full size tripod) and several patients commented to me after their consultations that they had not noticed a camera at all. An inexpensive, commercially available screen capture software tool (from ACA Systems) was used to record the screen images showing on the clinician's computer screen as a video file. This was run directly from a USB memory stick. The resulting .avi files were saved to the clinician's computer desktop in the first instance, and then transferred to an encrypted USB memory stick after the recording session was complete – a process taking approximately five minutes for three consultations.

It took me approximately ten to fifteen minutes to set up the technical equipment in each consulting room. Although I started and stopped the recordings, I was not present in the consulting room during the consultation and (with the exception of the one patient who requested further information about the study during the consent process) I did not interact with the patients until their consultations were over. At this point I checked that they were still willing for the video material to be used in the research (and they signed their consent form again). No patients withdrew consent at this stage. I began my recordings at the point at which the clinician opened up the patient's computer file to view the record (before the patient was called into the room) and stopped them when the clinician filed the record (sometimes several minutes after the patient left).[5] I waited outside the consulting room until the clinician advised me that they had finished with a patient's EPR.

Each consultation resulted in two digital video files, one of the EPR and one of the interpersonal interaction. Video editing software (Adobe® Premier Elements 4) was used to synchronise the two video streams into one video file such that

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[5] The times recorded in my transcripts denote the time from the beginning of the video recording rather than the beginning of the interaction between clinician and patient.

the interaction between clinician and patient (the camcorder view) could be played back alongside the view of the EPR (the screen capture view), and stopped and started simultaneously. This opens up to detailed analysis the dynamic 'EPR-in-use' in real time (see Figure 1 and Figure 2).
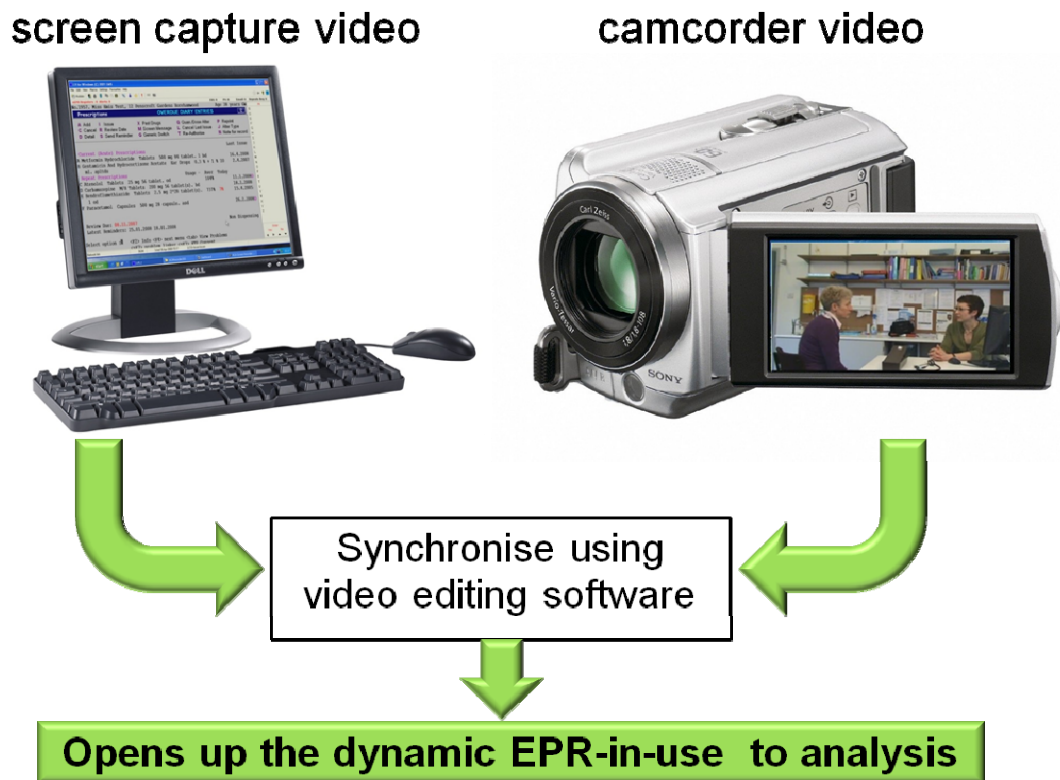


**Figure 1. Capturing video of the EPR and the interpersonal interaction**

All of my video data were stored within an encrypted vault on a 250GB hard drive, with a second (similarly encrypted) off-site back up copy.

Our ethical approval did not extend to being able to present videos at conferences nor to the reproduction of screen shots (other than those taken for demonstration purposes) within publications or reports. This means that readers of this research have access to transcriptions but not to the raw video data which were shared only within the research team (and to clinicians who took part in the project). The main disadvantage of this has been the difficulties I encountered when transcribing bodily conduct (which remind me of the adage "*a picture is worth a thousand words*"). The advantage has been that I have had to take very particular care over transcribing and that when I have shared data

(e.g. at conferences and data workshops) participants have engaged with what has been referred to as the aesthetic of "smallness" and "slowness" (Silverman 1999) in having to pay close attention to the details of the transcriptions. I considered whether it would be worth re-visiting our ethical approval so that I could play video data to external audiences. However as my analysis progressed I realised that I had been given access to a very privileged view of the EPR, and one which is rarely shared with the patient. For this reason I feel that it would be inappropriate to consider showing full details of a patient's EPR to external audiences (or in publications).



**Figure 2. A screen capture shot taken from a demonstration video, showing the EPR view alongside the consultation**

## 4.7 Use of video in the consulting room

Video offers particular advantages over other techniques in the study of the EPR in the consulting room. It not only opens up new kinds of data to analysis but also makes possible new approaches to analysis. Heath et al. have described the potential of video for illuminating the multimodal character of medical work and giving access to the interplay of talk, the visual and the material including the use of technologies in the course of medical work (Heath, Luff, & Sanchez Svensson 2007). Video, photography and other media are also becoming increasingly incorporated into the work of ethnographers (Pink 2007a). However video should not be used uncritically or without considering the potential it may have for interfering with the research process or the activities which are being captured on video. The camera becomes part of the research context and part of the identity of the researcher as ethnographer; there may be occasions when the quality of the footage should take second place to the production of meaningful ethnographic knowledge (Pink 2007b).

One small study, involving four GPs who agreed to the placement of a video in their surgeries for one month, offers limited evidence that awareness of being video-recorded does not affect consulting behaviour of GPs (Pringle and Stewart-Evans 1990). In this study ten surgeries were recorded, five of them with the GPs knowledge and five without (albeit they had agreed that this may be a possibility for the duration of the study) and consultations were coded against the TIMER tool (Time Interval Medical Event Recorder) to measure 27 parameters of behaviour. Their conclusion, that "*the study offers no evidence that awareness of video recording has an effect on objective measures of doctor's consultation behaviour*" falls short of suggesting that it provides ample evidence that video recording has no effect on doctor's consultation behaviour, nor on the consultation in general. It has been criticised by Coleman who points out not only that the characteristics of doctors and patients who agree to participate in a study of this kind may bias results, but also that it is difficult to know whether the coding schedule used captures all relevant aspects of doctors' behaviour (Coleman 2000). For example "qualitative factors" of the consultation were not specifically observed (Pringle et al 1990). Pringle's

conclusion does depend partly on the purpose of the recording and which specific aspects are of interest to the observer of the video. To give an obvious example, if video recording a consultation forms part of an assessment one cannot conclude that the observed practice is usual practice, since we know that awareness of assessment affects behaviour in fundamental ways. Like many examples of studies investigating consultation behaviour, Pringle's study has the weakness that it took an entirely quantitative approach to a complex social situation, was doctor-centred in its research question and positivistic in its orientation to the consultation by utilising a tool which was assumed to be an 'objective' measure of behaviour.

It is not clear from the empirical literature how the presence of an observing GP-researcher in the consulting room may affect behaviour of either clinician or patient, compared to the presence of a video camera or compared to no observation at all. Neither is it known whether or to what extent a patient's behaviour is affected by awareness that a consultation is being video-recorded. It is difficult to see how one could even attempt to investigate this given the requirement for informed consent. The assumption taken by most researchers in this field is that those patients who consent willingly are not likely to alter their behaviour in any meaningful way, providing they have clear opportunity to opt out of such recording and to withdraw consent afterwards.

According to published studies, patient satisfaction does not appear to be altered by video-recording (Campbell, Sullivan, & Murray 1995). In most studies over 80% of patients are willing to consent to their consultation being recorded, (Coleman 2000) but some researchers have reported refusal rates of 35% (Howe 1997). Studies suggest that young patients (Coleman and Manku-Scott 1998;Howe 1997) and those with mental health problems (Coleman et al 1998), or more specifically those presenting with overt psychological problems (Howe 1997), are less willing to consent to being on video. Coleman has reported that the use of written consent forms and the seeking of consent by a researcher (rather than by a member of practice staff) increases the likelihood that consent will be withheld (Coleman 2000).

Most of these studies of video-recording of consultations have been published in mainstream medical journals. The authors are concerned to ensure that studies involving representations on video offer insight into 'authentic' real life behaviours in a way which enables generalisable claims to be made. For other researchers, the concern is not so much the possibility of bias or lack of generalisability, but the incomplete and partial nature of the video footage, especially if it is captured in only one video stream. Technically sophisticated recording systems are now being developed for capturing multiple video streams precisely and measuring activities with capability of generating output to inform software development (de Lusignan, Kumarapeli, Chan, Pflug, van Vlymen, Jones, & Freeman 2008;de Lusignan, Kumarapeli, Debar, Kushniruk, & Pearce 2009). There is always a trade-off between the use of multiple video cameras (which may be more intrusive but may offer a more 'complete' view) and the desire – as an ethnographer – to observe the consultation relatively undisturbed by one's technical interference. As a methodological principle I favour the latter. One author has argued that the problems of selective observation are not eliminated with the utilisation of sophisticated recording equipment, but they are simply delayed until the moment at which the researcher sits down to transcribe the material (Ochs 1999). I will come back to transcription in §4.10.2. The point I wish to make here is that there are many issues to consider other than the 'completeness' or 'authenticity' of the video footage. The notion that one might ever capture the complete or authentic consultation on video may sit comfortably within a positivist frame of reference, but holds little meaning from a social constructionist perspective.

For the purpose of my PhD study, how 'representative' the patient participants are of patients 'in general' according to prescribed institutional categorisations is not of paramount importance, partly because of the ethnographic approach I am taking, in which generalisability is not a claim that I feel obliged to make. My orientation to the video as data is that it is (and always will be) a partial view of the overall situation, regardless of how comprehensive it may seem or the technical quality of the recording. It is an instance or a version of the interaction

(in some cases only one of many clinician-patient encounters between the participants in the recording).

## 4.8 Video, 'situated conduct' and multimodality

For researchers interested in what has come to be known as 'situated conduct' the great potential of video lies in its ability to give access to *versions* of conduct and interaction in everyday settings, to explore the way in which talk is inextricably embedded in the material environment and the bodily conduct of participants, and to examine the ways in which objects and artefacts come to gain particular significance at specific moments – how material features are invoked, referred to, used, noticed, seen at particular moments for particular purposes (Heath et al 2002). Use of video opens up the possibility to extend analysis to incorporate attention to different *modes* such as speech, bodily conduct, gaze, posture. Modes are culturally shaped resources for meaning making and a *multimodal* approach is one in which attention is given to all the modes (Kress, Jewitt, Bourne, Franks, Hardcastle, Jones, & Reid 2005). It attends to the "*complex repertoire of semiotic resources and organizational means that people make meaning through – image, speech, gesture, writing, 3-dimensional forms, and so on*" (page 1) (Jewitt 2008). Different aspects of meaning may be expressed by different modes, which may complement each other (or may on occasion be contradictory). In every mode of the multimodal ensemble there is always 'work' with all the available representational forms and such work is always meaningful (Kress and van Leeuwen 2001).

However, as Suchman notes:

> *… even the most seemingly unmediated, veridical representational forms like video recordings do not wear their meaning on their sleeves to be read definitively once and for all*
>
> (page 58) (Suchman 1995).

She draws attention to some of the tensions inherent in representational practices, between what she calls the "*desired vision of representational practice*" (on the left of Figure 3) and "*various voices of suspicion, contradiction, or concern*" (on the right) (Suchman 1995). For example:

| | | |
|---|---|---|
| Video records make evidence for claims open to contest | ⟷ | Video records persuade, close down debate |
| Video records maintain the animation, dynamics of lived experience | ⟷ | Video records freeze activity, while affording a (mis)illusion of experience |
| Working practice is lived experience, only partially representable | ⟷ | Working practice can be revealed, "captured", analyzed into constituent parts and transformed into manipulable, objectified knowledge |
| The aim of making work visible is to represent work's non-rationalizable, contingent, embodied structuring | ⟷ | The aim of making work visible is to represent work as rationalizable, abstract functions/processes, enacted through specific behaviours/ practices |

**Figure 3. Video and the representation of work practices, adapted from Suchman (1995)**

Some researchers have used videos of consultations generated within the research project as a resource for further interpretive work by GPs themselves or as a focus for further enquiry (Arborelius and Timpka 1990;Coleman and Murphy 1999). In the Arborelius study, GPs were instructed to observe and stop the video whenever they wanted to comment. These 'spontaneous' comments were audio taped and formed part of the analysis which aimed to describe and understand their experience in consultations (Arborelius et al 1990). The comments – which were taken at face value – were then classified into a typology to help to identify the main shortcomings which occur in the doctor-patient relationship. By contrast, Coleman used video-recorded consultations as a stimulus for focused semi-structured interviews around decision-making in the consultation, the agenda for commenting on video being more explicitly researcher driven and focused on doctors' decisions regarding whether (or not)

to discuss smoking cessation (Coleman et al 1999). In this instance the video was being used primarily as an aide-mémoire rather than a focus for the analysis of decision-making *per se* as it emerges through action in the consultation.

Ten of my clinician participants showed interest in watching one of their own recoded videos played back to them. Shortly after my main period of ethnographic observation I made appointments to meet with these clinicians to do this, hoping that this may add some new interpretive insights. I decided to approach this in an open-ended spirit of enquiry and did not ask any specific questions of the clinicians. Although the clinicians said that they found this interesting they made relatively little comment, tended to focus on factors which were not central to my research interests about the EPR, and made 'broad brush' rather general observations, usually of an evaluative nature (comments along the lines of "*I thought I did OK in that one*" or "*That wasn't too bad*"). For some GPs this may have reflected their prior experience of using videos within a context of assessment of consultation skills (submission of a video of consultations used to form part of the MRCGP examination). [6] I found that it did little to enrich my own analysis of the data, other than making explicit to me the relative *invisibility* of practices to participants and my challenge as ethnographer to make visible those aspects of 'ordinary' social practices which are tacit and difficult for research participants to articulate (Erickson 1985).

## 4.9 Unique features of my data set

One unique aspect of my data set is that it captures full consultations with a detailed view of the EPR screen as well as the clinician-patient interaction. Although Greatbatch et al. employed two video cameras for a proportion of their data corpus, with one focused on participants and one on the screen (Greatbatch 2006) the level of detail to which the researchers had access in the 'screen view' is unclear and they make little explicit reference to the content of

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[6] MRCGP is the Membership examination for the Royal College of General Practitioners. The use of video for assessment of consultation skills has been recently replaced by the 'Clinical Skills Assessment' or CSA which is a simulated surgery involving 'actor' patients.

the record, focusing primarily on the material aspects of the computer. My novel approach offers potential for extending our understanding of the EPR, building on the work of Greatbatch, Pearce and others introduced in §3.4 and §3.5. The existing literature suggests that the EPR contributes in important ways to the 'performance' of consultations. By zooming in on the moment-by-moment spoken interaction and bodily conduct, and by incorporating not only the *material* dimension of the EPR (the computer) but the *text* which the EPR displays, I am able to describe in a detailed and nuanced way the nature of the participation – or *presence* – of the EPR within the consultation.

The other unique aspect of my data set is the ethnographic fieldwork which has allowed me to contextualise the video data to a greater extent than is often achieved in research on the consultation and which has allowed me to 'zoom in' and 'zoom out' to different degrees and at different times in my analysis, as different analytical interests have arisen in the course of the project. In the next section I will try to capture something of the analytical journey.

## 4.10 The journey from 'methods' to 'analysis'

I pointed out in the introduction to this chapter (§4.1) that the distinction between methods and analysis is difficult – perhaps impossible – to sustain in this kind of work. In addition, linguistic ethnography and discourse analysis do not offer any specific method. Rather they provide a number of 'sensitising concepts' (Blumer 1969) and tools which can be drawn upon in the analytical process. Using discourse analysis is more about adopting a specific orientation to the data than it is about following a prescribed approach. As a newcomer to this type of research, there have been times when I have dearly wished the 'method' were clearer cut. In the absence of any pre-existing linguistic ethnographic work on the EPR, I have built my own approach to the data set from the 'bottom up'. By a deliberate process of 'slowing down' the analysis and consciously 'keeping open' the possibilities, I came to see (and see again – in repeated round of analysis) different ways of conceptualising the EPR. I have been helped by discussions with my supervisors, shared viewings of the data, and several opportunities to present work at conferences and data workshops

which have encouraged me to reflect on the analytic process and helped me to gain confidence in an area which has stretched me way beyond my disciplinary roots.

### 4.10.1 Data sampling

I began with a relatively 'broad brush' approach to sampling my video data, familiarising myself with it by viewing each video twice and making brief viewing notes in an Excel spreadsheet. I started to notice contrasting ways of engaging with the EPR within and across consultations, and between different clinicians, and recognised some of the phenomena that I had read about in the course of my literature review (§3). From my 54 recordings I initially selected 20 videos for 'interest' where my definition of interest was rather open-ended and included a broad range of what I regarded as different consultation styles (including different styles of engagement with the EPR), different consultation types (e.g. new problems, follow up consultations, chronic disease reviews) and different clinicians. Having not yet embarked on any detailed analysis, the selection was informed by what (in retrospect) seems a relatively crude understanding of the consultation (in interactional terms at least), one developed mainly in my role as a practising GP.

Adopting a social constructionist perspective to my data (§4.2) my interest has been in how social action is accomplished in and through interaction, and how the EPR features in this. Making a commitment to this orientation encouraged me to consider the moment-by-moment shaping of interactions, the contingencies which arise when the EPR is incorporated into the consultation in different ways at different times, and how clinician and patient orient to these ongoing contingencies. I wanted to move beyond thinking of the EPR as a third 'party' *present* in the consultation, to considering more carefully the *nature of this presence.* I set about transcribing some consultations.

### 4.10.2 Transcription as an analytical step

Before I outline my own approach to transcription, I will briefly review some of the literature on this topic. Transcription of recorded data is often regarded as a

mundane time-consuming task best delegated to a professional transcriber if project funds allow. However this approach overlooks some important dimensions of the task, especially the fact that transcription is one of the first steps in analysis. It is an opportunity to become immersed in the data set and to consider what may be relevant to transcribe – a decision which may evolve with repeated viewings of the data and refinement of the research questions. It is in itself an interpretive process, which involves judgements about what level of detail to include, data interpretation and data representation; it is not simply a technical task (Bailey 2008).

Transcription of video (rather than audio) data requires decisions to be made about the importance of *paralinguistic behaviour* such as gaze, posture and bodily conduct to the phenomenon of interest. Attention to these features significantly increases the amount of time required for the task (a minute of data may take several hours to transcribe) but may be critical to understanding. Specialists in multimodal analysis are sometimes critical of the term 'paralinguistic' – as it inherently privileges the spoken word over other modes – but there is as yet no widely agreed method for transcribing modes other than speech. Others argue that the situated conduct of the *listener* which helps to move interaction along is often overlooked (Erickson 2010).

Gibson et al., in the context of a study evaluating a decision support system in the consultation devised a data transcription methodology (based on observation of simulated consultations) which involved noting seven discrete types of activity (Gibson, Jenkings, Wilson, & Purves 2005). Each utterance of speech is accompanied by six further lines of transcript – four related to GP behaviours and two related to patient behaviours. This is further elaborated by a series of 18 icons to indicate specific kinds of activity (e.g. template in use; doctor writes on patient record; screen change; keystroke for data entry etc.) My criticism of this system is that it results in an extremely cluttered and complex transcript which requires great effort to follow, and yet at the same time the fluidity and complexity of the multimodal interaction becomes lost through its attempt at being comprehensive – in short, it is difficult to see the wood for the trees!

Other researchers have developed notation for illustrating direction of gaze alongside spoken utterances, and have used this in a study of consultations involving clinicians, patients and computerized checklists (Rhodes, Langdon, Rowley, Wright, & Small 2006). This is slightly easier to follow and explicitly attempts to foreground the analytical interest in gaze (over other aspects of bodily conduct) but the reality remains that words are easier to read than the dots, dashes and other notations used. In a later publication, in which the same authors focus specifically on gaze as an interactional resource in the consultation, they abandon this notation and use written descriptions of gaze and bodily conduct. This analytic choice is not discussed in their paper, but may reflect a decision that a written description conveys the material more easily to the non-expert reader (Rhodes, Small, Rowley, Langdon, Ariss, & Wright 2008).

Some researchers have worked directly with video recordings. For example, Pearce, in his analysis of the computer in the 'new' consultation, did not use transcripts at all, preferring to use digital markers ('tagging' software) as an aid to analysis. He argues against the use of transcripts on the grounds that they are two steps removed from the natural phenomenon being observed and no longer necessary when 'tagging' can quickly identify sections of video for replay (Pearce 2007). I would suggest that this criticism is based on a misunderstanding of the status and purpose of a transcription. First, the transcript does not necessarily 'stand in' for the raw data, but may be used alongside it in analysis. Secondly, transcription is a means of facilitating researcher engagement with the detail of the data at a level which is difficult to achieve otherwise. In other words, the transcription is important as a *process* as well as a *product*.

Cameron (working with spoken discourse) regards transcribing as a way of "bringing into focus" the characteristics of spoken discourse, a way of helping the researcher to adopt a more enquiring attitude to the language by continually drawing attention to its particular characteristics (Cameron 2001). This is necessarily a selective process (Erickson 2010).

Roberts argues that "*If talk is a social act, then so is transcription*" (Roberts 1997), the point being that there is no objective way of doing it; the act of transcribing involves the researcher bringing their own language ideologies to the task. This is not a 'bad' thing, rather something that requires reflexivity on behalf of the researcher as transcription is in process. Roberts urges researchers to do their own transcribing, to be reflexive as they do it, and to be aware that the act of transcribing is one of managing the tension between accuracy, readability and political issues of representation (Roberts 1997). The processing of talk often requires the researcher to draw on contextual knowledge in order to interpret what is being said, and to make decisions about the level of detail required. Too much detail can be unsatisfactory to the reader – there is always a trade off between detail and readability (Cameron 2001). Ochs argues that a more useful transcript is a more selective one and that selectivity is something to be encouraged (Ochs 1999).

Regarding the politics of transcribing, Ochs has drawn attention to the importance of the physical layout of a transcription. In cultures where language is read from left to right on the page, 'left-ness' is linked with priority, and in a transcript in which a left column is used for one speaker and a right column for another, there is a possibility of introducing a bias which may reinforce the notion that the speaker positioned on the left is in a more dominant position (Ochs 1999). She identified this pattern in research on adult-child interaction. Similar issues result from transcription of multimodal data – if columns are used for different modes, the positioning of the modes may (inadvertently) privilege one mode over another.

On a different ideological issue, Roberts and Cameron have highlighted the problems which arise if an attempt is made to transcribe non-standard linguistic varieties, such as dialects or the language spoken by people using English as an additional language (Cameron 2001;Roberts 1997). They advise caution when representing non-standard linguistic varieties, and advocate the use of standard orthography where possible to avoid the risk of stigmatising, stereotyping or caricaturing research participants as 'uneducated'.

## 4.10.3 My approach to transcribing a multimodal data set

I transcribed, in full, twelve consultations from my initial selection of twenty, using standard orthography throughout. I analysed these consultations – one by one, and line by line – as I went along (§4.11) and revisited (and revised) transcripts as I progressed, to reflect my evolving understanding and areas of interest. I used standard Jefferson conventions for transcription of the spoken word, as is familiar to conversation analysts (Atkinson and Heritage 1984). These conventions are illustrated in Figure 4. To them I have added the use of the use of a simple horizontal arrow (→ or ↔) to indicate direction of gaze between clinician / patient / EPR screen.

| | |
|---|---|
| **[** onset of overlapping speech | **.hhh** inbreath |
| **]** end of spate of overlapping talk | **Hhh** outbreath |
| **[[** speakers start a turn simultaneously | **=** no pause between speakers; contiguous utterances |
| **:** preceding sound is lengthened or drawn out (more : means greater prolongation) | **((    ))** a non verbal activity (e.g. **C =** keystroke in this work) |
| <u>**Underlining**</u>   emphasis | **( text )** unclear fragment of text |
| **(.)** pause of less than 0.2 seconds | **.** falling tone (not necessarily end of sentence) |
| **(0.4)** pause, in tenths of a second | **?** rising inflection (not necessarily a question) |
| ↑↓ marked rising / falling intonation | **CAPITALS** louder than surrounding talk |
| **>text<** the talk they surround is quicker than surrounding talk | **<text>** the talk they surround is slower than surrounding talk |
| **°°** the talk they surround is quieter than surrounding talk | |

**Figure 4. Transcribing conventions, adapted from Atkinson and Heritage (1984)**

After experimenting with several possibilities for transcribing bodily conduct and documenting notes on the  'screen' display (EPR) I adapted an approach suggested by Jewitt for transcription of multimodal data, in which different modes are presented in adjacent columns, with time as an anchor (Jewitt 2006). Following on from the previous discussion about the politics of transcription

§4.10.2, this system might be regarded as privileging speech (through its position on the left), or paying insufficient attention to the complexities of bodily conduct and gaze compared to some systems (Gibson et al 2005;Rhodes et al 2006), or failing to adequately attend to the issue that aspects of bodily conduct may not coincide precisely with spoken utterances (as the 'anchoring' effect of the time line might suggest). Whilst these are all valid observations, I found that this approach to transcription achieved a balance between clarity, completeness and readability.

Table 4 shows an example of my approach to transcription.

**Table 4. An example of transcription, incorporating different modes***

| Time | D/P | Spoken word | Bodily conduct | EPR Screen |
|------|-----|-------------|----------------|------------|
| 3.30 | D | uh well yo:ur l:ow density cholesterol<br><br>is is quite high um::(.) over seven so:: | D-> EPR; P -> D<br><br>D sits back in chair -> EPR | Consultation screen showing two entries dated 6 days ago:<br><br>1) (nurse): *Blood sample taken. Biochemical screening test (fasting cholesterol).* Text note: *will make app in a week to see Dr X* |
| 3.36 | D | ((sniff)) | D scratches nose, raises eyebrows | |
| | | (0.8) | | 2) (path lab): displays blood test results incl. *Cholesterol 10, Serum LDL cholesterol >7 see doc please.* |
| 3.37 | D | <al:tho:ugh ju:st because> you've got high blood pressure you don't nece<u>ss</u>arily<br><br>need anything to lower the cholesterol (.)<br><br>.hh >even though you've got hypertension< | D->EPR<br><br>D turns slightly - > P<br><br>D returns gaze - > EPR | QOF alert (remains throughout consultation). Shows P is on "QOF register" for hypertension and has two QOF items outstanding: "*notes summarised*" and "*recent medication review*" |
| 3.45 | D | I think you'll probably be well advised to have something t- to lower it↑= | D frowns | |

*D=doctor (GP); P=patient

## 4.11 Early observations and analytic insights

As I began my analysis I was immediately struck by the very pervasive nature of the EPR in some (but not all) consultations, and the need to find a way of exploring this, beyond my unsophisticated observation that clinicians spend a lot of time attending to the computer. Paradoxically, I also had difficulty 'pinning down' the EPR. Despite its pervasive presence it exhibited a curious tendency to 'slip away' from my analytic gaze (Swinglehurst, Roberts, & Greenhalgh 2011) (Appendix 4) and I found it difficult to keep my analytic attention on the EPR. In part this was related to my own familiarity with the EPR (I had regularly

used the EPR as a GP for about five years); in part it was my tendency to get wrapped up in the clinical detail of 'what was going on'. However I realised that the main reason for this difficulty was one of the most important and fundamental early insights in my research and relates to the inextricable relationship between the EPR and the social practices of which it was a part. I found myself repeatedly asking "*Who is shaping whom?*" or "*Who is structuring whom?*" and realised that to *try* to focus on the EPR was to ignore the recursive relationship between the EPR, the clinician and the patient.

In line with previous studies of the computer in the consultation (Als 1997;Pearce 2007) I observed the EPR to be displaying a *kind of agency* in the consultation, but saw this not simply as a property or attribute of the EPR (something the EPR *has)* but as something which may come into being (or not) in the interaction and which demands a focus not on the EPR *per se* but on the social practices in which it is incorporated (Swinglehurst et al 2011). Pearce distinguishes between what he calls the 'active' and 'passive' keys of the computer, regarding reminders and dialogue boxes which 'pop up' in the consultation as the 'active' key, and contrasting this with occasions when the computer influences the consultation by its presence, the 'passive' key (e.g. when a doctor checks a result on the computer) (Pearce et al 2009).

I identified the EPR as simultaneously *product* and *process*, but a product that is never a 'finished product' but is instead a living text and constantly evolving, *created* and *used* by many. I began trying to unpack the complex relationship, which my data set exposed, between what I have called the *material* properties of the EPR and its *textual* properties. To recap, by material properties I refer to the monitor, keyboard, mouse and the effect this has on gaze and bodily conduct. By textual properties I refer to the information contained within, including medical notes, electronic forms, fields, prompts and alerts, for example. My early analytic work laid bare to me the complexity of the EPR and the formidable challenge which I had taken on in trying to make sense of this "EPR-in-use".

## 4.12 Mapping consultations

I began to 'map' consultations, adding to my transcripts columns for observations, analytical notes and reflections. I organised these in two columns relating to the 'material' and 'textual' properties of the EPR and found that mapping the consultations in this way helped me, in the early stages to gain the necessary analytical distance and to 'make the familiar strange' (Eliot 1950). I repeatedly asked myself these analytic questions as I worked through my transcripts:

- What is the *material* role of the EPR at this particular point?
- How are the *material* arrangements influencing the interaction?
- What is the role of the EPR *as a text* at this particular point?
- How is the EPR as a *text* influencing the interaction?

This separation of material and textual properties kept me alert to the complex relationship between computer and EPR and the inter-relationship between different modalities which I had identified as areas of interest. It highlighted convergence (and dissonance) between modes and also highlighted alignments (and misalignments) between different demands on participants in the consultation.

My observations and reflections, which were guided by the data set, contributed to an evolving appreciation of what have been called *focal* and *analytical* themes (Roberts et al 2005). This theme-oriented approach links analytic themes from linguistics and sociology to focal themes relevant to a professional domain (Roberts et al 2005). For example, I noted examples of analytic themes such as 'face-work' (Goffman 1955;Goffman 1967) and changes in 'footing' (Goffman 1981a) (which I describe in more detail in §5). I also noted focal themes (which link with professional concerns) such as the extent to which the EPR is 'shared', notions of asymmetry in the consultation, and 'agenda' setting (for example how and to what extent the EPR contributes to opening up certain agendas and closing down others).

For each consultation I made several journeys round this cyclical approach to data transcription, annotation and analysis, all the time adding further insights to my conceptualisation of the EPR and its role in the interaction (see Figure 5).
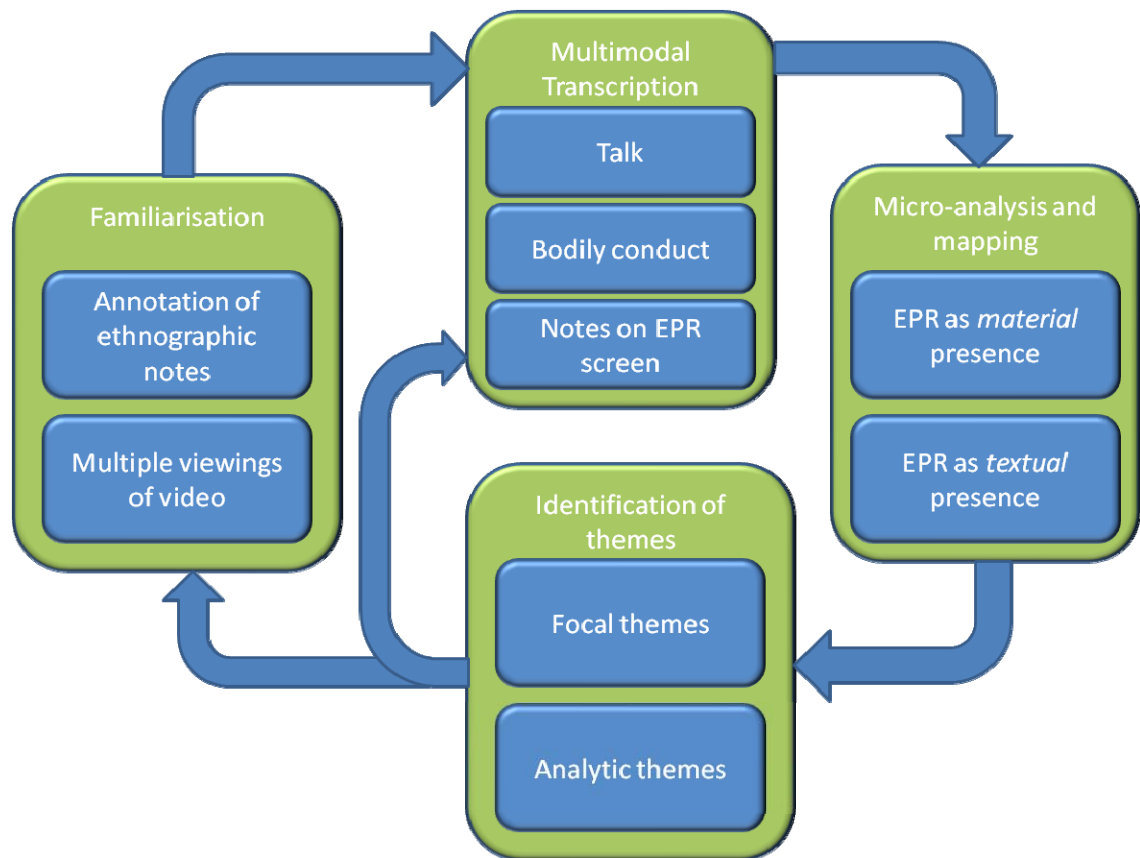


**Figure 5. Approach to transcription and analysis**

The mapping process helped me to analyse in detail how single interactions evolve in a moment-by-moment fashion, but also enabled me to select key instances of phenomena across the data set. By the time I had transcribed and analysed 12 consultations in full I felt I had reached a point of 'data saturation' (Pope, Ziebland, & Mays 2000) and was no longer seeing new themes. I became more selective in my transcription beyond this, choosing selected short sequences of interactions when exploring a theme in more detail.

Ultimately the usefulness of separating the material and the text was that it helped me to advance my conceptual framework. But as my conceptual framework, and my conceptual understanding of the EPR developed, so the value in keeping material and textual separate as analytic categories diminish-

ed. In later analyses I abandoned this categorisation in favour of a more 'holistic' orientation towards the EPR which has helped me to illuminate the discursive work that comes about through the incorporation of the EPR as a technology in the clinical consultation. My conceptual framework for analysis of the 'triadic' consultation will be the focus of §5.

## 4.13 Summary

In this chapter I began by presenting my broad theoretical perspective to my work and I have tried to build up a story of the iterative approach I have taken to my transcription and analysis of a unique data set. I have included a detailed description of my methods, including recruitment of practices, my experience of gaining access as an ethnographer and my approach to gathering consultation data. I hope that I have succeeded in making plain the emergent nature of my data analysis and the sense of methods and analysis evolving side by side. I hope I have also begun to highlight the EPR as multi-dimensional and complex and worthy of an analytic approach which embraces this complexity.

# 5 A conceptual framework for analysis of interaction in the 'triadic' consultation

This chapter forms a bridge between the earlier chapters in which I have focused primarily on the rationale and context for my research, including an introduction to my methods – and later chapters in which I will present my research findings. My approach to analysis of interactional data (which will be a particular focus of §7) involves drawing on a range of what sociologist Herbert Blumer has called "sensitizing concepts" (Blumer 1969). In contrast to definitive concepts which "*provide prescriptions of what to see",* sensitizing concepts *"merely suggest directions along which to look*" (page 148) (Blumer 1969).

I did not at the outset of my research approach my data with a specific (and potentially limiting) set of analytic questions in mind. My conceptual framework evolved through repeated rounds of viewing video data, transcribing consultations (§4.10.3), mapping consultations (§4.12) and conducting a combination of fine-grained and broader analysis. To this end the conceptual framework has evolved from the data and I have at each stage applied the principle of the hermeneutic circle – that is, the need to analyse the parts in detail while maintaining awareness of the whole, relating new micro-level findings to an emerging wider picture (Klein and Myers 1999). The combination of ethnographic methods and discourse analysis approaches has been particularly valuable in this regard, allowing me to shift constantly between what Erickson has called the "social microscope" to the "social telescope" (page 16) (Erickson 2004). I have drawn eclectically on a range of discourse analytic approaches to help me to explore the data and to enrich my understanding of the EPR in the consultation. This eclectic approach is not unusual in discourse analysis; MacLure refers to adopting an "*intentionally impure*" approach to discourse analysis in her investigation of discourse in educational and social research (MacLure 2003).

In this chapter I will outline some key concepts developed by Erving Goffman and Mikhail Bakhtin on which I have drawn extensively in my analytic work and to which I will refer in later chapters as I present my detailed analysis and

findings. This provides some of the theoretical context within which my work is situated.

## 5.1 The work of Erving Goffman

Goffman has written extensively on interaction in social life, for example in works such as *The Presentation of Self in Everyday Life* in which he adopts a perspective of social life as theatrical performance, in which participants engage in complex displays (performances) of impression management, carefully tailored to the particular social context at hand (Goffman 1959b). He was one of the first sociologists to identify face-to-face social interaction (which he called the "interaction order") as open to analysis in its own right through microanalysis (Goffman 1983) and his work was developed later by Sacks and colleagues in analytic approaches such as conversation analysis (CA) which I introduced in §4.4.1. Although Goffman's writings preceded the widespread introduction of complex technologies like the EPR – which complicate the social arrangements in a consultation – I have found that many of his analytic concepts offer a useful point of departure for analysis. I will briefly introduce five concepts:

- Engagement and involvement
- Participation framework
- Production format
- Footing
- Face and face-work

### 5.1.1 Engagement and involvement

Goffman defines engagement and involvement as follows:

> *To be engaged in an occasioned activity means to sustain some kind of cognitive and affective engrossment in it, some mobilization of one's psychobiological resources; in short it means to be involved in it*
>
> (page 36) (Goffman 1966b).

> *... A demand regarding engrossment is a demand on the inner spirit of the engrossed person*
>
> (page 38) (Goffman 1966b).

A consultation is an example of what Goffman called a "focused interaction" (Goffman 1966a) and one in which we might expect both clinician and patient to display such involvement. What seems crucial to this definition is the *combination* of the cognitive and the affective, and Goffman draws particular attention to the role of bodily conduct (or "body idiom" to use his specific terminology) in this respect. Although, says Goffman, the involvement that an individual sustains within a particular situation is a matter of inward feeling, assessment of involvement relies on some kind of outward expression, on how involvement is 'allocated'. To this end *actual* involvement is not only inaccessible (to interactants and analysts alike) but may be of little significance (page 38) (Goffman 1966b). What matters – and what is consequential to the unfolding of interactions in social life – is the outward expression (or display) of involvement, since this is all that interactants (and by extension, analysts of interaction) have to go on in their ongoing evaluation of a social situation.

When the EPR is introduced into the consulting room it places new pressures on the social interaction which clinicians and patients must manage. A particular challenge for the clinician in the contemporary consultation is the requirement to make 'on-the-spot' judgements about how to allocate involvement, and how to guard against the possibility that involvement in the interpersonal interaction is disrupted. This is a subject to which I will return in more detail in my analysis in §7.

### 5.1.2 Participation framework

The notion of participation framework is a useful one to bring to this analysis. In the words of Goffman:

> *The relation of any member of a social gathering to an utterance is his "participation status" relative to the utterance, and that of all persons in the gathering the "participation framework" for that moment of speech. The same two terms can be employed when the point of reference is shifted from a given particular speaker to something wider: all the activity in the situation itself*

<div align="right">(page 137) (Goffman 1981a).</div>

This concept extends the notion of talk in a social gathering beyond that of 'speaker' and 'hearer' to one which allows for there to be official (or *ratified*) participants and unofficial (*non-ratified*) participants, *addressed* and *un-addressed* recipients, *overhearers* and *bystanders.* In an interaction between two people, the addressed recipient is the person to whom a speaker directs his visual attention and to whom the speaker expects to hand over the speaking role. When three or more people are present, it is often through the direction of gaze that a speaker will mark out the addressed recipient from unaddressed recipients. Hearers are likely to take their cue from these kinds of performances in deciding when and how to respond in the interaction, as all parties monitor each others' activity.

An overhearer is someone who is able to hear and follow talk which is occurring in a social gathering although they are not in the role of official (or ratified) participant. If this is something which has been deliberately engineered (by the overhearer), then we would recognise this as an act of eavesdropping, but often one can find oneself in a position of overhearing without any deliberate intention to eavesdrop. I will illustrate this phenomenon with an example from my field work.

I spent many hours observing the workings of a practice administrative office, in which there were several members of staff working at the same time, often engaged in different kinds of administrative activity. I usually arranged to shadow one member of staff at a time (for example, an administrator who was summarising a patient's record) but it was understood that I was interested in the office activity more generally, and it was usual for staff to talk with each other periodically about office business, and for me to engage in (usually more limited) talk with the office workers when it felt appropriate. I was a *ratified* participant – both in my immediate interaction with the summariser and my more general interaction within the office.

However, on one occasion a member of the practice staff came into the office and struck up a side conversation with one of the administrators in the far corner of the room. They huddled together and spoke in hushed voices – an

indicator to me (and to other people in the office) that this talk was not designed for general hearership. I was *not* a ratified participant in this particular interaction, but despite the hushed tones I heard their talk clearly as an *overhearer.* Arguably the role of ethnographer is an unusual one, but this example illustrates how – through no intention of my own – my status as ratified participant changed (at least with respect to this talk) to one of non-ratified overhearer.

Bystanders are people who are not ratified participants, but who are within visual or aural range of the talk, and who can be perceived by the official participants to have some access to the encounter, even if this access is only minimal (Goffman 1981a). For example, when a receptionist is talking with a patient across a reception desk, the interaction may be accessible at a minimal level to patients who have already taken their seats in the waiting room, and who are now bystanders. Receptionists are likely to take account of this in their interactions over the front desk. For example, social talk about the weather is conducted differently from an exchange about a patient's repeat medication and this is at least in part because they take account of the wider social situation and the presence of bystanders.

We can see that Goffman's distinctions between ratified and non-ratified participation are sometimes ambiguous and one may maintain several roles across different participation frameworks at any point in time. Social participants – as moral subjects – must make considered judgements about the status of any knowledge which is gleaned as a non ratified participant in interaction, but the fact remains that one can never 'un-hear' that which is heard, even when this arises unintentionally. In the special case of the research endeavour, the ethnographer must make deliberate ethical judgements about which talk is reportable and which talk is not, based on a consideration of one's ethical commitments to the research process and the research participants.

The participation framework between clinician and patient in the consultation changes when the EPR is incorporated – a situation which arguably (and I draw on Goffman's terminology here) 'breaches the dyadic limits of talk' (Goffman

1981a). In my work I have been prompted to consider how and to what extent the EPR disrupts our usual understandings of the participation framework, or how it contributes to constituting 'new' participation frameworks. Goffman is careful to point out that the management of any encounter relies heavily on visual cues as well as spoken or auditory cues, especially when there are more than two participants involved, in which case it is often visual cues which serve to accomplish the distinction between official recipients as "addressed" or "unaddressed" recipients, for example.

### 5.1.3  Production format and the notion of the 'speaker'

The related concept of production format helps us to think more broadly about the 'speaker' from an analytical perspective. Goffman distinguished between the speaker as *animator, author or principal* – ideas which together can help us to clarify the *production format* of an utterance. I will summarise these in turn, drawing on Goffman's original publication (Goffman 1981a). The *animator* is the participant who moves his lips and utters words, with or without accompanying gesticulation. The *author* is the person who selects the sentiments which are being expressed and the words which are being encoded (and may or may not also be the animator). If, for example, a GP reads out to a patient a radiologist's report of an X-ray, then the GP is the animator of the spoken words but the radiologist is the author. The *principal* is the person whose position is established by the words that are spoken – whose beliefs are told and who is committed to what the words say (Goffman 1981a). In the X-ray example it is most likely that the radiologist is also the principal, but if the GP goes on to offer further interpretation of the results then s/he too may move into the role of principal. The principal is often in some particular identity or social role (e.g. a medical doctor) and in making this explicit s/he may contribute to positioning others in a reciprocal role (e.g. as a patient) (Goffman 1981a). We see from this that the notion of a "speaker" (and "hearer") is more complex than it would at first seem.

Charles Goodwin, in his related work on 'engagement frameworks', argued that greater attention should be paid to the 'hearer' (Goodwin 1981). In particular he

highlighted the importance of gaze in establishing (and dissolving) engagement frameworks. He was critical of Goffman's failure to expand the role of the recipient or 'hearer' to the same extent as that of the speaker, and suggested that participation be analysed as a temporally unfolding process, with a focus on *embodied activity*, which not only "*recovers the cognitive life of the hearer*" but also reveals interaction as a "*multi-modal, multi-party field of activity*" in which participants build relevant action together (page 25) (Goodwin 2007). In particular he drew attention to the importance of expanding analysis to include the actions of silent (though consequential) participants, such as the party whose talk is being quoted. Combining the insights of Vološinov (Vološinov V 1973) (§5.2) regarding the dialogic nature of language with his commitment to multi-modal analysis, Goodwin suggests a less "logocentric" notion of participation and communication, namely one which does not focus solely on the spoken word.

Goodwin's criticism of Goffman's failure to pay due regard to the multi-modal character of interaction is – at least to some extent – misplaced. Not only does Goffman's definition of the participation framework incorporate "*all the activity in the situation*" (Goffman 1981a) but his detailed description of footing includes reference to gaze, bodily conduct and the importance of the wider social situation (Goffman 1981a). And whilst it is true that Goffman does not elucidate the role of hearer to the same extent as that of speaker (and this is where Goodwin's detailed analysis of gaze and the interaction between speakers and hearers focuses) (Goodwin 1981), Goffman is nevertheless careful to point out that the analysis of participation framework and production format is a simplification which may miss "*the essential fancifulness of talk*" (page 147) (Goffman 1981a) and that subtle changes in footing (see below) require additional more detailed linguistic analysis (Goffman 1981a). For example, reported speech may involve additional "embedded" animators (or authors or principals).

It is certainly the case that the spoken word has attracted much greater emphasis from researchers of face-to-face interaction than other dimensions of talk's local conduct – a phenomenon which Erickson captures when he says:

*… the study of talk is so intellectually important and empirically intriguing that there is a strong temptation to give it central focus...many scenes of interaction are primarily constituted by the talk that is taking place in them (many, admittedly, but not all – and there's the rub)*

(page 244) (Erickson 2010).

Erickson's seminal work on career counselling interviews highlighted the complementarity – or mutual regulation – of the communicative roles of speaking and listening (Erickson and Shultz 1982c). In particular, he drew attention to the importance of the "listening response" and the occurrence of misunderstandings in cross-cultural interviews as a result of subtle cultural differences in the timing of the listening response (Erickson and Shultz 1982b). In a later volume he refers to speaking and listening as "*reflexively related in an ecology of mutual influence*" (page 4) (Erickson 2004).

## 5.1.4 Footing

Roberts has described Goffman's notion of 'footing' as the way in which roles and relationships of participants can change during the course of an interaction (Roberts et al 2005). Goffman regards changes in footing as a persistent feature of natural talk and speaks of the 'alignment' that participants in interaction take up – a change in footing implies a change in the alignment (or stance or posture or projected self) we take up to ourselves and others present, expressed in the way that we manage the production or reception of an utterance (Goffman 1981a). A change in footing involves a change in our frame for events. An analysis based on a consideration of the notions of participation framework (§5.1.2) and production format (§5.1.3) can help us to identify changes in footing, although subtle changes in footing may require attention to more detailed linguistic features which take account of the fluidity and multi-layered nature of speech production and interaction – including, for example, attention to bodily conduct. A change in footing does not follow grammatical structures or sentence structures – it can occur over a stretch of talk which is shorter or longer than a sentence; it may involve gross changes in posture or subtle shifts in tone (Goffman 1981a).

The following short extract taken from the opening of a consultation illustrates an obvious change in footing (Table 5).

**Table 5. Illustration of footing and face-work in the opening of consultation**

| Time | N/P | Words spoken | Bodily conduct |
|------|-----|--------------|----------------|
| 0.38 | D | hello Mr Z* = | D looks towards door as P enters |
| 0.39 | P | =good morning | |
| | D | c'mon in | D raises R hand towards P |
| | | how are you? = | D leans forward and -> EPR |
| 0.40 | P | =did you enjoy your break | D < - > P; P walking towards seat |
| | | (0.4) | D sits back in chair, oriented towards P, crosses legs, hands to lap |
| 0.42 | D | lovely | D nods |
| | P | good (0.2) you deserve it | |
| 0.44 | D | ye- well we went to [*name of city*] so er = | P sits down. D rotates chair and turns -> EPR |
| 0.45 | P | = sorry? | P - > D; D - > EPR |
| 0.46 | D | we went to: [*name of city*] | D < - > P. D props head in L hand on desk. |
| | | (0.4) | D brings hands to keyboard and looks down to keyboard |
| 0.47 | P | ↑oh | |
| | D | it was good | |
| | | (0.4) | |
| 0.49 | D | now how have you been | |
| | | (0.6) | |
| 0.50 | P | well | P - > forward; D's knees under desk, head rotated (right) -> P |
| | | (0.8) | |
| | | It's mixed actually | D props head in L hand. P tilts head towards D, still looking forward |

Up until 0:40 they exchange greetings as the patient makes his way into the room. The doctor asks "*how are you?*" as he orients towards the EPR, but the patient does not respond to this question, instead asking the GP about his recent "break". The doctor re-orients himself in his chair, sits back, places his hands on his lap and says it was "*lovely*". He goes on at 0:44 to say where he went, again re-orienting towards the EPR as the patient takes his seat. The patient apparently mis-hears and this is repeated, this time with the GP facing the patient. He then brings both hands to the computer keyboard, looks down towards it, and at 0:49 asks "*now how have you been*". Here we see an obvious change in footing. The GP has not only prepared for this by placing both hands on the computer keyboard but he marks his change of footing by prefacing his question with the word "*now*". This is an example of what Gumperz calls a "contextualisation cue" – in that it signals or infers some upcoming change in roles and relationships, or a change in contextual presuppositions for the

immediate ongoing interaction (Gumperz 1982;Gumperz 1992). The emphasis on the word "you" is another example. This effects a steer away from a focus on opening pleasantries (and specifically social 'chat' about the doctor's holiday) to a focus on the patient – and the 'official' business at hand. The patient responds to this by going on to describe his health experience in recent times, opening with "well (0:80) it's mixed actually" and the consultation moves forward. A change in footing has occurred.

It is common for changes in footing to include both linguistic moves (e.g. emphasis, intonation) and also other semiotic means, such as changes in body posture, or gaze, although changes in footing may also be much more subtle than in this example. Erickson has referred to this clustering of contextualisation cues as "modality redundancy" and has shown that the most significant turning points in counselling interviews involved the most obvious clustering of multiple contextualisation cues (Erickson and Shultz 1982a).

### 5.1.5 Face and face-work

Goffman's notion of 'face' has been succinctly described as *"a person's immediate claims about "who s/he is" in an interaction"* (Heritage 2001). This is distinct, but related to more enduring aspects of a person's identity. Goffman's own definition of face is *"the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact"* (page 5) (Goffman 1967). Participants in an interaction do interactional work in order to maintain their own face and ensure an image of self which is consistent, but they are also actively engaged in saving the face of other participants in the interaction. The maintenance of face is therefore an inherently social, cooperative and moral affair, involving each party in a careful balancing act of attention to the current circumstances, with an eye to the social world beyond the immediate encounter. Interactants may endure threats to their own face, if there is a sense that the 'self' may be being undermined by alternative images of the self which are inconsistent. Participants in an interaction are also mutually engaged in trying to avoid threats to the face of fellow participants. The flow of

an interaction is dependent on this mutual attention to face by all parties. Goffman adds to this by making the observation that

> … *in trying to save the face of others, the person must choose a tack that will not lead to loss of his own; in trying to save his own face, he must consider the loss of face that his action may entail for others*

<div align="right">(page 14) (Goffman 1967).</div>

He suggests that the performances that constitute face-work, including the tacit cooperation with others in their own performances of face-work are demonstrative of a willingness to abide by ground rules in social interaction.

In the short data extract shown in Table 5, the patient's comment about the doctor's break from work ("*good (0.2) you deserve it*") is an example of face-work. It suggests that in the (limited) capacity in which the patient knows the doctor, the patient feels that his break from the work of general practice is well deserved (the implication being that he works hard most of the time and that this should be rewarded with some time off…even if it means that the doctor has not been available recently for appointments). The doctor similarly responds with some face-work when he replies "*ye- well we went to [name of city]*". To simply agree with the patient that he deserved a holiday might be interpreted as presumptuous and immodest, but to disagree would be to suggest that patient's remark was misplaced. Instead, we see something in between. He begins with what seems like an agreement – which he self-repairs "*ye- well*" so that it becomes a partial agreement, and he then offers up some limited information about his holiday, which makes clear he is happy to engage with a modicum of 'social chat' at least in the context that the patient has opened up the topic.

## 5.2  The work of Bakhtin/Vološinov

The work of Russian literary critic and theorist Bakhtin/Vološinov,[7] originates in the early 20th Century, but was not available in English translation until the 1970's and 1980's. Bakhtin's work, which broadly resonates with Marxist orientations of his time, was a critical response to the dominant assumptions regarding language use which were prevalent throughout most of the early to mid 20th Century – specifically the traditional structuralist Saussurean view (see also §4.4) which characterised language as a system of pre-given representative signs which users of language select from and then *transmit* in order to make themselves understood i.e. a purely representational, neutral view of language. I will briefly describe three closely interrelated concepts:

- Language as dialogic
- Voice
- Language as a site of social struggle

### 5.2.1  A dialogic view of language

Bakhtin/Vološinov emphasised the importance that spoken utterances and written texts must be understood in terms of how they are responding to and anticipating other utterances or texts (including spoken or written texts). Vološinov states that the word is a "*two-sided act…the product of the reciprocal relationship between speaker and listener*" (page 86) (Vološinov V 1973) – a notion which Maybin explains as follows:

> *Any utterance or text, always, therefore faces two ways: backwards towards previous utterances, and forwards towards its own addressees*
>
> (page 70) (Maybin 2001).

This is Bakhtin's central notion of the *dialogic* nature of communication, the idea that meaning is only possible at the point at which speaker and listener (or

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[7] The authorship of some of the Bakhtin/Vološinov writings is controversial, with some critics believing that work attributed to Vološinov may actually have been written by Bakhtin. This debate is one I do not discuss further, but for the purpose of this thesis "Bakhtinian" refers to the work of Bakhtin and / or Vološinov.

writer and reader) connect, and that the specific meaning will vary depending on this immediate social context, and is therefore never neutral (Bakhtin 1981b). Blommaert explains this concept thus: that meaning "*is always a meeting of (at least) two minds and consciousnesses, creating results that cannot be reduced to either one of them*" (page 44) (Blommaert 2005d). Bakhtin/Vološinov concerns himself not only with specific utterances (compare this with Goffman's participation framework §5.1.2) but with the whole pool of utterances available to the speaker (or writer). He emphasises the importance of both the immediate and the wider social context of this interactional exchange:

> *... the forms of signs are conditioned above all by the social organization of the participants involved and also by the immediate conditions of their interaction*

<div align="right">(page 21) (Vološinov V 1973).</div>

One consequence of the dialogic nature of communication is that it implies that utterances or texts always contain at least one other voice. The distinctions which Goffman makes between 'speaker' (be it animator, author or principal) and 'hearer' become blurred. Within any single utterance is a response to what has preceded the utterance (a 'hearing') as well as anticipation of what may follow (a 'speaking').

### 5.2.2 Bakhtinian notion of 'voice'

The notion of 'voice' as the dialogically constituted 'speaking consciousness' is a core concept in Bakhtin's work and central to his conceptualisation of identity construction or 'becoming'. He regards the ideological becoming of a human being as a process of assimilating and appropriating the words of others and says that:

> *Each word tastes of the context and contexts in which it has lived its socially charged life; all words and forms are populated by intentions…the word in language is half someone else's. It becomes "one's own" only when the speaker populates it with his own intention, his own accent, when he appropriates the word, adapting it to his own semantic and expressive intention*

<div align="right">(page 293) (Bakhtin 1981a).</div>

The fundamental question for Bakhtin is "Who is doing the talking?" and his dialogic orientation entails a constant reflection on how meaning is constructed through chains of representation, in which each speaker "populates" language with his own intention. Reproduced voices are transformed and given a new evaluative accent (see §5.2.3). Integral to this Bakhtinian notion of voice is the 'intention' – where this relates to the intention to make oneself understood in a particular social context. This understanding depends, in turn, on what Bakhtin calls a 'responsive understanding', which is itself also dialogic and evaluative (Bakhtin 1986). Blommaert puts this as follows: "*Value, meaning and function are a matter of uptake; they have to be granted by others…*" (Blommaert 2005c).

The expression of this intention, and the 'responsive understanding' is tied to Bakhtin's concept of the "speech genre". Bakhtin used the term speech genre to identify typical situations of speech communication, or socially acceptable ways of speaking in particular situations or contexts, which are relatively stable (Bakhtin 1981a;Bakhtin 1986). Although genres are in themselves relatively stable, there is huge heterogeneity between genres.

> *Certain features of language (lexicological; semantic; syntactic) will knit together with the intentional aim, and with the overall accentual system inherent in one or another genre…Certain features of language take on the specific flavour of a given genre: they knit together with specific points of view, specific approaches, forms of thinking, nuances and accents characteristic of the given genre*

> (page 289) (Bakhtin 1981a).

Maybin points out that we learn genres just as we learn language and that genres are centrally important in articulating the relationship between language and culture; language is used and interpreted according to our knowledge of genres (Maybin 2001).

I will illustrate this with some simple examples. The kind of talk which occurs between doctor and patient in the consulting room is different from the kind of talk the same pair may engage in if they bump into each other at the

supermarket. Each is informed by experience of the social conventions which pertain to doctor-patient consultations and also of the kinds of talk and behaviours that arise in *ad hoc* meetings in public places (including supermarkets). Even though they may never have previously met each other in any other context than the doctor's surgery, it is extremely unlikely that the interaction will proceed as it might in the surgery (even if they do in fact discuss the patient's health). The meaning of the words "*How are you?*" in these two contexts is likely to be understood differently by both doctor and patient.

Similarly, a newspaper article reporting about a trial of a new drug for a debilitating disease will be written very differently to the academic research paper on which it is based. The tabloid report and the report in the broadsheet will also be recognisably different, with different evaluative accents, and a different audience – or readership – in mind.

The dialogic nature of language and its close inter-relationship with genre and socio-historical context renders language a very fluid and dynamic concept for Bakhtin. He uses the term "*heteroglossia*" to convey the sense of this dynamic interplay between a multiplicity of voices, speech genres, and social languages (Bakhtin 1981a). At its simplest level, the meaning of a word uttered at one particular place and time in any one situation is different from the meaning it would have in any other specific context, but it is the understanding of the context, and the genre in which the word is exchanged that is fundamental to its meaning – there is a primacy of context over text.

### 5.2.3 Language as a site of social struggle

Vološinov, in his work on the philosophy of language described the word as "*the ideological phenomenon par excellence*" (page 13) (Vološinov V 1973). Language is viewed as originating in the struggle and ambiguities of everyday life, as being inherently evaluative and inevitably passing judgement on the world as it describes it (Maybin 2001). Indeed Vološinov states "*There is no such thing as a word without evaluative accent*" (page 103) and goes on to highlight that the selection of each element in an utterance contributes to this, including for example the use of intonation which may in some circumstances imbue

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meaning which is quite different from the semantic composition of speech (Vološinov V 1973).

The social struggle which Bakhtin/Vološinov regards as central to the reciprocal development of language and persons is thought to manifest itself at all levels of talk, from an individual casual conversation to the level of national discourses. In particular, Bakhtin foregrounds a struggle or tension between what he calls "*centripetal forces*" of centralization, which are responsible for "*authoritative discourse*" which are fixed and inflexible (for example scientific dogma, a father's instruction, or particular political discourses) and "*centrifugal forces*" of language diversification, which are in turn associated with what he calls "*inwardly persuasive discourse*" and which allows for the diversification of language use within different social groups (e.g. different social classes; different age groups; different professions). For example it is an inherently social phenomenon (and not a matter of semantics) which results in a word such as "wicked" acquiring a positive meaning in some situations.

This flexibility in language use and this potential for language evolution across time and space means that language is never 'handed down' as such, but *endures* in a continuous process of becoming, shaped by (and in turn shaping) the evolving social worlds of which it is a part (Vološinov V 1973). To this end, language must be studied as a social phenomenon and not, argues Bakhtin, as an inflexible system of given signs which are universally understood to represent specific meanings. For Bakhtin, language use is a fundamentally ideological process.

## 5.3  Summary

In this chapter I have introduced some of the sensitising concepts (Blumer 1969) which have helped me to gain a greater understanding of the EPR-in-use. These concepts have come in and out of focus as I have drawn on them creatively and to differing extents at different times in my analysis. In this process I have been guided by my own sense of when and how these concepts may be valuable in illuminating practice, rather than by any pre-specified notion of one 'best' way of analysing a complex data set. I have experimented with

other 'ways of looking' but the selected works of Goffman and Bakhtin which I have foregrounded here have endured as being particularly valuable throughout my work. I will refer back to these in the remaining chapters as I turn to presenting more of my analysis and findings in §6, §7 and §8.

# 6 The electronic template and the changing shape of nurse-led chronic disease management

*When disparate events are viewed through a single coding scheme, equivalent observations become possible*

(page 608) (Goodwin 1994).

## 6.1 Introduction

In this chapter – the first of three main 'findings' chapters – I will focus on one aspect of the EPR: the electronic template. Templates are electronic forms which are widely used in general practice, particularly by nurses working in nurse-led chronic disease management clinics. These clinics provide regular review of patients with diseases such as diabetes, asthma and coronary heart disease (CHD). As the population ages, chronic disease presents an increasing burden to health care providers. In the UK, six out of ten adults report having a long-term condition that cannot be cured; it is not unusual for an 80-year old person to suffer from five or six chronic conditions (Nolte, Knai, & McKee 2008;Singh and Ham 2006).

The EPR facilitates one of the cornerstones of chronic disease management, the "three Rs" of registration, recall and regular review (Wagner, Austin, & Von Korff 1996) enabling practices to offer regular ongoing care to patients with these conditions. Exploiting the potential benefits of information technology has been identified as a key characteristic of a high-performing chronic care system, underpinning effective 'population management' (e.g. disease registration and stratification of the population according to risk) and "*supporting communications between health care professionals*" (page 82) as well as providing opportunities for data capture which can be used as a tool for continuous quality improvement (Ham 2010).

This explicit move towards a systematised approach to care brings with it an increasing need to negotiate an important tension between different ways of framing the patient – the patient as 'individual' and the patient as 'one of a population' (a more 'institutional' framing). This tension between individual and

institutional framings of the patient is crucial to understanding the opportunities and challenges posed by the EPR and is something I will explore in this and subsequent chapters.

In this chapter I suggest that the template introduces to chronic disease management both a new organisational regime and a new interactional regime. Blommaert et al. use the term 'interactional regime' to identify a set of behavioural expectations regarding physical conduct – including language – which emerge in social processes (Blommaert 2005b;Blommaert, Collins, & Slembrouck 2005). Whilst the term 'interactional' highlights the emergent or situated nature of social activity, the term 'regime' emphasizes not only a taken-for-granted dimension which regiments situated understandings of language, but also the importance of inequality of resources and power, matters of ownership and control, the production of subjectivities, and the idea that macro-discursive systems impose constraints on what people can do and say in particular circumstances (Blommaert 2005b;Blommaert et al 2005). Although Blommaert uses this term in the context of language practices in a multi-lingual environment, the concept is a useful heuristic for exploring the way in which patienthood and professionalism are constructed through sociotechnical and interactional practices which include the EPR. In this chapter I will show how the electronic template contributes to the work of regimenting interactions and regimenting care practices.

Although on the one hand it is recognised that "*chronic diseases require a complex response*" (Nolte et al 2008), work in the chronic disease clinic is often regarded as 'routine' in nature and the use of a template has been identified as one way of imposing routine (Rhodes et al 2006). Superimposing an inflexible template (or script) into a complex encounter changes the nature of the encounter, places new demands upon it and makes it difficult to achieve the involvement (§5.1.1) which Goffman identifies as central to meaningful communicative practices (Goffman 1966b). It is not only at this micro-level of the interpersonal interaction that the EPR can be seen to be productive. I will draw on ethnographic observation both within and outside the consulting room to contextualise this interactional work and to show how the EPR contributes

more broadly to the regimentation of chronic disease management practices. I suggest that the EPR contributes to a profound shaping of patienthood and professionalism, and to changes in the way that disease is defined and 'care' is understood and delivered. My analysis of these inter-related phenomena provide evidence that the EPR contributes to the bureaucratisation of care practices.

## 6.2  A morning in the coronary heart disease (CHD) clinic

I will begin by introducing some ethnographic field notes from observations of a nurse in her clinic for patients with coronary heart disease Box 1.

**Box 1. Field notes taken in a coronary heart disease clinic**

We were between patients and there was a 20 minute gap as a patient hadn't shown up for his booked appointment. The nurse started to check some cholesterol results on the computer, using an in-house guideline which was printed on a laminated sheet. Suddenly the screen froze. The system had crashed.

She jumped out of her chair and rushed out into the corridor where she was met by a secretary who had also left her desk and who was in a panic because the usual IT person was not in today. The nurse returned and said she couldn't get on with what she wanted to do. I followed the secretary downstairs to the reception area.

The tiny office adjacent to reception was soon full. The secretary was on the phone talking hurriedly to the IT supplier and two of the GPs were kneeling on the floor around the server, bums in the air, fiddling with buttons, while an alarm sounded. Another GP looked on from the sidelines joking about the reliability of IT. One GP stayed in his room and didn't join this impromptu meeting round the server. The receptionists kept themselves to themselves but one of them asked me quietly "Does this never happen in *your* place?"

I overheard the secretary saying "One of our doctors thinks it's the UBS" only to be corrected by the doctor whispering "not the U B S, the U *P* S" I discovered this meant the uninterruptable power supply, which struck me as a misnomer; it

was certainly causing plenty of interruption. Chaos really.

The receptionists were a bit stuck. Patients kept arriving but they didn't know who to expect and couldn't "arrive" them (meaning mark an A next to their name on the appointments list to indicate that they were waiting). The waiting room was filling up.

After a few minutes, some lights started flashing on what may have been the UPS and there was a visible collective sigh of relief amongst the GPs. The secretary was still talking to the IT supplier but the GPs returned to their rooms to resume surgery.

I went back to the nurse's room. The screen said "connecting" but did not appear to be connecting in any meaningful way. The nurse was flustered now and went downstairs to try to find out who her next patient was. As she followed the patient up the stairs I heard her warning the patient "We've got a problem today 'cos the computer has crashed and isn't working"

The patient sat down. The nurse began by saying "I'll have to do it a little out of order because I've no computer" She grabbed a yellow post-it note and wrote the patient's name at the top. The patient gave her a urine sample for testing. The nurse said it was fine and wrote "Urine NAD"[8] on the post-it note. She leaned over the corner of her desk towards the patient as she asked her "Do you know which medicines you are on from a cardiac point of view?" A familiar opening which I had by now come to recognise, although on this occasion I could not help noticing that for the first time it was the patient rather than the computer screen to whom the question was directed. The patient – smartly dressed and well-spoken – put her handbag on her knee and said politely "I'm prepared for all eventualities, my dear" as she produced a list of her repeat medications and handed it to the nurse. Reading down the list the nurse said "So…from a cardiac point of view you're on…nicorandil, isosorbide mononitrate, atorvastatin, diltiazem. Are you on aspirin?" The patient said "they" had stopped

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[8] NAD is a commonly used abbreviation meaning 'no abnormality detected'.

it because she bruises too easily, and then added that one of her medications had recently been increased during a hospital admission. The nurse handed the list back and turned to the computer, then typed a few keystrokes to see if the computer was working but it just bleeped and remained frozen. There was no further discussion about the medication or the admission.

The nurse took the patient's blood pressure, there was a brief discussion about exercise then the nurse announced "This is <u>so</u> confusing not having the computer...uuuuuhm… (long pause)…<u>diet</u>… do you have a balanced diet?

Then "What I think I had better do is your blood test, and just hope we are back on line after that. It just goes to show how we rely on computers". She kept checking and rechecking the computer. Blood sample taken, she returned to her desk saying "let's see if we have any joy (types keystrokes) <u>OOOooh</u> that looks encouraging." She leaned towards the computer and said to it "c'mon <u>you</u> can do it". She typed in a password but nothing happened. "Oh that looked so promising. Oh that is such a shame. We're <u>so</u> close. I'll just go downstairs and see if it is just me" The nurse left the room and I chatted with the patient until the nurse returned about 5 minutes later.

After 25 minutes of downtime the computer came back to life. The nurse turned to it and said "Let's see if we've got anything from your recent hospital admission" and opened up a hospital letter. She read it quietly and said to the patient "That doesn't say anything about you increasing the medication" The patient replied "they did" to which the nurse responded "I'm not disbelieving you" then turned to the computer again and sighed "it's gone again". The patient looked down at her repeat medication list on her lap and said that it was the nicorandil which was increased. The nurse responded "Sadly our return to the computer was only temporary so I can't do anything at the moment. I'll go and have a chat with Dr Vaughan as the cardiologists haven't organised any follow up. So since they increased the nicorandil how much have you been using your spray?" Patient replied: "Ooooo a <u>lot</u> less, only a third"

The nurse apologised saying "I'm sorry it's been such a higgledy-piggledy

consultation" and left the room again to speak to the patient's GP, returning with the advice that she should stay on the same dose of medication as it was the maximum dose and seemed to be helping. She made a note on her post-it note "nicorandil ↑30mg".

At the close of the consultation the nurse apologised again "I'm sorry. It was a bit of a come and go consultation" to which the patient replied "WELL DONE" then added gently "…you can go off computers".

The nurse was running 30 minutes late by the time she was ready to see her next patient.

This extract illustrates some of the ways in which professional clinical practice is changing as EPRs are being introduced. The nurse conveys a strong sense that the order of prompts and fields inscribed in the computer template is the 'right' order of conducting the clinic, warranting apology if things have to be done 'out of order'. She leaves the room twice, and it becomes "*higgledy-piggledy*" and "*come and go*". Whilst I was not surprised that it was disruptive and stressful when usual routines break down (especially with a researcher observing) this incident revealed the extent to which nursing care had become interwoven with technology use. The EPR contributes to the regimentation of the clinic, infiltrating the discourse in its presence and its absence.

The problem was not merely that the nurse could not access the patient's notes (the notes – as it turned out – were less reliable than the patient's account, at least with respect to her medication). Without the template, she found it difficult to 'go on' – indeed she said "*I can't do anything at the moment*" just before leaving the room to speak to the patient's GP. Neither is it likely that this senior, well qualified nurse cannot do a cardiovascular check without the electronic prompts before her eyes. It seems much more likely that it is *because* her embodied practices have become so finely tuned to incorporate the technology that to conduct the clinic without it has become almost impossible.

Garfinkel, in an early seminal text on medical records identified the handling of emerging local contingencies, the answering of the immediate question of "what

to do next?" as one of the main concerns of clinical work (Garfinkel 1967a). Sitting in this clinic I got a real sense that the consultation could not progress without nurse, patient and (working) template all co-present, and that often it was the template which prompted 'what to do next'.

The field notes illustrate the organisation-wide nature of the disruption. I witnessed a 'state of emergency', in which the usual activities of the clinic were (largely) suspended and I came to the uncomfortable conclusion that in extreme (and thankfully rare) situations the computer *becomes* the patient, at least inasmuch as it becomes the prime focus of involvement (Goffman 1966b) and correcting its ills becomes the highest and most urgent priority amongst clinical staff.

## 6.3  Introducing the template

A screen shot of part of a diabetes template is shown in Figure 6 with its fields for completion in one column and the 'last recorded' entries alongside for comparison. The asterisks identify data which are required for the Quality and Outcomes Framework (QOF). Data fields consist mainly of 'coded' entries requiring that clinicians select one Read code from a limited number of options presented.[9] Doctors made occasional entries into templates but the *completion* of chronic disease templates was primarily a task delegated to nurses (and in one surgery also to health care assistants). Administrators also contributed to templates in limited and defined ways. For example, an administrator with responsibility for the organisation of diabetes care may enter data into a template from reports received from the local diabetic eye screening unit.

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[9] Read codes, developed by James Read in the early 1980's, form the 'de facto' coding system for British general practice and are incorporated in all UK medical information systems which are approved for use in general practice.

**Figure 6. Screen shot of part of a diabetes template**

It was technically possible to bypass fields but some fields were 'linked' in such a way that having completed one field (e.g. smoking status) another field was automatically presented for completion (e.g. number of cigarettes per day) or automatically calculated (e.g. Body Mass Index was calculated automatically if height and weight were entered). The 'up' and 'down' arrow keys were used to navigate the templates, which typically stretched over three or four screens.

Many of the fields demanded a simple binary 'Y' (yes) or 'N' (no) response (as shown in Figure 6 with "exercise advice"). Selecting the 'no' option resulted in a blank field. In this particular example this is of little importance (if no exercise advice is given there is little point in recording it!). However in some cases (in Figure 6, the field reading 'seen dietician' is an example) entering 'no' (i.e. has not seen a dietician) renders 'invisible' the work of the clinician in making the enquiry or in completing the template field. To any future user of the EPR some 'completed' tasks in the template might therefore appear incomplete. In this sense the template privileges 'positive' findings and leaves room for ambiguity around 'negative' findings.

Some templates included pre-specified fields for free text, inviting comment on the Read-coded entry immediately preceding it. At one level this allowed greater freedom of expression, at another it pre-specified those aspects of the template where free text detail was regarded as potentially valuable.

Where there are data entries areas common to several different disease templates (e.g. fields for smoking status might be found on a diabetes template and also an asthma template) entries are made once, but these populate several templates simultaneously. However these data are then displayed in the 'last recorded entry' column (see right side of Figure 6) such that a clinician is always presented with an 'empty' template even if some data items have been recorded recently.

## 6.4 Representations in the template: the tension between individual and institutional constructs of 'care'

Having introduced what the template *looks like* on the EPR screen I will now introduce how I intend to conceptualise the template from a more theoretical perspective, and will briefly review some of the literature on the use of formal tools such as structured templates and the relevance of these to chronic disease management.

In §3.2 I described some of the difficulties inherent in defining the EPR. I went on in §4.5 to suggest that the EPR may be considered as a discursive construction and this is the orientation that I will take forward. In taking this perspective I adopt a notion of discourse, based on Foucault (see §4.4) as a *system of representation* – a set of rules and practices (including but not limited to language practices) which produce meaningful statements within a specific socio-historical context (Hall 2001). The EPR contributes to and sustains the discourses which brought it into being, through the representational practices it supports, and through which it mediates social relations; it contributes to the ways in which particular topics may be talked about and reasoned about (Hall 2001). For example, the nurse in Box 1 reasons that the cardiovascular consultation is not only something which should be orderly, but which ideally ought to follow a *particular* order, as set out in the template.

Berg and Harterink suggest that medical records feed into the production of particular kinds of bodies and different notions of "patienthood" (Berg and Harterink 2004). A diabetes template contributes to constructing what diabetes *is* (or can be) at any historical point in time. It organises what Goodwin calls

"professional vision" by establishing parameters and fostering a particular orientation to the world (Goodwin 1994). This incorporates not only *what* is relevant to record but also *how* to record what is relevant. Read-coded entries (page 123) predominate over free text, placing a requirement on nurses to engage in what Agar identifies as the diagnostic stage of institutional discourse – the process "*through which the institutional representative fits the client frame to the institutional frame*" (page 149) (Agar 1985) and tending to privilege 'hard' biomedical data that can be easily coded (Checkland, McDonald, & Harrison 2007;Rhodes et al 2006). Such data can be collated in audit, incorporated into practice databases and rendered 'transportable', though – as the quote at the beginning of this chapter suggests (page 117) – the very process which make this rendering possible produces an equivalence of observation that diminishes the complexity of that it seeks to represent – and may diminish its value. 'Secondary' uses of data (when data generated for one purpose are used for another) usually remain invisible to patients, but within contemporary general practice there is a growing workforce of IT personnel, coders, and data quality experts, all of whom routinely access patient files to engage in these institutional activities. I will look in more detail at the work of administrators in summarising and coding records in §8.

Although structured nurse-led chronic disease management clinics were established in general practice (particularly for diabetes and asthma care) before the emergence of electronic records, EPRs change what is possible. For example, with the EPR a quick search can demonstrate what proportion of patients with diabetes has an HbA1C (a measure of blood glucose control) below an institutionally defined target level, or what proportion of diabetics has been offered smoking cessation advice or dietary advice within a defined time period (or more precisely the extent to which such activity has been *documented*). It can highlight particular individuals who are 'off target' and trigger a range of responses designed to 'chase' patients, constructing a new category of 'patient' defined by the practice's procedures (Checkland et al 2007).

Attempts to standardise clinical terminology also predate EPRs. Berg points out that it is tautology to suggest that formal tools do not handle 'soft' data, since what we refer to as a 'hard' data item is one whose production has already been disciplined (Berg 1997a). However, although standardisation is integral to the 'scientific' approach to medicine, the move to a limited set of coded terms involves not just greater standardisation but also more reliance on strict *adherence* to the standard by those using it and poses particular challenges if certain aspects of the consultation do not 'fit' easily into boxes. Any ambiguity (and much interactional work) tends to be erased in the text-document which results, which comes to represent the institutional 'truth'.

The socio-historical context surrounding the EPR contributes to what Foucault would refer to as the *conditions of possibility* (Foucault 1970) for the almost universal uptake of the EPR in recent years (see also §2.3 and §2.4). The rise of evidence-based medicine as the norm against which 'good' practice is obj-ectively measured, the introduction of the Quality and Outcomes Framework (§2.4.3) and an increasing emphasis on accountability in the public sector is particularly relevant. Harrison has coined the phrase "scientific bureaucratic medicine" to describe a model of medicine which asserts that valid and reliable knowledge is mainly obtained from the accumulation of scientific research, and rejects the assumption that personal experience is the primary source of valid knowledge (Harrison 2002). Scientific bureaucratic medicine, says Harrison, is underpinned by a logic which is not only essentially algorithmic, but which tells the clinician what *ought* to be done, and as such constitutes a form of bureaucratic rule. He suggests this reflects a rise in political instrumentalism and aspirations of control, and is a policy response to: radical consumerism (which increases demand and delegitimises rationing); the growth of managerialism as a discourse (subordinating public sector professionalism) and the shift towards placing confidence in systems rather than trust in individuals (Harrison 2002). The EPR is one such 'system' and the template – in particular – represents a suggestion of what *ought* to be done (as the screen shot in Figure 6 and the nurse's repeated apologies in Box 1 support). It can thus be

considered as constituting a form of social control, subjecting clinicians (and patients) to instrumental, managerial constructs of 'care'.

Formal tools (of which the electronic template is an example) have long been the subject of debate between those who Susan Leigh Star has called "naïve formalists" (Star 1995) who see formalisation as desirable – since it affords a rational 'objectivity', opens up scope for manipulating data items and transporting them between contexts – and those whose view is that to impose formal tools is undesirable because it results in an impoverished version of the complex reality it seeks to represent. This tension has been called the *rationality-reality gap* (Heeks, Mundy, & Salazar 1999) or the *fatal paradox* between the nature of healthcare work and the standardization of this work (Berg 2004a). May et al. contrast the patient as source of a minimum data set with patient as a bearer of heterogeneous experience and narratives of ill-health (May, Rapley, Moreira, Finch, & Heaven 2006).

This paradox is part of an ongoing (and insoluble) ontological debate. Formal tools, whilst able to embrace a certain form of knowledge ('knowing that') can never replace the 'know how' or *tacit* knowledge which is central to professional practice, (Dreyfus and Dreyfus 1986;Polanyi 1958a;Ryle 1949;Schön 1983b) or what Polanyi has called the "art of skilful knowing and skilful doing" (Polanyi 1958b). Schön suggests that the problems of greatest human concern are often not amenable to the instrumental problem solving approaches which constitute the model of "Technical Rationality" (Schön 1983a). Berg has argued that instead of becoming "entrenched" in the duality or opposition of the formal and the informal, and pitching the "complexity of medical work" against the record's "impoverished representation of it", it is more productive to focus on *practices* and consider the ways in which skilful human work bridges the rationality-reality gap within networks of people and technologies (Berg 1997b;Berg 1996). Indeed he suggests that the generative power of formal tools lies in the very existence of the gap (Berg 1997b). From the perspective that the duality – between the 'complex reality' of healthcare and such representation of it as the EPR supports – is an impossible one to *resolve*, this insight encourages a helpful focus on rich descriptions of emergent practices.

Taking a more critical approach, Iedema – who has described the EPR as an 'organising discourse' – suggests that in using the EPR the clinician becomes complicit in creating clinical information that has a greater organisational 'reach' – the potential to exert "*lines of force across a territory spanning time and space*" (Latour, cited in Rose, 1999, p.50) (Iedema 2003;Rose 1999). Using the EPR is not only about managing the tension between the unique and the 'standard', and building bridges between them, but (to continue the metaphor) is also about which particular territories are explored, *which* bridges are built, and *which* bridges are torn down. My findings suggest that whilst it is indeed interesting to look at the creative practices of clinicians as they use the technology, it is also important to look critically at what is being 'produced' and what may be 'lost' as the EPR is incorporated in practice, and how macro institutional forces come to be enacted (and in turn constituted) in the micro-practices around the EPR.

The patient is not only a 'bearer' of narratives as May suggests (May et al 2006). The consultation is an opportunity for the patient to tell their story to an 'involved' listener (Goffman 1966b) – *who in turn shapes the 'telling' and is witness to their suffering*; (Berger and Mohr 1967;Heath 1995). Constructing a narrative in the context of an ongoing therapeutic relationship is one way in which a patient makes sense of their illness (Charon 2001;Greenhalgh and Hurwitz 1999). In this frame, the concern is with the patient's specific and particular experience, the 'here and now'– with making sense of the experience in terms which are immediately relevant to the patient. Repeated opportunities for this 'telling' contribute to building this therapeutic relationship over time and the possibility to unleash the 'therapeutic potential' which Balint identified within this interaction (Balint 1964).

In recent years there have been concerns about potential fragmentation of care, especially for patients with chronic diseases (Guthrie, Saultz, Freeman, & Haggerty 2008;Haggerty, Reid, Freeman, Starfield, Adair, & McKendry 2003). The concept of 'informational continuity' has emerged – namely "*the use of information on past events and personal circumstances to make current care appropriate for each individual*" (page 1220) (Haggerty et al 2003). The policy

emphasis on EPRs is offered as a potential solution, although continuity of information is no substitute for relational continuity in the primary care context (Guthrie et al 2008). It is important to consider the extent to which the EPR (and the need for standardised transportable data) may influence the moment-by-moment interaction within which the patient's opportunity for 'sense-making' rests. This sense-making would appear to be an important contributor to meaningful 'relational' continuity. It is also important to consider the contribution of the template to 'informational continuity.' The value of informational continuity as a contributor to continuity of 'care' rests with the value of the information which is granted 'continuity' in the EPR.

The chronic disease consultation is not the only context in which templates are used. Although most of the nursing consultations which I observed in my research involved templates, it was in chronic disease management that I felt the influence of the template was most powerful. This is perhaps not surprising. Within these consultations lay the greatest potential for a clinician to act as 'witness' to the patient's suffering (because in chronic disease, there is no cure and suffering is ongoing) (Berger et al 1967;Heath 1995) and *also* the greatest potential benefits of institutional audit and managerial control since chronic disease management is the main focus of the clinical indicators within QOF (§2.4.3). In the sections which follow I will present analysis of my research data to support my argument that the EPR contributes in profound ways to: the definition of disease; the delivery of care; the construction of patienthood and the construction of professional habitus.

## 6.5  The contribution of the EPR to the way disease is defined

One striking observation about the role of the template in the chronic disease consultation was also the most unsurprising and relates to the abstraction of the disease from the patient. More significant was the separation of the patient's body into its different diseases, with each chronic disease resulting in a different occasion for chronic disease management, often led by a different nursing professional and to a different timetable. That patients (and nurses) ought to be able to discern one chronic disease from another or one symptom from another

in the face of multiple morbidities was usually taken for granted. A common way of framing the purpose and scope of the chronic disease consultation was to use statements such as "*to look at things from the cardiac point of view*" or "*how have things been from the diabetes point of view?*", or more simply "*SO::: asthma review*". These questions do the work of establishing what is 'figure' and what is 'ground' and highlight what is relevant to the current activity (Goodwin 1994). Only occasionally was this separation of the patient into different chronic diseases marked out by nurses as potentially problematic. An example is shown in Box 2, taken from a coronary heart disease (CHD) clinic.

**Box 2. Framing the purpose of the chronic disease management clinic**

A frail 86 year old gentleman struggled in to the clinic, barely able to walk. He was very deaf. He hung his walking stick over his chair and grimaced as he sat down, looking as if he was in pain.

The nurse said loudly "We've called you in to look at you from the heart point of view. I know you have a lot of other things going on but we've called you in to look at your heart." She then asked "How often do you use the angina tablet under your tongue?" The patient replied in a way which made his most pressing concern clear: "Not much...for the simple reason that I can only crawl like a tortoise"

Nurse: "and the simvastatin?"

Patient: "no...I stopped that. I think it's giving me diarrhoea. These hearing aids are not very good you know. I've had it adjusted several times but I'm really disappointed. I had hoped for better than this"

Her statement "*I know you have a lot of other things going on but we've called you in to look at your heart*" performs two contrasting functions. On the one hand she alludes to the difficulty inherent in the task of separating out his 'heart' problem when there are a "*lot of other things going on*" and makes it legitimate for the patient to frame his heart problems in a wider context. However, in the next part of her utterance "*but we've called you in to look at your heart*" she

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exhibits what Blommaert calls a "scale jump" (Blommaert 2006). She shifts quickly from this individual unique 'here and now' framing ("*I know you have*") to a more general institutional framing ("*we've called you in*"). This shift not only implies certain limits around what may happen in this clinic but also indexes what is most relevant, and exerts a degree of control.

The patient referred to in the example responds by juxtaposing his prime concerns next to the 'core' concerns of this clinic. First, he rarely uses his angina tablet, but only because his mobility problem far outweighs it. Then a question which is ostensibly about his cholesterol medication (simvastatin) moves swiftly into a complaint about his hearing aids. Neither mobility nor deafness are pursued any further; nor are they recorded in the EPR. There is no 'space' for such concerns in the CHD template; these are not relevant to this institutional account. The fact that his mobility is so poor that his angina is barely triggered is an 'unremarkable' problem in this clinic. One cannot conclude that these concerns are not pursued solely and directly *because* there is no space (i.e. no field) for them in the template but I suggest that the practice of using the template contributes to constituting the 'semiotic space' of the clinic and defining how disease and health experience is constructed.

Not only is the template oriented strictly around one disease process, but around a particular *version* of this disease process. A complex disease such as diabetes is squeezed into a series of codes and numbers: weights, units of alcohol, smoking status, blood pressure, results of urine dipstick tests, pulses (present or absent) – to name a few – with minimal (if any) supporting free text. Such data travel well beyond the consultation into future consultations and into other institutional processes, but the narrative is largely lost.

The following transcript (Table 6) shows a nurse's first orientation to the EPR screen, which occurs approximately three minutes into a diabetes consultation. This immediately follows her request to the patient "*CAN WE DO a few measurements today*" and draws attention to the EPR for the first time, contributing to the sense that "*measurements*" are relevant to the EPR and reportable. The measurements, she says, will reveal where "*everything*" is.

**Table 6. Nursing consultation, as nurse orients to the EPR screen**

| Time | N/P | Words spoken /sounds | Bodily conduct | Screen |
|------|-----|---------------------|----------------|--------|
| 6:27 | N | CAN WE DO a few measurements today [then just to see] | N < - > P. N places R hand on her desk | Template for diabetes. N has already entered a response alongside "*type of monitoring*" – "*diabetic annual review*" with date. Cursor highlights Pt test bl /urine (Y or N) |
| 6.29 | P | [yes certainly dear] | P looks down at the papers on nurse's desk | |
| 6.30 | N | (0.2) uhm where everything is | N turns head/upper body -> EPR | |
| | | (0.4) | | |

Nurses frequently drew on specific chronic disease frameworks to interpret patients' talk. Sarangi and Slembrouck suggest that deviations from the institutional agenda are generally brief in bureaucratic encounters, as the institutional representative (in this case, the nurse) tends to interpret the interaction in direct relation to the institutional script (the template), steering the direction of talk as judgements of institutional relevance are made – a process which they call "bureaupretation" (Sarangi and Slembrouck 1996). We can see an example of bureaupretation in the next scenario.

We join the consultation near its end almost 16 minutes into a consultation which lasted 17 minutes. The nurse and patient have just discussed his recent visit to the eye clinic and the nurse anticipates the next upcoming field in the template, relating to "Depression Screening". This is shown in Table 7.

The QOF requires 'case finding' for depression amongst patients with diabetes and CHD. QOF guidance says that screening for depression should include the use of two standard questions concerning mood and interest.[10] I did not see this standard wording used by any doctor or nurse in any of my fieldwork, although it was usual for nurses to incorporate their own versions of these questions enquiring about the 'mood' or feeling 'down'.

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[10] The screening questions for depression are 1) During the last month have you often been bothered by feeling down, depressed or hopeless? 2) During the last month, have you often been bothered by having little interest or pleasure in doing things? A 'yes' answer to either question is considered a positive test. A 'no' response to both question makes depression highly unlikely (NHS Employers and General Practitioners Committee 2008)

**Box 3. Interactional context for Transcript in Table 7**

Mr. Cotton is a 78 year old patient who is well known to nurse Sarah as they have met on numerous previous occasions for diabetic reviews. He has had diabetes for 18 years.

About five minutes into this consultation the nurse completes a template field about alcohol intake, entering 14U (units), copying the details from the entry of the previous year without discussion. Three minutes later (in response to the nurse telling him that his blood pressure is very good) the patient says:

Patient: Well I look a- I (.) look after myself I drink <u>whiske</u>y to counteract the cigarettes y'know

Nurse: °Do you° he .hhh a whiskey a day?

(0.4 )

Patient: yeh

**Table 7. Extract from a consultation in diabetic clinic**

| Time | N/P | Words spoken /sounds | Bodily conduct | Screen |
|---|---|---|---|---|
| 18.54 | N | Does the diabetes get you ↑ down Mr C? | N - > EPR; P looking down doing shoelaces<br>N < - > P | Diabetes template, with fields completed relating to foot examination.<br>Cursor highlights field "Eye Clinic" (Y or N) |
| | | (1.0) | N < - >P. P puts hands on both knees. | |
| 18.57 | P | I get bored with life. | P frowns | |
| 18.58 | N | Bo::red?<br>What bored with the f:ood o:r | P turns head to gaze at adjacent chair. N - > P<br>P < - > N | |
| | | (1.2) | | |
| 19.00 | P | HA<br>HA HA | P turns to adjacent chair and lifts jumper | |
| 19.02 | P | .hhh ah well °never mind° | P lifts jumper as turns toward N again | |
| | | (0.2) | | |
| 19.04 | P | I<br>u::- used to be a drinking man | P <-> N<br>P looks straight ahead. N remain looking at P | |
| | | (0.8) | | |
| 19.06 | N | [right | | |
| 19.07 | P | [And<br>when I had to give up the beer I had to give up an awful lot of other things: (.) surprising really. | P holds jumper up in front of him and arranges it, looking at it as he talks | |
| 19.11 | N | °<Yeah (.) yeah>° | N - > P | |
| | P | mm | P looks ahead, purses lips | |
| 19.13 | N | So you have a whiskey | P turns to N | |
| | | (0.8) | | |
| 19.15 | P | Yeah I have a whiskey at night | P < - > N | |
| 19.16 | N | °yeh° | N nods | |
| | | (0.2 ) | | |
| 19.17 | P | Cos ↑whiskey hasn't got much sugar in<br>[surprising | P returns to rearranging jumper holding it up in front | |
| | N | [no: | | |
| | P | its all been turned into alcohol a good whiskey maker so | | |
| | | (0.8) | P still holding jumper in front turns to N | |
| 19.23 | N | And beer has quite a lot of carbohydrate doesn't it | N - > P , N nodding slightly | |
| | P | [yeah | P returns gaze to jumper, nodding | |
| | | [when<br>you think of the volume | | |
| | | (0.6) | N turns gaze to her desk | |
| 19.27 | N | °okay° | N gazing at desk, P arranging jumper | |
| | | (1.6) | | |
| 19.29 | N | °All right then° | | |
| | | ((N typing for 12 seconds)) | P looking ahead putting jumper over head. N rotates to face EPR | Bypasses field "diet"<br>Bypasses field "impotence"<br>Next field is "depression screen" –enters 'Y'. |

Here the question "*Does the diabetes get you down Mr Cotton*" is met by a one second pause (which is relatively long in conversational terms). The patient frowns and says he is "*bored with life*" widening the perspective towards his broader life experience. The nurse responds with a question which invites

further elaboration, but which also refocuses on a narrow diabetes-specific cause (the food). This is an awkward moment and prompts the patient to withdraw his gaze, laugh ironically, as he starts to put on his jumper and says quietly under his breath "*ah well* °*never mind*°" in a way which communicates frustration and lack of understanding. Mr Cotton goes on to offer a poignant narrative and paints a picture of a man who has reluctantly made significant life changes which have curtailed his enjoyment of his life – being a "*drinking man*" was part of his (male) identity and conjures up a social life around alcohol ("*when I had to give up the beer I had to give up an awful lot of other things:*"). The story gets only a brief airing. At 19.11 the nurse slows her speech in her response "*<yeah, yeah>*" perhaps encouraging him to develop it further, but the rational 'scientific bureaucratic' nature of this encounter is restored from 19.13 onwards, the patient justifying his whiskey at night by reference to its minimal 'sugar' content, which in turn is re-contextualised into even more 'scientific' terms when the nurse goes on to speak of 'carbohydrates' and 'volumes'.

After the patient leaves, less than a minute later, the nurse returns to the template and corrects her entry about alcohol from 14 units to 7 units. "A whiskey a day" in the patient's narrative has become 'one unit' in the nurse's coding without any understanding about how big 'a whiskey' is, effecting an uncritical shift from an *unquantified* volume of whiskey to an (apparently) *quantified* one. The complex interaction between his diabetes, his identity as a "drinking man" his losses and his "boredom with life" is reduced to an institutional account which reads, simply: Depression screen – 'Y'; Alcohol – 7 units. The construction of particular versions of diabetes contributes to constructions of particular kinds of patients – I will come back to this in more detail in §6.7.

## 6.6 The contribution of the EPR to changes in the ways that care is delivered

The EPR contributes significantly to the ways in which care is delivered. It is often the prompt to care processes, defining how and where care begins (and ends) as well as contributing to the way in which the consultation evolves. The 'need' for care is often defined by EPR diary dates ('overdue diary entries'),

overdue 'medication review' dates and audits in "Population Manager" which identify patients with missing QOF data and prompt the invitation of the patient to the clinic by practice administrative staff. Patients attend regularly, or may sign disclaimers to say that they do not wish to attend, in a process which is firmly institution-led, rather than patient-initiated.

An extract from a letter of invitation to a CHD clinic is shown in Box 4. The invitation is framed as an "*offer*" albeit one which is "*strongly advised*". It is noteworthy that the letter is signed off by a practice administrator (rather than a clinician) and couched in institutional terms ("*We are now regularly reviewing…*"; "*We are just striving…*" The potential benefit to the patient remains opaque and the justification for the check is presented only in terms of "*maintaining the standards*" (whose standards, and what they may be are not made explicit) or "*regular*" procedure.

**Box 4. Letter of invitation to CHD check up**

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Dear *[name]*

We are now regularly reviewing all our patients within the Practice who have chest pains, angina or who have had a heart attack.

As a result of this we would like you to attend a Health check clinic with our Health Care Professionals.

If you would like to take up this offer, which we strongly advise, please book an appointment for a blood test and then one week later a 15-minute appointment for a "cardiovascular check-up" with the Nurse or Health Care Assistant…*[further instructions]*

There is no need to be concerned about this appointment we are just striving to maintain the standards of care we provide for you.

Yours sincerely

*[name]*

Practice Administration

…………………………………………………………………………………..

From *[name and patient number]*

To administration

I do not wish to attend the health check clinic

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Chronic disease consultations were often characterised by features recognisable as bureaucratic processes, with a pervasive linearity, a tendency for consultations to start and finish with the same questions and a focus on information gathering and documentation. Although not deterministic of what happens in the detail of the interaction, templates do encourage a certain direction of travel and the practices around using them contribute to constituting the interactional regime. They shape what will be talked about when, place constraints around what is allowable talk in this context and contribute to the asymmetry of the encounter – an observation I will consider in more detail in §7. In the following extract from my field notes (Box 5) we see some evidence of how the EPR contributes to the way in which care is delivered.

**Box 5. Field notes of observations in the coronary heart disease clinic**

Mr. Martin walked in and handed the nurse a urine bottle which she put on a bench at the side of the room. She sat down at her computer and looked at it as she said "We have called you in to look at things from the <u>heart</u> point of view" There was a pause as she flicked onto a summary screen where were listed the patient's medical problems and added "about your an<u>gina</u>". The patient nodded and said quietly "no problem."

Still facing the computer, the nurse looked at a screen of medications and asked the patient about his use of GTN[11] (an angina spray) and then read out loud a few selected medications from the screen and said "From a <u>heart</u> point of view that's <u>it</u> isn't it?"

Mr Martin sat quietly as the nurse started to type slow deliberate keystrokes. In a loud voice she marked her typing with exclamations "T (pause) C (pause) I (pause)" as she navigated towards the "Secondary Prevention CHD" template. As she swivelled her chair towards the patient she said "We'll <u>start</u> with your blood pressure" and went ahead to measure it with her sphygmomanometer. After she had done this she moved the equipment aside and looked back at the

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[11] GTN or glyceryl trinitrate is a drug which comes in the form of a spray. Patients spray the drug under their tongue to alleviate symptoms of angina.

computer saying "up a tiny bit last time and up again today…154 over 64…we'll need to keep an eye on that."

She went on to measure the patient's height and weight then dipped a stick into the urine bottle and held it up to compare its colours with those on the side of the bottle of dipsticks. The patient said "What does that do then?" and the nurse explained that "We're mainly looking for protein and glucose". When she discarded the stick into the bin, the patient stood up as if to leave, and the nurse said "You can't go yet" laughed loudly and said "We're not finished yet". The patient joined her in laughter and sat down again.

The nurse worked down the template line by line, asked him if he drinks alcohol, then enquired "Does it get you down at all?" I recognised this as a reference to the depression screening questions required by QOF. He shook his head and the nurse returned to the medication screen, then back to the template and said out loud the names of the selected medications once again, this time typing Y(es) in response to a series of fields in the template about statins, beta-blockers and so on as she announced them. The computer made a bleeping noise while she took a blood sample from the patient's arm, and this attracted a sideways glance from the nurse. A new message had appeared at the top of the screen reading "coffee time." I had seen this messaging being typed in at the reception end on a previous day – the coffee would be ready on the trolley in reception.

After the nurse finished taking blood the patient asked "Is that it?" once again indicating a keenness to go. The nurse looked back at the blood pressure result on the screen and again said "It was a bit high last time" referring to a reading from about 6 months earlier "We'll check it in a month and you can see the GP afterwards. He may leave your medication alone but he may want to change it" She typed a free text entry into the EPR "Re-check BP in 4 weeks and if no change, to see GP."

The patient left.

This extract from field notes was typical of my experience and illustrates several important aspects of the CHD clinic. The first relates to how the consultation came about – it is the result of the surgery having "*called the patient in*" – by sending a standard letter of invitation. It was not uncommon for patients to express a lack of understanding of why they had been summoned for 'care'. For example, one asthma review opened with the patient sitting down and asking "*What do you want to see me about then?*" Often 'recall' was the result of an administrator conducting a monthly search of the EPR for patients with chronic diseases whose review was due. Sometimes it was prompted at the reception desk by a patient requesting a repeat prescription and the EPR indicating an overdue "medication review". In terms of care processes, framing the clinic as an opportunity to *"look at things from the heart point of view"* conveys a responsibility to the patient to discern what may be relevant in this encounter and excuses the nurse up front if she is unable to deal with a topic that falls outside of her institutional remit.

In this extract we see how the nurse suggests that the clinic will be an orderly affair in which she (and the template) will set the agenda: "*We'll <u>start</u> with your blood pressure.*"  The detail of the ordering is obvious to the nurse, but not to the patient, who twice assumes they have reached the end of the consultation only to be advised that it is not "finished" yet. This consultation was brought to a conclusion by the nurse, and corresponded with the completion of the final line in the EPR template.

The need for data was – on some occasions – the primary reason for the chronic disease consultation. In one CHD clinic the patient began by apologising for having made a telephone call to the nurse three days earlier to check whether it was still necessary for her to attend her review appointment. The patient had been seen for a cardiac review only a few days earlier at the hospital cardiology clinic. The nurse's response was to explain that the practice is not always sent the information by the hospital "*and we have to have our records up to date.*" I was struck by what seemed like an explicit, frank and unapologetic bureaucratisation of care practices. The 'need' for data seemed to outweigh any need that this particular patient felt (or necessarily had) for care.

In the following examples I show how this institutional ordering reveals itself in the detail of the interaction. First I will introduce a scenario from an asthma clinic in Box 6.

**Box 6. Scenario from the asthma clinic**

An annual 'asthma check' with a nurse (N) and a patient (P) who have not met before. The patient has been sent a recall letter by an administrator and invited to book an appointment with the "Asthma Nurse Specialist". Annual asthma reviews are part of the QOF which requires:

- A record of smoking status
- Evidence that an asthma review has taken place

There are QOF guidance notes which recommend proactive structured review and suggest what such an asthma review might include.

The patient has been using asthma inhalers for 32 years.

The consultation lasts just over 19 minutes (of a 20 minute appointment slot) and all documentation in the EPR is done during the consultation. The nurse consults over the corner of her desk. The computer monitor is squarely placed in front of her chair – the patient cannot read it.

A transcript from the opening of this consultation is shown in Table 8.

**Table 8. Setting up the frame for the asthma consultation**

| Time | N/P | Spoken word | Bodily conduct / notes on EPR |
|---|---|---|---|
| 01:08 | N | <u>So really</u> straightforward. | N puts paper on desk |
| | | (0.4) | N rotates body and gaze to face P, her hands on her lap. P looking at N |
| 01:09 | N | Asthma assessment | |
| | | (0.4) | |
| | P | Okay | P nods |
| 01:11 | N | to see how your asthma's do:ing: | N raises both hands in front |
| 01:13 | N | what you're doing w- with it when it's good, what you do with it when it's ba:d, (0.2) have you any problems with your ↑inhalers (0.4) .hhh | N uses fingers to count (on "good", "bad", "problems") |
| | | (0.5) | N hands open out in front of her |
| 01:19 | N | <u>Very</u> straightforward stuff | N hands to lap |
| | P | Oka[y | P nods |
| | N | [all right? .hhh | |
| 01:21 | N | U:::hm | N rotates body and gaze to EPR screen, hands on lap |
| 01:23 | N | What I've got <u>here</u> | N gestures her open hands towards the EPR screen (displaying the patients "summary" screen) |
| 01:24 | N | Is that you're on:: (0.4) a purple inhaler? | N rotates back towards P, bringing hands together |
| 01:26 | P | (0.2) Yeh (.) uhm (0.2) seretide. | P glances briefly towards the EPR screen |

Here the nurse sets up the frame for the consultation. She faces the patient as she introduces the consultation as *assessment*, firstly to see how "*your asthma's doing*" (an assessment of the asthma) which she then reformulates as "*what you're doing with it when it's good, what you do with it when it's bad*" (an assessment of the patient's practices). Again we see the chronic disease as separate from the patient and as 'doing' or 'performance' rather than as subjective experience. The use of the word "assessment" sets an evaluative tone for this meeting and anticipates the nurse's upcoming talk. This will include evaluation of his smoking status, his inhaler technique, his compliance with medication and a measurement of his peak flow.

At 1:08 and 1:19, the nurse emphasises that it is *really* or *very* straightforward, and at 1:13 she counts on her fingers a three-part list which contributes to a sense of the linearity of what may follow, laying out the parameters which define what both she and the patient must try to achieve. It is also an attempt to be reassuring but this is a reassurance about what he may expect of the structure

of the clinic, rather than a reassurance that his specific concerns will be addressed.

What is noticeably absent in this example is any question of "how have you been?" or "how have things been for you?" The nurse is not inviting an open-ended discussion of all the patient's concerns (or even his concerns about his asthma) but is laying out the territory in advance so that the review can move on, and dealing with any potential for misalignment between what the patient may expect of this meeting and what she is required to do.

The notion of asthma as embodied performance or 'practice' (Mol 2008) is important to both patient and nurse. For the patient, this incorporates how he performs his inhaler technique and uses his peak flow meter. These two measurements inform the nurse's suggestion for action (to increase the dose of his steroid inhaler) *before* she elicits any account of his asthma symptoms. For the nurse 'doing asthma' incorporates meeting performance indicators for QOF as well as having to deal with the contingencies of the interaction as they arise.

At 1:21 we see a change in footing (§5.1.4) as the nurse turns her body and gaze towards the EPR, her elongated utterance "*u:::hm*" ensuring that she retains the interactional 'floor' (or the speaking rights) in this turn (Edelsky 1981). She gestures towards the EPR as she announces "*What I've got <u>here</u> is that you're on a purple inhaler.*" This not only introduces the inhaler as the next topic, but establishes the EPR as an important authority in the core business of the consultation (see §7) and contributes to the asymmetry around who gets to ask the questions. It is only when the nurse orients towards the EPR that the asthma assessment 'proper' begins, an explicit reference to the EPR as a key structuring device in this consultation.

After this data extract, the nurse explains (at 2:09) "*What I've got here* (N gestures with two hands towards the screen) *is some questions that I – I need to ask you…they're fairly straightforward ones but what they tend to do with is that they will flag up whether there >actually< we <u>have</u> got what w- what <u>I</u> would call breakthrough symptoms.*" She goes on to ask him about his smoking.

The institutional imperative is clear in her choice of words *"I need to ask you"* and her orientation towards the screen at this point marks out the EPR as posing the questions, or as 'author' (§5.1.3). Again she highlights the *"straight-forward"* nature of the task.

The next field in the template is "inhaler technique". As the patient brings the inhaler to his mouth, he coughs loudly five times, beats his chest demonstrably with his hand and announces:

Patient*: "I do suffer very badly from phlegm in the mornings…which I presume is part and parcel of having asthma."*

Nurse*: "It can be (.) yeah which (0.4) anyway I – we'll talk about that in a minute…we'll do the inhaler first."*

Given that the structured inventory of questions has already become apparent in this consultation, his demonstrative gestures are one way of ensuring his own concerns are raised. The nurse says that they will talk about it in a minute, but will do the inhaler first, thus steering the patient's activity back to the institutional script. For the next seven minutes the patient repeatedly demonstrates his inhaler technique. The nurse does not revisit the issue of the morning phlegm.

When the nurse introduced the asthma assessment the "questions" in the template were explained as a way of identifying symptoms, but in practice she moves from enquiring about smoking, to assessing inhaler technique to measuring peak flow (the patient performs a similar coughing and clutching of chest as he moves the peak flow meter to his mouth). She does enquire specifically about asthma symptoms, but not until almost 16 minutes into the 19 minute consultation, when prompted by a template field reading "night symptoms".

The next short extract in Table 9 comes towards the end of a different asthma consultation led by a different nurse. Again it shows the extent to which the template sets out the parameters for the consultation. In this consultation the computer is positioned so that the patient can see the screen.

**Table 9. End of an asthma consultation**

| Time | | Spoken word | Bodily conduct | Notes on EPR |
|---|---|---|---|---|
| 20.33 | N | Excell[ent.<br>　　[(( puts pen down on desk))<br>(0.8)<br>Right I've done everything<br><br>↑yes: | N turns head to look at EPR screen. P looking at N<br><br>N clasps hands together<br><br><br>N sits upright and turns to face P | Cursor is against line in template reading Asthma F/U (enter date e.g. 2D = 2 days 1M = 1 month 3Y = 3 years) |
| | | (0.6) | | |
| | N | Your free to g[o | P moves hand to pick up inhalers from desk | |
| 20:36 | P | 　　　　　[thank<br>[you | | |
| | N | [he he<br>no problem | | |

Here it is the arrival at the final field in the template which identifies that the nurse has "done everything". She faces the screen as she makes this announcement and clasps her hands together in a posture suggesting closure. The patient is 'free' to go now that she has completed her task – a choice of words which conveys the sense of the constraints imposed within the organisational regime.

## 6.7 The contribution of the EPR to the construction of patienthood

The EPR contributes to the construction of institutional versions of the patient and may make it more challenging for professionals to retain a perspective on the unique individual. One nurse said that the structure can make it difficult to "*take a step back*", and went on to explain that she has had a few patients return year on year for their asthma checks and has questioned whether they are actually asthmatic at all. She referred to a danger that once they have "*acquired*" a diagnosis, they "*just keep coming back*". Whilst the asthma clinic may seem to be a reasonable setting in which to review a patient whose diagnosis of asthma is provisional or unclear, the template which is used routinely in this setting does not handle such ambiguity and there is scope for unhelpful and potentially incorrect labelling of patients. A revealing example is shown in Box 7.

**Box 7. Constructing patienthood in the asthma clinic**

Sam was a lively toddler, aged 2, who came with his mother. He ran excitedly around the clinic room investigating every corner. His mum seemed exasperated and said she was not getting far with his treatment, a plastic "spacer" device to which the "pumps" were attached. The boy's dad and grandparents were asthmatic, but Sam only saw his dad occasionally at weekends these days.

The nurse explained that the diagnosis of asthma cannot be certain in a 2 year old. Things might be clearer by the time he was about four. His mum was obviously relieved to know that it was not a definite thing. She was very anxious about the situation and said she was worried that her ex-partner wouldn't know how to look after her son when he goes to visit. She went on to ask "There's nothing I could have done to stop him getting it, is there?" The nurse explained it was not her fault and did what she could to be reassuring. She explained what the different inhalers do and told his mother about two Olympic athletes who have asthma suggesting he need not necessarily be restricted by it. The nurse kept her eye on the child and paid little attention to the computer, and this was in contrast to earlier consultations that day.

After about ten minutes the nurse turned to the computer and pointed towards it saying that she was going to make some notes. She completed the template line by line and there was no talking for several minutes. Sam ran towards the door and started rattling the door handle, but his mum said firmly "NO…you've got to wait for the lady to finish her typing".

The nurse handed over a prescription and they left.

I looked at the EPR afterwards – a collection of Read coded entries with some limited free text alongside:

*Never smoked tobacco*

> *Inhaler technique moderate*
>
> *Inhaler technique shown (needs to commence low dose ICS. I will monitor) [12]*
>
> *Symptoms occur at night (7/7)*
>
> *Asthma limiting activities*
>
> *Asthma management plan*
>
> *Asthma compliance satisfactory (needs ICS)*
>
> *Asthma daytime symptoms (consistent cough)*
>
> *Asthma medication review*
>
> *Asthma monitoring check done*
>
> *Follow up asthma assessment (date)*

Putting aside the absurdity that a two year old has a Read code for "Never smoked tobacco" in their medical record, this is a very clear example of the disparity between the individual narrative that was built in the clinic and the "minimum data set" (May et al 2006) in the institutional account. It also shows how the ambiguity about the asthma diagnosis is wiped out (and not even alluded to) in the record; numerous asthma Read codes are entered. Whilst this is sure to result in regular invitations to the clinic, the institutional 'truth' is a dubious representation of the reality it seeks to record. I was particularly struck by the contrast between the mother's relief that the diagnosis was not certain and the 'certainty' which was nevertheless constructed in the institutional account.

In a different clinic a nurse opened the consultation by announcing loudly "cardiac check" as she turned to the computer to read out the result of a cholesterol result (which was high). The patient responded by saying "*I haven't really got cardiac – I haven't got anything wrong with my arteries. It's microvascular angina or (syndrome) X or whatever. I've never had a heart*

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[12] ICS is shorthand for 'inhaled corticosteroid' which is a drug used to prevent asthma symptoms

*attack*". In this example the nurse was not easily able to offer any explanation, replying with "*You're obviously on the register because of the medication you're on*" and went on to complete the template and enter a date for her next routine review without addressing the conundrum that a patient who believed she had nothing wrong with her heart was here – at the surgery's request – in a clinic set up for people with heart disease. The nurse's explanation is one which constructs and defines the patient, not in terms of a clear diagnosis or disease process but in terms of a constellation of particular medications against a background of repeated attendances at a clinic which (it would appear) is neither "obvious" (to the patient) nor tailored to her specific care concerns. It is easy to see how her identity as a 'cardiac patient' may gather momentum through such repeated attendances. This is an example of the 'production' of consultations and the production of patienthood by an EPR initiated routine of recall. Whilst my research method does not allow me to quantify this production of consultations, my observations suggest that consultations can and do arise out of routines involving the EPR which may not otherwise arise.

The previous example in Box 7 showed how the ambiguity around Sam's asthma diagnosis was wiped out in the institutional account. Ambiguity is a frequent feature of patients' talk within consultations and is an aspect of the consultation which the template does not support well. Indeed the binary nature of the questions (i.e. 'Yes' or 'No' responses) which feature in many of the template fields serve to erase ambiguity all together. In Table 10 I show an example of a very transitory expression of ambiguity which the nurse does not explore.

**Table 10. A transient moment of ambiguity in the asthma clinic**

| | | Spoken word | Bodily conduct | EPR screen |
|---|---|---|---|---|
| 16.54 | N | Are you coughing at night | N looking at screen, posture to screen<br>P looking at N | Displays field "night symptoms" |
| | | (0.6) | N turns head sideways to P | |
| 16.56 | P | °Not really no°= | N return gaze to screen | |
| | N | =°no O:Kay°<br>(( C  C )) [2.0] | N types | Enters 'N', enter (resulting in blank field) |
| 16.59 | P | Just in <u>in</u> the morning terrib-<br><u>terrible</u> (.) trouble with this: with the phlegm on my chest | N typing throughout, gazing at keyboard | Displays field 'drug compliance'<br>Options:<br> A satisfactory<br>B unsatisfactory<br>Previous entry from 1 yr earlier reads "unsatisfactory".<br><br>She selects A (satisfactory) then completes a linked 'Text' field types "needs support" |

This is taken from the same consultation as the scenario described in Box 6. The nurse looks at the screen as she poses the question at 16:54. The patient delays his response until he secures the nurse's gaze and then offers a softly spoken non-committal "*°Not really no°*". The nurse enters 'N' into the template resulting in an empty field. Not only is the ambiguity is erased, but that the question was asked at all is also erased. Her "*°no Okay°*" which she latches in quickly as she returns to typing closes this line of enquiry. The patient waits for two seconds, and then introduces a contrastive statement – revisiting the problem of the morning phlegm again. Again he works hard to try to get his 'trouble' across, this time upgrading his description from "*very badly*" to "*terrible*" (which he says twice). His speech becomes dysfluent and may be related to his failure to attract the gaze of the nurse, who continues to type and is therefore not displaying 'hearership' (§5.1.3) (Erickson 2010;Erickson et al 1982c;Goodwin 2007;Ruusuvuori 2001). Her attention is divided between what Robinson has called the patient 'embodied' and the patient 'inscribed' (Robinson 1998). She has already moved on to complete a field about drug compliance – the patient's attempt to open up a narrative about his symptoms is thwarted again.

## 6.8 Bridging the rationality-reality gap in the asthma clinic

In the next scenario (Box 8) which is taken from a different asthma consultation (and involves a different nurse), we see the nurse engaging in creative social practices that go some way towards bridging the gap between the requirements of the formal template and the particularities of the consultation. She engages the patient in the act of completing the template and makes the bureaucratic requirements (and the template itself) deliberately visible. Both parties are still beholden to a wider system but the consultation is more collaborative as a result of this nurse's creative approach to incorporating the template.

**Box 8. Scenario from asthma consultation**

The patient is a 24 year old man with asthma who is attending a routine asthma check which was prompted by his recent request for a prescription for an inhaler (his annual check was overdue).

At the beginning of the consultation the nurse asks him if it is OK to call him by his first name (Mark). For the first seven minutes she is oriented towards him over the corner of the desk, as they discuss his inhaler use. She occasionally jots notes on a paper placed between nurse and patient on the desk. Then she measures his height and asks him to blow into the peak flow meter. The first interaction with the EPR occurs 10 minutes into the consultation.

The EPR screen is positioned such that the patient can read it if he turns his head.

The beginning of the consultation (Table 11) opens with the nurse inviting the patient to tell her about his inhaler use.

**Table 11. Nurse invites patient to explain his use of inhalers**

| Time | | Words spoken | Bodily conduct / EPR screen |
|---|---|---|---|
| 00.57 | N | ..uh <u>SO</u>: | N writing |
| | | (0.6) | |
| | | [ <u>tell</u> me | |
| | | [C | Remains oriented to P as makes one keystroke to display prescriptions |
| | | (0.3) | |
| | | <u>what</u> inhalers do you u:se (.) an:d <u>when</u> do you use them. | N rotates her chair, pulling it back away from desk & re-orientating so that posture and gaze are towards P. She gestures towards his inhalers on the desk with her L hand on "what inhalers" |
| | | (0.4) | N draws chair closer to P, still oriented towards him |
| 1:02 | P | U:::hm | |
| | | (1.8) | P rubs his nose |
| | | Well say like if I get >sort of< out of breath | P puts his hand on inhaler, looking at N |
| | | (0.4) | |
| 1:07 | N | Uh uh | N nods |
| | P | then I'll take the brown one. | P points to brown inhaler on desk and looks at it |
| 1:09 | N | Uh uh | N nods, looking at P |
| | | (1.2) | Mutual gaze |
| 1:10 | P | but uhm | P looks down at inhalers |
| | | (2.7) | P <-> N. P shrugs his shoulders |
| 1:14 | P | He [he | P smiles, and slight laugh as looks at N |
| | N | [he he he | N joins P in smiling and a slight laugh. N shrugs her shoulders |
| 1:15 | P | I mean sometimes I'll use the blue one. | P lifts blue inhaler just off desk, looking at N |
| | | (0.4) | |
| 1:17 | N | Right | N nods |

The nurse uses several strategies to elicit a narrative at the outset. Firstly, the use of the open invitation "*tell me (0.3) what inhalers do you use(.) an:d when do you use them.*" The word "*tell*" invites a story, and she moves her chair back away from her desk (and the EPR and her notes) so that she demonstrates a posture of readiness to listen. The patient is hesitant and there are some long pauses in his telling, but she refrains from filling these with anything other than tokens which display attentiveness. She mirrors the patient's laugh and shrug of the shoulders from 1:10 to 1:15 in a way which is effective in encouraging him to tell some more.

Following this sequence she discovers that he last used his blue inhaler three weeks ago. She asks him (at 1:37): "*Why (.) what made you think "oh I need to have my blue inhaler?*"" shifting into direct speech and ventriloquising the patient. The patient explains that he had woken up, and couldn't sleep because he was short of breath and felt "*>sort of< tight breath*". He had to use his inhaler several times and could not get back to sleep because of it. His inhaler had not

worked very well. She jots some notes on her paper, describing what she is noting down as she does so, then she summarises the story that he has just told and he confirms it. She establishes that there is some confusion about when he should be using each of his two inhalers and explains how they work, pointing to a picture of the respiratory tract to help "*because I think if you know how the drug works on your body it makes sense how to use them*." At 7:29 she says she would like to check his height and his peak flow rate (PEFR) and checks he is familiar with using the PEFR meter.

After he does the PEFR (he is standing up now) she joins him saying "*let's have a look*" and they cluster around it, each holding one end of the PEFR meter. She says that it wasn't very good and that he can do better, which makes him laugh. She demonstrates how to do it. After his second attempt they again cluster round it and she says "*tha::t was a bit bette::r (0.2) LOOK four hundred a::nd eighty*." They laugh together and again she says she thinks he can do better. After his fourth attempt she says "*Excellent. Well done. What we got? There we go. LOOK five hundred and thirty that time.*"

The nurse and patient are fully involved in this activity, in Goffman's sense of being both cognitively and affectively engaged (Goffman 1966b). The nurse's talk is inclusive (*let's, we, what we got, there we go*) and her bodily conduct encourages a joint engagement in reading of the PEFR meter. Having created a collaborative environment, she turns to the EPR for the first time almost ten minutes into the consultation, shown in the transcript in Table 12.

**Table 12. Nurse documents the patient's peak flow results in the template**

| Time | N/P | Words | Bodily conduct | Screen |
|---|---|---|---|---|
| 10.37 | N | Let's pop it in the screen and see what we've got. | N pulls her chair in to the desk, gazing at screen. P ->EPR | Consultation screen |
| 10.39 | N | [A::dd<br>[C<br>(C )<br>[Templates<br>[C<br>( C )<br>[Respiratory<br>[C<br>( C )<br>[Asthma<br>[C<br>( C ) | N types keystrokes with her R hand holding PEFR meter in her L hand.<br>P looks at screen throughout | Consultation screen. Entry 2 months earlier by receptionist – *Asthma check due.*<br>Navigates to "templates"<br>List of templates presented<br><br>Selects R – respiratory templates<br><br><br>There are 4 respiratory templates from which she selects A asthma |
| 10.43 | N | So<br>Monitoring check [DONE<br>　　　　　　　[C<br><br>[Now<br>[C<br>your height was a hundred and seventy one point fi::::::ve<br><br>.hhh look you've grown a centimetre | N looks down at piece of paper to L of her desk then types in his height into template<br><br>N gazes at screen and points to the screen sweeping finger across to show him the previous height on the template | First line in template "monitoring done" – she adds Y (yes). Hits return so today's date is entered. Then skips a line called "except report"<br>Field: O/E height, |
| 10.49 | P | Have I<br>HE HE (laughs)<br>[C C]<br>(0.8)<br><br>[Doesn't show it<br>[C | [return] | Field: O/E weight, last recorded entry 16m ago |
| | N | he he<br>(0.2) | | Field: smoking status (7 options). Last recorded entry "Never" 30m ago |
| (Transcript not shown)… | | | | |
| 11.11 | N | O:kay<br>↑SO:: | N looks down at paper on her desk, pointing at it with R hand | Field: Peak Flow Rate |
| | | (1.0) | | |
| 11.14 | N | Five thirty was your best wasn't it | N->EPR; P ->EPR | |
| | N | (( C C C C )) (3.7) | N -> keyboard as types.<br>P->EPR | Enters 530, return displays today's date. EPR calculates predicted PEFR as 600 |
| 11.19 | N | So: your predicted is 600 >so it's a little bit< under but that's not too bad | N and P looking at screen | |
| 11.24 | N | ↑was five thirty your best? | N -> EPR; P-> EPR | |
| | | (1.8) | N reaches for PEFR meter and looks at gauge. P - > N | |
| 11.27 | P | [°was it five eighty?°] | N tightens cap on PEFR, P looking at N | |
| | N | [Just do it once more for me | | |
| 11.29 | N | DID YOU::? | N passes PEFR to P who stands up as receives it | |

Again the nurse uses inclusive language as she orients towards the screen, inviting the patient to look. Between 10:39 and 10:43 she makes a deliberate show of navigating towards the asthma template. She enters his height, points at the screen, joking *"look you've g̲r̲o̲w̲n̲ a centimetre"*. By making the template visible and socialising around it she retains control over the progress of the consultation and legitimises her need to attend to some institutional work. Her activity of completing the review and completing the template are interwoven, and by involving the patient in the recording activity she effectively minimises the 'distance' between the patient embodied and the patient inscribed (Robinson 1998). Just as her interactional work early in the consultation served to build up a collaborative approach, so the use of the template becomes collaborative, at least to some degree.

She invites further collaboration in making the EPR entry at 11:11 onwards. The patient does not initially respond although he remains engaged as he watches the screen. The EPR automatically calculates his "predicted PEFR" which is displayed for both to see. The nurse evaluates the measurement as a "*little bit under...but not t̲o̲o̲ bad*", minimising any sense of trouble. But the mismatch between his 'actual' and his 'predicted' PEFR prompts the nurse to reformulate her question to one which is more demanding of an answer ("*was five thirty your best?*") When he suggests it may have been higher she suggests a recheck. This confirms the measurement, but the act of repeating it displays a collaborative approach. Neither nurse nor patient's account is taken as 'truth' – a remeasurement settles the matter.

We rejoin this consultation when the nurse reaches a set of prompts about asthma symptoms, one of which is "Disturbs sleep (Y/N)". Her task is to try to establish whether or not the patient's asthma is disturbing his sleep. I have not reproduced the 'EPR screen' column in this transcript but it shows the cursor highlighting the field "Disturbs sleep" and there are two options: A – disturbing sleep; B – not disturbing. The transcript is reproduced in Table 13.

**Table 13. Nurse tries to establish whether the patient's asthma is disturbing his sleep**

| Time | | Words | Bodily conduct |
|---|---|---|---|
| 12:07 | N | And <u>do</u>:: you <br> (0.2) <br> uhm I <u>know</u> recently the other n- n:ight you said you <u>woke</u> up during the night | N <-->P <br><br> N points to paper on her desk |
| | P | =mm= | P <-> N; P nods head |
| 12:12 | N | = with:: breathlessness | P <-> N |
| | | (0.4) | |
| 12:14 | N | Is that something that occurs <u>regularly</u>. | |
| | | (1.0) | |
| 12:17 | P | Uhm <br> (0.2) <br> its occurred a coup- uh bout a couple of times but not >sort of< = | P shifts around in chair, looks ahead. N looking at P. <br><br> P returns gaze to N |
| 12:20 | N | = a couple of times in the past <u>how</u> long | P <-->N |
| | | (1.8) | P <-> N |
| | P | °how long° <br><br> what how long ago:: | P <-> N <br><br> N leans back in chair, maintaining gaze with P |
| 12:25 | N | YEH (.) <br> you say a couple of times what <br><br> >a couple of times< in the last <u>ye</u>::ar <br><br><br> >a couple of times< in the last <u>mo</u>::nth? | N puts both hands parallel in between N and P <br><br> N makes emphatic arm movements, shifting parallel hands to her far left, and downward marking on "year" <br><br> N – similar arm movement, with downward marking on "month" but just left of centre, maintaining gaze on P |
| | | (0.2) | N puts hands together centrally |
| 12:30 | P | °>A couple of times< in the last year° | P <-> N |
| 12:31 | N | A couple of times in the last year so that's <u>fine.</u> so its not (.) <u>regularly</u>. | N nods and turns head to face EPR, body part way between two. P looks at keyboard. N keeps L arm on arm of her chair so partially oriented towards P |
| 12:35 | P | no= | P shakes head |
| | N | =(( C)) <br> °°occurring°° | N types keystroke <br> P shakes head, sits forward and turns to look at EPR |

As we know the nurse has already elicited a detailed narrative about a recent episode of sleep disturbance following which the patient requested inhalers, hence prompting this review. She might easily have completed the template by selecting "Y" (disturbs sleep) but she wants to establish whether this is something that occurs *regularly*. She revisits the story but this time it unfolds differently.

Her first utterance at 12:07 is restarted with a repair. To continue with a question (e.g. Do you have sleep disturbance? or Do you wake at night?) would suggest failure to listen earlier in the consultation, so she re-contextualises the template and his earlier story and re-presents them. The question is met with a long pause and the patient shifts around on his chair before offering a hesitant

reply, which the nurse interrupts in order to bring some clearer definition to the notion of 'regularity'. A misunderstanding occurs at 12:20 when the patient does not follow what the nurse means by "how long". She suggests two possible timeframes, using elaborate hand gestures to enhance the explanation. Although not restricted to two options, this packaging favours the selection of one or other of the options presented – and he chooses the first. The nurse responds "*A couple of times in the last year so that's <u>fine</u>. so it's not (.) <u>regularly</u>.*"

As she turns to the EPR to enter her response 'B' (i.e. Not disturbing sleep), the patient agrees with her, and the topic is closed. Drawing on Goffman's 'production format' (§5.1.3), we may consider who is the speaker of the patient's words "°>*A couple of times< in the last year*°" at 12:30? The patient animates them, but the nurse is the author. The patient repeats them word for word. He commits to them but it is difficult to be confident that they represent the patient's position (or that he could be considered the *principal* of these words). The nurse – prompted by the template – squeezes the narrative into a binary construct, enacting a scale jump which reframes his recent particular experience (of waking up recently because of his asthma, and being unable to sleep despite using his inhaler several times) as a more generalised *institutional* account. What began as a rich narrative at the opening of the consultation is shaped into a single response – "Not disturbing sleep".

## 6.9  The contribution of the EPR to a new professional habitus

Bourdieu uses the term "habitus" to describe a durable set of dispositions which incline people to act and react in certain ways – generating practices and perceptions, works and appreciations which reflect the social conditions within which they are acquired, and which (as the term suggests) become 'habitual' or embodied patterns of behaviour, and yet are not the product of obedience to rules (Bourdieu 1977;Bourdieu 1990). Practices are conceptualised as a product of the relationship between the habitus and the particular social context (or 'field') within which individuals act. Or as Maton says, habitus "*focuses on our ways of acting, feeling, thinking and being*" (page 52) (Maton 2008).

The opportunity for nurses to develop new areas of expertise in the care of patients with chronic disease is frequently described in terms of the expansion of nursing roles, empowerment, or as one policy document puts it "*Liberating the Talents*" (Department of Health 2002b). As the disease areas covered by QOF have increased, so has the variety of nurse-led disease-specific consultations on offer. Increasingly primary care nurses are coming to be defined by which chronic diseases they specialise in. In one of the two research sites photographs of the nurses were displayed in the waiting room with a list of their specific expertise areas alongside, identified by disease category (e.g. "Asthma, COPD, Diabetes").[13] The implicit message to patients is that when a chronic disease befalls them, their regular ongoing care is primarily the concern of particular nurses, who will selectively refer them on to the GP; the GP takes on a new identity as 'trouble-shooter' or 'consultant' (Charles-Jones, Latimer, & May 2003) to be called on when specific (more complex) problems arise. One practice newsletter read: "*Our practice nurses receive special training to monitor people with chronic diseases and to carry out many procedures independent of doctors.*" This 'monitoring' role sounds very different to the 'care' that we traditionally associate with nurses looking after the chronic sick, but again constructs chronic disease as 'nursing work'.

In one practice, healthcare assistants were conducting CHD and hypertension reviews. Healthcare assistants, whilst able to gather some of the relevant information needed to *inform* chronic disease management and gather QOF points (e.g. blood pressure, details of smoking) are not clinically qualified. This movement or 'redistribution' of chronic disease management to the least qualified (and least costly) member of the healthcare team has been previously described (Charles-Jones et al 2003;Checkland et al 2007). Not only does it reduce the opportunities available to patients to discuss the pros and cons of particular approaches to treatment but it changes the notion of 'management' towards one of managing data rather than patients (Checkland et al 2007).

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[13] COPD = Chronic obstructive pulmonary disease

It is at least partly *because* of the integration of EPRs in recent years, that the number of chronic diseases incorporated within the remit of nurse-led 'chronic disease management' (and indeed the QOF) has expanded. Unfortunately the application of the template to this process does not appear to constitute a 'complex' response to a 'complex' problem in the sense envisaged by Nolte et al. (Nolte et al 2008). Nor does it sit comfortably alongside the rhetoric of 'nurse empowerment' as suggested in the policy documents (Department of Health 2002b). Templates designed to help nurses organise their work *do* however change the nature of the demands they face and bring new complexities. There are new demands for discrete categories and standard codes (which are difficult to tease out and negotiate), new responsibilities to gather data (required for QOF) and new demands to re-contextualise the 'particular' into more 'general' terms within the interpersonal interaction. Nurses must grapple with different 'framings' of the patient, and 'fit' complicated personal stories into institutional boxes as they attempt to weave a relatively bureaucratic process into a personal encounter (Checkland et al 2007;Roberts and Campbell 2005).

Although almost all of the nursing consultations I observed involved the completion of templates, templates were rarely spoken about but were taken for granted as a normative aspect of practice. The little that was said was broadly positive. One nurse, in her observation that most of the fields in the template have "*QOF points attached*" said that this had encouraged them to "*get to grips with the management of microalbuminuria in diabetes and to take a more aggressive stance towards blood pressure control*" – an orientation to care which echoes the "monitoring" conveyed in the newsletter. Several nurses remarked on how they had come to rely on the templates and that it would be easy to forget things if the template was not there.

On the other hand, one nurse said that she found she tended to "*lose her train of thought*" if she relied too heavily on the template and found herself jotting down notes on paper to add to the EPR at a later stage. Interactions do not follow the rationalist logic of the template; nurses either submit to the logics of the template or need to find creative ways of working with it (as in §6.8) or round it (see below). Some specific difficulties were voiced – one nurse

commented that there is always a risk that some important things do not get documented "*because there is nowhere in the template to put it.*" Another said that "*you sometimes become so absorbed in the template that you can miss what is right in front of you in the patient.*"

It would seem that the template contributes to a redefinition of what we may understand to be 'professional vision' (Goodwin 1994), by encouraging new ways of looking, categorising and sense-making. However, this redefinition not only involves increasing the intensity of the 'institutional' gaze in some areas (e.g. close attention to the QOF areas in general) but may involve a clouding of 'vision' in other areas which less easily lend themselves to representation in a template.

One nurse who described herself as a "*paper person*" and yet also used the words "*template driven*" to describe her work said that she had found it impossible to combine "*getting through it all*" with what she regarded as a patient-centred approach, and had negotiated with the doctors that her diabetes appointments were 30 minutes long instead of 15 minutes long "*otherwise I would have just been completing the boxes with no time for the patient*". She highlights a perceived gap between the task of being "for" the patient and the demands of the template. This nurse expressed particular concerns about looking at the computer during the consultation and went to great lengths to minimise this, seizing brief opportunities as patients were removing socks or tying shoelaces, for example. I noticed how she often placed her left hand on the patient's arm as she rotated her chair to look at the screen, keeping it there as she typed with her right hand – an awkward posture, but one which allowed her to maintain a physical connection to the patient as she attended to the EPR. She always went into surgery thirty minutes before her clinic was due to start, to prepare a page for each of her patients in a spiral bound notebook. She meticulously studied the EPR of each patient she was due to see, and copied from it the blood results and any other information that she thought she may need to refer to in the consultation. What also became apparent to me was that she 'knew' the template, and would frequently anticipate the next field in the

template before displaying it on the screen, weaving it into the consultation whilst keeping it relatively 'invisible' to patients.

I realised that this nurse had internalised the template – working *with it* in a semiotic sense, but marginalising it from her embodied activity in the interaction. Her performed identity was as a 'paper person' who preferred to be "for" the patient in this new template-oriented 'field' of practice, but the template was indeed central to her practice (she was "template driven"). She was 'driven' in the sense that she ensured that she fulfilled her role of completing the template as demanded by the institution, but also 'driven' to find creative ways of working around it. It had become part of a new professional habitus, which helped to define her normative behaviours and expectations. She took the burden of managing the individual / institutional tension, but this came at an opportunity cost to herself in terms of personal time, and a financial cost to her employer (since her consultations were now taking twice as long).

In one practice the responsibility for maintaining and developing templates rested with an IT manager, who spoke proudly of the templates that were in use and saw the use of templates as a fundamental characteristic of good quality care. He told me that a local private company who had recently taken over the management of an 'underperforming' practice in another part of the county was employing one of his GPs to help improve practice systems. He explained that *"they were very impressed with our templating"* and the GP had duly provided copies of all the templates to the other practice. The integration of templates (and a new word "*templating*") was presented not only as a *feature* of good practice, but as potentially constitutive of good practice in an organisation which was otherwise failing – a transferable 'good'.

In the context of the chronic disease clinic, working with templates has become embedded in practice and taken for granted. As Maton says, we cannot 'see' habitus but we can see the effects on practices and beliefs (Maton 2008). The template brings new areas of practice, new definitions of nursing and GP work, new conceptualisations of practice and new appreciations of what constitutes

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good practice. In this sense it seems reasonable to suggest that it contributes to a new professional habitus.

## 6.10 Summary and discussion

In this chapter I have focused on one particular aspect of the EPR – the template – in one particular context of use, the management of chronic disease. I have provided evidence of the profound ways in which the incorporation of the EPR is changing care practices, drawing particular attention to the tension between different framings of the patient and the requirement on nurses to maintain a dual orientation to both individual patient and institutional imperatives.

These changes to care practices are evident at the macro-level of the organisation of the clinic, and reach right into the moment-by-moment detail of the micro-practices, even down to the small gestures and the detailed nuance of the talk. Returning to Goffman's definition of involvement (§5.1.1) my analysis begins to provide some insight into the way in which "*sustaining… cognitive and affective engrossment*" (Goffman 1966b) is becoming distributed between people and technologies, between the local 'here and now' of patient experience and the distal 'there and then' of institutional imperatives. I will take up this theme in more detail in the next chapter (§7) in which I 'zoom in' to a greater extent on the detail of clinician-patient interactions.

At no point in my field work did I encounter any suggestion that the care of chronic diseases might be done otherwise. Arguably the EPR – and the template in particular – have become completely taken-for-granted and part of the prevailing ideology of 'good' care of patients with chronic disease. The template sustains and contributes to hegemonic standards of chronic disease management, realised through consensus in the day-to-day practices of the clinic. Douglas, in her book "*How Institutions Think*" states that we build institutions by "*squeezing each other's ideas into a common shape so that we can prove rightness by sheer numbers of independent assent*" (page 91) (Douglas 1986). Many of these consultations have characteristics of bureaucratic instit-

utional encounters or 'regimented' practices (Blommaert 2005b;Blommaert et al 2005).

Nurses vary in their approaches to incorporating the template, and individual nurses display different strategies both within and across consultations according to the local contingencies which arise. This is not surprising. However, within and across this variation there are what Erickson describes as "*subtexts, or unstated agendas, running as cross-currents together with the main flow of activity*" (page 101) (Erickson 2004). The template provides a thread which is continuous across the chronic disease clinic and also continuous in the trajectory of a particular patient's attendances at the clinic. It is what we might call the 'information continuity' (Haggerty et al 2003). However I hope that I have succeeded in demonstrating that the template and what it represents are both more and less than 'information'. On the one hand, the information is an impoverished 'squeezed in' (Douglas 1986) record of the encounter or the patient's experience. On the other, we see that the template is actively shaping and changing the way that disease is defined and care is delivered, that it constructs patienthood and professional habitus and that it contributes to a bureaucratisation of care. Arguably, taken together one may conclude that the template is changing the very nature of what it means to 'care' in the contemporary chronic disease clinic.

I came to recognise certain practices as being exemplary in their creativity at minimising the distance between different framings of the patient or – to use Berg's term – bridging the 'fatal paradox' (Berg 2004a). Examples include the nurse introduced in Box 8 who collaborated with her patient around the template; the nurse described in §6.9 who simultaneously internalised the template and yet excluded it.  However, that these examples stand out as creative serves only to draw attention to what Blommaert calls "*creativity within constraints*" (page 107) (Blommaert 2005a). It is a local form of creativity which is situated in what he calls "*the borderline zone of existing hegemonies…it becomes creative because it is measurable against normative hegemonic standards, because it creates understandable contrasts to such standards*" (page 106). Such creativity is important to the involvement of the patient and to constituting the

ongoing clinician-patient relationship. However this creativity does not extend beyond the 'here and now' any more readily than the patient's narrative. In the institutional account which the template supports, 'care' (and 'good care') starts to look very similar across all chronic disease consultations, regardless of the details of the interaction and the professional practices involved, and regardless of the extent to which the patient is 'involved' (Goffman 1966b).

Paradoxically then, the incorporation of the template which is designed to ensure that certain standards of 'quality' care (i.e. those identified in the QOF) are fostered not only contributes to the bureaucratisation of care processes but may serve to marginalise the importance of (and actually make more difficult) those aspects of 'quality' practice which it does not readily facilitate or make visible. These include – but are not limited to – the extent of the patient's opportunity to construct their narrative, the extent to which the clinician is fully 'involved' with the patient in the interaction, and the extent to which the clinician acts as witness to their suffering.

In §7 I will focus in more depth on the ways in which the EPR contributes to shaping the details of the clinician-patient interaction. In particular I will develop the notion of the tension that may ensue between the immediacy ('here and now') of the professional interaction and the institutional demands of the EPR.

# 7 The EPR and the voice of authority within and beyond the consultation

*Because every therapy is based on an interplay between patient and doctor, it cannot be really understood if one restricts one's observations either to the one or to the other: the therapy happens not in the patient nor in the doctor but between the two of them. If this is acceptable it follows that what has to be observed and recorded is the interdependence or interaction between patients and doctor*

(page 2) (Balint 1973).

## 7.1 Introduction

In the previous chapter I suggested that the EPR introduces a new 'interactional regime' into the consultation, and drew on the use of the electronic template in chronic disease management to illustrate this. I also highlighted the tension between 'individual' and 'institutional' framings of the patient which are negotiated in working with the EPR. The notion of interactional regime incorporates an orientation towards inequality in the distribution of resources or power, and the production of subjectivities – for example the tendency of the EPR to effect a shift towards institutional versions of patienthood and a new professional habitus for nurses which is more clearly defined by disease areas, more task-focused and aligns with new institutionally-defined notions of 'quality'.

The electronic template is only one aspect of the EPR. In many consultations which I observed (especially those involving doctors), structured templates were used more opportunistically and in more limited ways – occasional entries of data such as blood pressure readings, for example. In part this reflects a redistribution of medical work (Charles-Jones et al 2003) with the delegation of chronic disease reviews (for which the structured template is deemed ideally suited) to nursing staff. A greater proportion of doctor consultations involve patients who have either undifferentiated problems or well defined problems whose management falls outside the scope of the 'routine' chronic disease review.

In this chapter, I will extend my analysis of the EPR beyond the structured template. This is not to suggest that other aspects of the EPR are

'unstructured'. For example, the consultation screen (Figure 7) is broadly organised around Weed's problem oriented medical record (POMR) (Weed 1968), the medication screen (Figure 8) is organised into 'current' and 'repeat' medications and the medical record 'summary screen' is organised around 'active' and 'past' problems (which are then further differentiated into 'significant' and 'minor' problems). However, beyond the electronic template the use of the EPR is – ostensibly – more flexible. Clinicians can choose whether to enter defined Read codes or free text (i.e. text which is not Read coded), and they are not so constrained by the linear presentation of template fields.
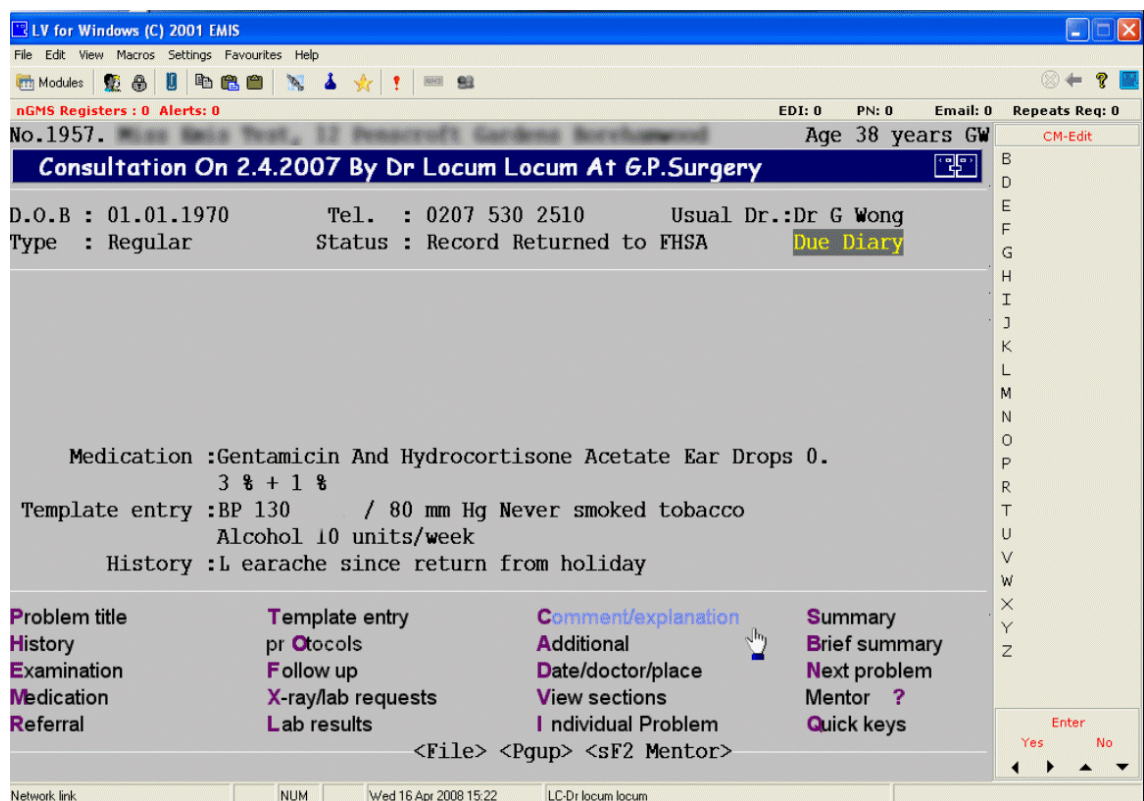


**Figure 7. Consultation screen**
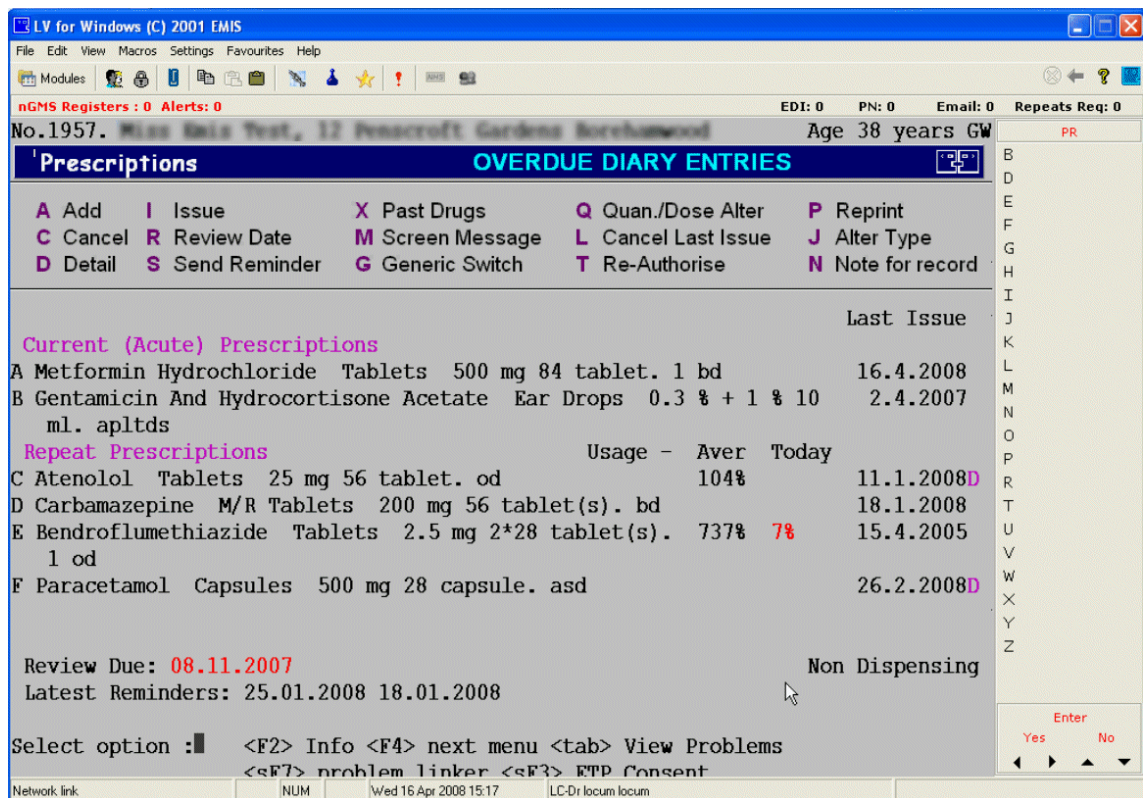
**Figure 8. Medication screen**

I introduce a new concept – that of 'authority' – as a lens through which to study the role of the EPR in the consultation. Authority is a subject which has long interested social theorists, medical sociologists and analysts of the clinical consultation. Early interest in (and criticism of) the authoritarian 'paternalistic' nature of the medical consultation (Mishler 1984) has shifted more recently towards an emphasis on concepts such as patient-centredness, patient 'choice' and 'empowerment', shared decision-making, patient participation, and the 'expert patient' (Collins, Drew, Watt, & Entwistle 2005;Edwards and Elwyn 2009;Entwistle, Watt, Gilhooly, Bugge, Haites, & Walker 2004;Stewart 2001;Towle, Godolphin, Grams, & LaMarre 2006). Arguably these descriptors do not represent well-defined social phenomena or theoretically coherent constructs so much as they signify a shift in the underpinning ideology of healthcare away from one which assumes the unquestioned authority of the clinician towards one which espouses greater involvement of the patient. This ideology informs the rhetoric of policy documents (Department of Health 2005a;Department of Health 2005b;Department of Health 2006;Department of

Health 2010a) and the curricula of medical school and post-graduate GP training alike (GMC 2009;RCGP 2007).

The increasing use of the EPR in primary care – both in terms of geographical coverage (now near universal in the UK) and technical capability (i.e. what the EPR is used *for)* – has evolved in parallel with these developments and has largely been informed by a range of different (and potentially competing) ideologies. These include the evidence based medicine (EBM) movement, clinical governance (and more recently information governance), a general move towards valuing standardisation and the elimination of what are perceived to be undesirable variations in care.

In this chapter I will 'zoom in' on the micro-detail of the clinical interaction and present my analysis of a selection of short case studies to illustrate how and to what extent the EPR shapes the construction, display and circulation of authority in this context. I adopt a perspective – informed by Giddens' theory of structuration (Giddens 1984) – that authority is both *brought to* the interaction (through institutionalised practices) and also *brought about* in the interaction (in its moment-by-moment unfolding between social actors). Authority is observable and recognisable both at the macro level of a social system and also in its micro detail and I will show how studying the EPR-in-use opens up new perspectives on authority. In what may seem fleeting moments of negotiation and contestation – which are worked through as the consultation unfolds – are recurrent opportunities for the building and shaping of authority, and (ultimately) the potential for social change. The EPR is integral to these social practices in the contemporary consultation.

Previous studies on the computer in the consultation (§3.4) have focused mainly on the coordination of computer use and interpersonal interaction (Greatbatch et al 1995;Greatbatch et al 1993;Heath et al 2003;Ruusuvuori 2001) but have largely overlooked the way in which the EPR simultaneously introduces new ways of 'knowing' in the consultation and new ways of distributing knowledge. By opening up the 'black box' of the computer and incorporating the *textual* attributes of the EPR alongside its *material* attributes

within my analysis, I identify the consultation as a site of struggle between multiple, stratified (or 'ordered') and competing voices which incorporate multiple ways of knowing. I show how the EPR increases the complexity of interactional work for both clinician and patient, and present evidence of a "dilemma of attention" as clinicians seek to deal with the immediacy ('here and now') of the professional interaction and the institutional demands ('there and then') of the EPR – particularly its sharper focus on institutional evidence and accountability (Swinglehurst et al 2011). These new demands on the consultation, which are not *caused* by the EPR but which are facilitated and encouraged by the EPR cast further light on our understanding of the EPR as constituting new forms of regimentation of the interaction, and new concept-ualisations of patienthood and professional habitus.

## 7.2  A patient's perspective

I will begin this chapter with a quote from a patient representative who had been invited to speak at a conference on "*The Impact of Electronic Records on the Therapeutic Relationship*" in November 2010 at the Tavistock and Portman NHS Trust, London. He said:

> *When I go to see my doctor these days I feel like a voyeur on a relationship which appears to be primarily between two great intelligent systems. There is the doctor on the one hand – with all his university background and knowledge - and the computer on the other – with all its information and connections. It is just like two big systems engaging with each other – two great institutions. It is very physical. I feel like an intruder. The consultation used to be about a relationship between patient and doctor, but now the primary relationship is between the computer and the doctor. If there's something on a computer, people will believe it. It increases the presence of authority. The old paper notes were a blank sheet, an open invitation. The computer is something very different.*

<div align="right">NHS patient representative, reproduced with permission</div>

The speaker had telephoned me to ask if I would be willing to take part in a role play at the conference and had been given my contact details by the conference organiser, with the advice that I was a PhD student who may be able to help him out. As he spoke these words to me over the telephone he was unaware of my research area and interests. I scribbled his words into my notebook primarily

so that I could capture what it was that he wished to convey to his audience through the role play. I realised later that it was worthy of much more attention, that he was describing a profound shift in his experience of being a patient, and that his quote resonated with much of what I had been experiencing in my research.

The doctor to whom he refers is his GP; he draws on both his recent experience and his previous experience of how things "*used to be*". I was struck by his focus on the "*two great institutions*" his comment that it was very "*physical*" and his notion of the patient as the *intruder*, or *voyeur*. Previous research has identified the role of the *computer* as an intruder on the consultation (Pearce 2007;Sullivan 1995) but I realised he was expressing a much more significant concern, that he himself – the *patient* – may be the intruder. He conveys a sense that his personal relationship with the doctor is subsumed beneath what he calls the "*primary*" relationship between doctor and computer. He identifies the doctor as *system* and *institution* and draws particular attention to the authority constituted by the relationship between doctor and computer. The notes are no longer "*a blank sheet, an open invitation*" but "*something very different*".

Whilst I acknowledge that this is but one perspective, and that this individual had been selected by conference organisers to express his particular view, it provides a helpful starting point for this chapter, echoing some of the ideas captured in §6 about the production of patienthood, changing professional habitus and the new interactional regime. It also sets the scene for a more detailed discussion on the constitution of authority in the consultation.

## 7.3 Authority and asymmetry in the consultation

It is beyond the scope of this thesis to deconstruct the notion of authority and its complex relationship to issues of power, trust and accountability (including how these relationships may have changed historically) in detail. My rationale for choosing 'authority' as a useful lens to bring to this data was informed partly by a sense that the question of who (or what) is the rightful authority in the consultation seems to underpin the ideological shifts that I mentioned in §7.1, partly because it was identified as a particular concern by for the patient

representative whom I have just quoted (§7.2), but most importantly because I had already been struck by the frequency with which I had identified authority as somehow *at issue* when the EPR was in use within the consultation. This authority has a *material* dimension (the computer is difficult to ignore as a powerful and significant presence in the interaction) but in repeated rounds of analysis I realised that it was in the *EPR as text* that the EPR seemed most insistent and (at times) intrusive to the interaction.

Authority, derived from the Latin word *auctoritas,* is defined in the Oxford Online Dictionary (Anon 2011) as:

1. *the power or right to give orders, make decisions, and enforce obedience.*
2. *(often authorities) a person (or organization) having political or administrative power and control.*
3. *the power to influence others, especially  because of one's commanding manner or one's recognized knowledge about something.*

Each of these definitions include the word 'power', and a conceptualisation of power which comes about in an asymmetrical relationship between those 'in authority' and those who are subjects of authority. In addition there is a claim of legitimacy – the legitimate or sanctioned right to exercise power, either by virtue of specialised knowledge or because of one's political or social position. One may consider authority primarily as a resource – a social structure – which one may draw on to make possible and justify certain actions. Authority may also be regarded as something which is constructed in an ongoing way, not only through the actions of those 'in authority' but also through the actions of those over whom authority is exercised.

Many previous researchers have focused on the consultation as an *asymmetrical* encounter (by comparison with a symmetrical model which is assumed to exist within informal conversation) and highlight the ways in which both parties orient to it as such, highlighting the dominance of the bio-medical model of disease over the patient's understanding, or what Mishler famously referred to as the "*voice of medicine*" and its role in suppressing the "*voice of*

*the lifeworld*" (Mishler 1984). Early research on the consultation tended to assume this asymmetry resulted from pre-existing institutional 'structures' *brought to* the consultation and leading to the subordination of the patient's perspective to the professional perspective (Freidson 1970). More recent research has illuminated ways in which this asymmetry is not necessarily a *given* or a product of the clinician's abstract power but is *brought about* within the consultation and achieved interactionally to a greater or lesser extent (Hak 1994;Heritage 2005;Maynard 1991;ten Have 1991). To quote Maynard:

> *... the asymmetry of discourse in medical settings may have an institutional mooring, but it also has an interactional bedrock, and the latter needs sociological appreciation as much as the former*
>
> (page 486) (Maynard 1991).

The metaphors which Maynard uses here suggest that he perceives the 'interactional' (the "*bedrock")* as at least as important in explaining asymmetry as the institutional elements (the *"mooring")*. This is not surprising from a scholar of conversation analysis, since analysts of this tradition regard only such context as comes to be *articulated* in the immediate interaction as relevant context for analysis ('proximate' context as distinct from 'distal' context) (Schegloff 1992). Ten Have, also working in this tradition, describes the asymmetry in the medical consultation primarily in terms of *topic* (e.g. the patient's health rather than the doctor's health is the topic of the interaction) and *tasks* (e.g. making a diagnosis and recommending treatment is the doctor's task not the patient's) (ten Have 1991). By contrast, Hak draws attention to the asymmetrical distribution of specialised professional knowledge, particularly the unequal distribution of the parties' access to each other's objectives. He argues that although patient and clinician may co-identify in terms of conversational identities (e.g. conversational turns), patients are not able to recognise the clinician's objectives and strategy completely (Hak 1994). Arguably doctors cannot recognise patients' objectives or strategies *completely* either.

Peräkylä, focusing specifically on diagnostic statements, argues that authority is by no means absolute or externally granted, but that doctors treat themselves as *accountable* for the evidential basis of diagnosis (Peräkylä 1998). He draws

here on Garfinkel's notion of accountability, meaning "*observable and report-able...available to members as situated practices of looking-and-telling*" (page 1)(Garfinkel 1967c). The delivery of diagnosis thus comprises a delicate balance between authority and accountability; doctors do not claim uncondi-tional authority (Peräkylä 1998). In a further analysis he found that patients were more likely to talk about the diagnosis (and assume a measure of agency in relation to their diagnosis) in situations where doctors provided the evidential basis for the diagnosis (Peräkylä 2002). However, in this talk patients avoided addressing the very evidence that doctors had presented, instead drawing on the realm of their own experience – thus maintaining an orientation to the doctor's ultimate expertise and authority in the area of medical reasoning (Peräkylä 2002). This is an interesting example of how authority comes to be constructed within the consultation and how this can be illuminated by a close examination of the micro-detail of the interaction.

In my own work I accept that there are certain aspects of institutional and professional structure which bring authority to the consultation. These structures include a clinician's mandatory qualifications and professional registration as well as gate keeping privileges – referral to secondary care or 'signing-off' a sick person from work – for example. However I also maintain that it is in the micro-detail of the interaction that authority is accomplished and repeatedly reproduced (or not) – contributing to the ongoing constitution of (or undermining of) authority as a macro-institutional structure. There exists a recursive relationship between the macro and the micro, and it is in the productive relationship between them that authority can over time be upheld, undermined, shaped or indeed changed in a more fundamental way – so that what is recognised as legitimate authority may become redefined through a process of social change over time. Perhaps unsurprisingly, 'authority' was not a word which was in regular use amongst the clinicians I observed in my ethnographic observation. Authority, I came to realise, is 'talked in' rather than 'talked about'.

## 7.4 Focusing on the role of the EPR in authority building

My interest in this chapter is to show how the inclusion of the EPR in the consultation contributes in significant and important ways to 'doing authority' and that this is indeed a complex interactional achievement. Pearce, who has made an important contribution to this work, argues that the computer demonstrates agency and vies for recognition as a source of authority in its own right, with flexible sets of alliances evolving among the three players in the triadic consultation (Pearce 2007). He concludes that authority can shift between the actants in "ever revolving circles", that both doctors and patients defer to the computer as a source of authority, and that this authority becomes manifest through both words and body language (Pearce 2007). He regards the computer as having sufficient impact to be considered an "equal partner" in the consultation suggesting its influence is equal to that of the human actants (page 260-261) (Pearce 2007).

Although Pearce refers briefly to the computer as the "delegated agent of others" (page 170), his strict focus on the consultation as a triad between clinician, patient and computer limits the scope to an observational account of the 'here and now', pays relatively little attention to the wider social and institutional context, and glosses over the significance of the "others" to which he briefly alludes (Pearce 2007). As I explained in §4, my work extends previous research on the computer in the consultation because I incorporate both the *material* properties of the EPR (which most researchers would refer to as the computer) and the *textual* properties of the EPR (accessible through screen capture) in my analysis. This makes possible new and more informed understandings and assertions about what is actually going on in the consultation, and aligns with a general trend in sociology and sociolinguistic research to look beyond specific settings to incorporate distributed and networked knowledge (Cicourel 1990;Heath and Luff 2000b;Heller 2007;Lave and Wenger 1991).

As Sarangi and Roberts point out:

> *…not only is the encounter a socially complex production as interactants take account of each other's co-presence and contributions, but as Geertz would say, there are 'webs of significance' which reach out beyond it*
>
> (page 2) (Geertz 1973;Sarangi and Roberts 1999).

Thrift refers to "*the ghosts of networked others*", that continually inform individual action (Thrift 1996), a metaphor which seems particularly apt when considering the networked EPR. Quoting Thrift, Stones argues for "*a much greater sense of the force of what is absent on the constitution and presencing of actions and interactions*" (page 93) (Stones 2005).

The consultation is even more complex than the doctor-patient-computer triad which Pearce and others (Scott et al 1996) (see §3.5) have assumed, as the interests of more parties come to be represented and mediated through the EPR and the EPR becomes a more insistent presence. In my analysis I have found it helpful to conceptualise the computer not as an 'agent' or 'partner' in its own right (Pearce 2007), but as a collection of multiple significant and consequential voices – stratified, ordered and meaningful within a specific social, professional and institutional context.

In opening up the "black box" of the computer we discover the voice of significant others who may be 'absent' from the consulting room, but brought into the consultation through the 'presence' of the EPR. These 'others' may be colleagues (e.g. the GP across the corridor) or higher level, more abstract entities (for example the institutional 'other' which may be articulated through the voice of the QOF).  The voices may be animated by the clinician and hence find a place in the interpersonal interaction, or may instead remain 'subordinate' and essentially 'inaudible' to the patient.  The orientation towards the EPR as a collection of voices shifts the enquiry away from a sole focus on which party in the consultation is the source of authority, or where authority resides at any point in time and allows us to extend our analysis to the *practice* of authority building – the *doing* of authority within and beyond the consultation and its relationship with wider social and institutional contexts.

## 7.5 The conceptual framework

I introduced my conceptual framework for analysis of interaction data in §5 and will summarise this very briefly here. I have been particularly influenced by the work of Goffman and Bakhtin whose ideas around 'footing' (§5.1.4) including the elaboration of the 'speaker' (§5.1.3) and 'voice' (§5.2.2) respectively, have been a useful point of departure for analysis of the consultation. Goffman highlights the importance of "involvement" in interaction, in which participants sustain "cognitive and affective engrossment" (Goffman 1966b). This concept resonates with (and would seem fundamental to) Bakhtin's account of the dialogic nature of communication (§5.2.1) and his idea that meaning only becomes possible at the point at which speaker and listener connect, or where the speaker's 'expressive intention' meets with the listener's 'responsive understanding' (Bakhtin 1981b;Bakhtin 1986). Bakhtin draws attention to the way in which language originates in the social struggle and ambiguities of everyday life, highlights the evaluative nature (or "evaluative accent") of talk and describes the tension between centripetal forces of centralization (responsible for inflexible authoritative discourse) and centrifugal forces of language diversification (Bakhtin 1981a).

The EPR brings a new dimension to the interaction – one which complicates our understanding of the 'participation framework', brings new 'voices' and new chains of representation, and contributes to new social contexts (or 'fields') within which interaction is built and sustained. It also introduces new social struggles and new evaluative accents into the consulting room. My method of data collection (§4.6.5) has given me unique access to the text of the EPR-in-use, allowing me to trace voices and identify the appropriation and reproduction of voices in the EPR and in the interaction.

An additional theoretical concept which is particularly helpful in the study of authority is that of "orders of indexicality" – multi-layered, stratified or 'ordered' meanings which incorporate the local and translocal, the momentary and lasting (Blommaert 2005c;Blommaert 2006). Blommaert says that:

*Orders of indexicality allow us to focus on the level of the concrete, empirically observable, deployment of semiotic means, while at the same time seeing such micro-processes and semiotic features as immediately connected to a wider sociocultural, political, and historical space. By orienting to orders of indexicality, language users (systemically) reproduce these norms, and situate them in relation to other norms*

(page 74) (Blommaert 2005c).

This builds on Bakhtin's observation that speakers orient not only towards an immediate "actively responding understanding" but also to a "superaddressee" (Bakhtin 1986). For example, in a clinical consultation a doctor may say: "*We are not prescribing antibiotics for sore throat very often these days. There is little evidence that they offer benefit.*" Not only is the doctor addressing his comments to the patient, but he is also orienting to taken-for-granted professional norms in his use of the collective term "we" (which defines him as a member of a particular professional group) and to an unquestioned, ill-defined 'scientific truth' (the 'evidence' as is referred to in the current context of evidence based medicine) to which s/he has access but the patient may not. This orientation could be seen to reproduce the 'norm' that the doctor makes decisions, that sound decisions are based on well established scientific facts known best by the medical profession, and that the doctor's professional and more authoritative position makes it acceptable to pronounce on this 'evidence' without making any reference to what it actually is.

Clinicians, patients and the EPR bring to the consultation voices which orient to multiple orders of indexicality. By analysing consultations to identify shifts in footings, the display of involvement and being sensitive to what and whom is being indexed through a dialogic perspective on talk and text, we can identify some of the ways in which the EPR contributes to authority construction in the consultation and how this reflects, reproduces and re-shapes notions of patient-hood and professional habitus.

In the next section I will present short case studies. In each case I will present some brief context as orientation, a multi-modal transcript of a selected extract of interaction, and a detailed analysis. I will bring together the themes emerging from the case studies in a discussion at the end of the chapter.

## 7.6 Case Study 1: Looking to the EPR for the 'answer'

The consultation is between a female GP and a 58 year old female patient who have not met before. The GP sits with her knees under her desk, her lower body oriented towards the EPR. She consults over the corner of her desk with the patient to her right, rotating her head to the right to make eye contact. The EPR screen is rotated such that it is visible to the patient if the patient looks slightly to her right.

The transcript shown in Table 14 is taken from the opening of the consultation.

**Table 14. Transcript for Case Study 1**

| Time | DP | Words spoken /sounds | Bodily conduct | EPR Screen |
|---|---|---|---|---|
| 1.00 | P | I've uhm (1.6 ) I've been having problems with urine infections | P < - > D; D arms folded on desk | Consultation screen.<br><br>QOF alert showing in bottom R corner: Smoking Data (displays throughout consultation) |
| | | ( 0.4 ) | D  nods | |
| 1.05 | D | °°right°° | | |
| | | (0.8 ) | | |
| 1.06 | P | and uhm (0.8 ) its:: almost constant now | P < - > D | |
| | | (1.4 ) | D nods | |
| 1.12 | P | it was just >y'know< I <u>had</u> one and uhm [tak- | P gestures with hand to emphasise "had" ; P <-> D | |
| 1.16 | D |     [have you had them when you've brought in:: (. )  [samples<br>      [(C )<br>and they've been <u>positive</u> | D turns head quickly to EPR and draws circle with R hand as brings it towards computer keyboard; P - > D | Navigates to "Values and Results" screen |
| | | (0.6) | | |
| 1.19 | P | yes | P - > D | Values and Results – no urine results shown (back to 4 months earlier) |
| | | (0.6) | | |
| 1.20 | D | right<br>(0.4)<br>so when was the last<br>(0.4) | D - > EPR, R hand poised on keyboard | |
| 1.23 | P | uhm | | |
| | | (2.0) | D keystrokes | D navigates down list of results |
| 1.25 | P | the last sample<br>I<br>can't remember | D glances towards P briefly<br>D - > EPR | |
| 1.27 | | (2.0) | D and P - > EPR | D navigates down list of results. Results of urine culture >10$^5$ / ml of coliform dated approx 5 months earlier. No other urine results. Results shown to 3 years earlier. |

This short extract illustrates, at 1:16, a phenomenon which was very common across the data set. The clinician turns to the EPR to seek the 'answer' to a question of the patient's past (and therefore potentially recorded) medical history *before* the question has been fully formulated.

The sequence opens with the patient describing her "*problems*", using the medical category "*urine infection*" rather than a more symptom focused description. The doctor displays attentive hearership through use of minimal back channel cues ("*right*" at 1:05 and two episodes of nodding in short pauses) which encourage the patient to continue her talk. The doctor's lower body is oriented towards the EPR, but her head is turned towards the patient, and her folded arms place a barrier between herself and the EPR. Doctor and patient display mutual involvement as they look at each other while the patient explains her trouble.

At 1:16 there is a change in footing. The doctor interrupts the patient mid-sentence as she quickly turns her gaze away from the patient towards the EPR screen. This is accompanied by an elaborate circular hand gesture as she brings her right hand to the computer keyboard. She asks the question: "*have you had them when you've brought in:: (.) samples and they've been positive.*" The participation framework (§5.1.2) is disturbed in that the doctor asks the question whilst facing away from the patient and towards the EPR.

This utterance does complex interactional work. Its immediate effect is that it closes down the patient's talk before she has completed her explanation, so that the doctor takes the interactional floor (Edelsky 1981). It is rather face-threatening, in that it seeks to bring a more precise definition to the term "urine infection" – one which requires there to be positive test results from urine samples (a biomedical definition). Her emphasis on "samples" and "positive" gives the talk its evaluative accent (see §5.2.3) (a urine infection is 'proven' when there is such a result), and marks it out as professional talk; she is orienting not only to the immediate active responsive understanding but to a superaddressee – in this case biomedical science. Her swift orientation to the screen at precisely this moment – when she seeks to establish the 'facts' of the

case – not only aligns the EPR with the biomedical account (and privileges the biomedical) but also contributes to constructing this account as more likely to be authoritative than that of the patient.

The patient responds affirmatively at 1:19 but the doctor continues to navigate down the "Values and Results" screen. The patient keeps her gaze on the doctor as the doctor asks about the timing of the last sample – "*when was the last*". Given that the doctor is already focused on the institutional account in the EPR (where results might be recorded) it is perhaps not surprising that at 1:25, after a two second pause, the patient says that she "*can't remember*" when the last sample was done. In 'not remembering' the patient joins the doctor in constructing the authority of the institutional account of the EPR. She then physically realigns herself, joining the doctor in gazing at the EPR.

In interactional terms it is not important whether the patient could or could not remember the timing of the sample. What is significant is the way in which the EPR is constructed as a more reliable source of relevant knowledge. The importance of the recursive relationship between the doctor and the EPR can be seen at work here, in that the EPR is shaping the doctor's actions and the doctor is in turn shaping the EPR. Doctor and patient do not have equal access to the EPR, and although we see the EPR is constructed as authoritative, this is within an institutional context where the *doctor* decides how to manage the interaction between herself, the patient and the EPR. It is in the recursive relationship between the doctor and the EPR (and how the patient responds to this) that institutional authority and asymmetry is constituted. This resonates with the quote in §7.2: "*It is just like two big systems engaging with each other – two great institutions".* Goffman's involvement is difficult to maintain in an environment where attending to the EPR incorporates physical realignments which threaten to disrupt the engagement framework (Goodwin 1981).

## 7.7 Case Study 2: Maintaining engagement through interactional work

This short case study is presented as a contrast to Case Study 1 and shows a doctor constructing authority very differently (Table 15).

The patient has only recently registered with the surgery and has met the GP for the first time. She has been having daily headaches for over two years. The patient spends approximately 1.5 minutes presenting a narrative about her experience of headaches, with the GP asking for one brief point of clarification. The GP rarely looks at the EPR throughout the 12.5 minutes consultation, and consults across the corner of his desk. Although the patient can see the EPR by turning to her left, it is unlikely that she can read the details.

**Table 15. Transcript for Case Study 2**

| Time | N/P | Words spoken /sounds | Bodily conduct | EPR Screen |
|------|-----|----------------------|----------------|------------|
| 3.47 | D | Now you tell me you're taking amitriptyline how long have you been taking amitriptyline for | D < - > P; D's hands together on his lap | Consultation screen |
| | | ( 0.4) | | |
| 3.50 | P | U::hm<br>(2.5)<br>°U::::hm°<br>°my <u>old</u> doctor at my other surgery put me on <u>them</u> °<br>( 0.8)<br><u>prob</u>ably at the beginning of the year<br>( 0.8)<br>I don't <u>know</u> | D < - > P<br><br>P looks up; D - > P<br><br><br><br><br>D nods ->P, P still looking up | |
| 4.00 | D | [can I just <u>check</u> on here | D turns and leans towards EPR, bringing R hand forward onto keyboard. Inaudible keystroke on "here" | Navigate to prescription screen "no prescriptions for [name]" |
| 4.00 | P | [its gone so quickly this year | | |
| 4.02 | D | just see what you're taking | D pulls chair towards desk / EPR, brings L elbow onto desk and supports his chin; P also puts L elbow on desk, rotates towards screen | Navigates to "past drugs"<br><br>Two prescriptions for amitriptyline 10 mg tablets (3 months and 5 months earlier) |
| | | (0.4 ) | Keystroke. D - > EPR; P - > EPR, both resting head in hand | |

In the first utterance at 3:47 the GP picks up on the narrative that the patient has just shared, referring specifically back to it (*"you tell me…"*) which displays a 'hearing' of the story. His body and gaze are towards the patient, his hands together on his lap. In contrast to the previous example, the doctor gives the patient time to construct her answer to his question of past medical history. She hesitates as she begins and there are three long pauses, one of which is 2.5 seconds, but the doctor continues to demonstrate involvement as the patient formulates her response. Only when she finally concedes "*I don't <u>know</u>*" does

the doctor *then* turn towards the EPR, at the same time saying "*can I just <u>check</u> on here just see what you're taking*". This rhetorical question performs politeness, conveying a sense that it would be inappropriate to turn away from the patient (and risk dissolving the engagement framework) (Goodwin 1981) without some justification. The insertion (twice) of the word "just" performs some mitigation work; it minimises the significance of the "checking" and "seeing", normalises these actions and renders them relatively unimportant (Lee 1987). As he says this he orients his chair and body towards the EPR, and puts his left elbow onto the desk, resting his chin in his hand, a move which is immediately mirrored by the patient who also turns to look in the direction of the EPR, elbow to desk.

The way this GP interacts with the patient and the EPR in this sequence contrasts not only with that in Case Study 1 (§7.6), but with many other examples in the data set. In particular the patient is constructed as more likely (than the EPR) to offer an authoritative account of her own past medical history. The GP does this through a combination of building on the patient's narrative (rather than interrupting it), allowing the patient plenty of time to respond, and using politeness / mitigating strategies at the point of incorporating the EPR.

## 7.8 Case Study 3: New authorities – the "dilemma of attention"

In this extract we revisit the consultation introduced in Case Study 1 (§7.6). After this sequence, the consultation continues with relatively little use of the EPR as the patient goes on to explain her symptoms and the doctor offers suggestions as to what the underlying problem may be. The doctor conducts an examination of the patient and suggests referral to a gynaecologist. We re-join the consultation near its end. The doctor has finished dealing with the patient's problem and goes on to attend to an institutional requirement (Table 16).

**Table 16. Transcript for Case Study 3**

| Time | D P | Words spoken /sounds | Bodily conduct | EPR Screen |
|---|---|---|---|---|
| 14.32 | D | now my computer's | D - > EPR. D points to screen | Medications screen. |
| | | asked me whether you smoke | D - > EPR, L hand to mouth; P –> EPR; | QOF alert showing in bottom R corner: QOF Recent Smoking Data (displays throughout consultation) |
| | | (1.2 ) | D - > P; P - > EPR | |
| 14.35 | P | uhm | P - > EPR | |
| | | (1.0) | | |
| 14.36 | P | yes (.) no | P - > EPR; D - > P | |
| | | (1.0 ) | P - > D | |
| 14.38 | D | he what's [that mean | D - > EPR, laughing | |
| | P | [I've had <u>one</u> in the last three days | D < -> P | |
| 14.41 | D | right (.) so (.) very occasionally | D < - > P | |
| 14.43 | P | yeah (0.2) I'm (.)  I'm very much a s:ocial smoker nowadays= | | |
| 14.46 | D | = so with- in a (0.2)  in a week uhm how many do you get through °d'you think° | | |
| 14.49 | P | well last week I think I had three | | |
| 14.52 | D | right (0.4 ) right | | |
| | | (5.0 ) | D turns - > EPR; P - > D. At 14.57 D turns to  P again | |
| Transcript not shown – doctor establishes that patient smoked three cigarettes last week and suggests it would be better for patient's general health if she could "ignore them", since although it is not doing "horrendous damage" it is still keeping the "receptors flapping" | | | | |
| 15.29 | D | so (0.2 ) y'know <u>obviously</u> | D - > EPR; P - > D | |
| | | °<as your <u>doctor</u> > I have to advise you that you shouldn't° | D < - > P; D using highly stylised voice | |
| | | ( 1.6) | D nods, smiling | |

At 14:32 the doctor re-orients to the screen and points to it as she announces "*now my computer's asked me whether you smoke*". The patient looks towards the EPR and hesitates in her response. A small 'alert box' displays in the bottom right of the screen throughout the consultation, regarding an outstanding QOF item (Recent Smoking Data).[14] Outstanding items may or may not be immediately relevant to the current consultation but are a constant reminder of particular institutional objectives, whether or not a clinician chooses to act on them. The EPR automatically runs daily background searches of the patient database (in a module called "Population Manager"), seeking specific coded items and comparing it with QOF standards. The institutional voice of QOF is one which the EPR delivers into the 'here and now'.

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[14] The QOF incentive scheme requires a record of smoking status for patients aged over 15.

Although the doctor is the animator of this utterance at 14:32, she projects the EPR itself as the 'author' (§5.1.3) inasmuch as she suggests it is the EPR which has 'asked' the question, attributing agency to the computer. This agency is not a fixed property of the EPR but something which may come into being (or not) in the interaction; it is partial and highly contingent on the immediate social context of the EPR's use (Swinglehurst et al 2011). By attributing agency to the EPR in this way, the doctor introduces 'attributional distance' (Clayman 1992) between herself and the delicate question being asked (with all its morally evaluative overtones). It constructs a situation in which both doctor and patient are responding to a wider (and, from the patient's perspective at least) unidentified authority.

The doctor is orienting to multiple orders of indexicality. She constructs her utterance with sensitivity to the immediate interpersonal interaction whilst also orienting to the imperative to construct an institutional account, one which defines the patient as a 'smoker' or a 'non-smoker' and quantifies this is terms of numbers of cigarettes smoked. The EPR is contributing to the construction of authority at several levels. It influences the doctor's behaviour (encouraging if not actually enforcing obedience); it defines what important 'knowledge' about patients is; it reproduces particular definitions of quality in practice – gathering data about smoking for QOF is an example. In pre-EPR days the medical record was (among other things) a source of information about what was known about the patient – the patient inscribed (Robinson 1998). Here it is not what is known but what is *not known (and _ought_ to be known)* which comes to the foreground.

The doctor goes on at 15:29 to say "*so* (0.2) *y'know _obviously_ °< as your _doctor_ > I have to advise you that you shouldn't°*. This is an interesting utterance in which the doctor displays an obvious change in footing (§5.1.4). Firstly, she slows down her speech markedly as she says "< *as your doctor* >" deliberately constructing herself as the principal of the utterance and active in her professional capacity, an identity which anticipates and legitimates the upcoming giving of advice (and establishes the patient as appropriate recipient of such advice). She then uses a quiet and highly stylised voice as she seeks to influence the

patient: "*I have to advise you that you shouldn't.*" This is an example of what Sarangi and Roberts call 'hybrid discourse', in that it is legitimate 'professional' advice on the one hand, and yet it also orients to a higher 'institutional' order. Professional discourse is that which professionals routinely engage in during their practice, whereas institutional discourse concerns the way in which professionals *account* for their talk (Roberts, Sarangi, Southgate, Wakeford, & Wass 2000;Sarangi et al 1999). The institutional dimension is conveyed by including the words "*I have to*" – which suggests an institutional imperative – and partly through the stylisation. This is active in creating distance between the professional identity which she has established so far in the consultation, and a 'new' identity as she incorporates institutional business. Goffman refers to this as the "embedding" function of talk, meaning the way in which animators can convey words which are not their own or which reflect a different aspect of oneself (Goffman 1981a).

Framing the consultation as an opportunity for incorporating opportunistic health promotion activity (such as smoking advice) has long been identified in consultation models (Stott and Davis 1979) but the use of the EPR as a prompt to this kind of talk, engenders a shift from professional interaction towards an emphasis on institutional evidence and accountability. We might refer to this as the "deontic" voice of the EPR – a silent voice which is active in shaping the consultation by marking out what *should* be done.

The EPR presents a "dilemma of attention" to the clinician who must make ongoing judgements about whether, when and how to attend to its institutional voice, balancing the immediacy ('here and now') of the interaction with the more institutional ('there and then') demands of the EPR. In this example the doctor makes the role of the EPR explicit, but in doing so she has to engage in *additional* interaction work, and then has to be creative in managing the transitions between her professional self and her role as institutional representative, as she negotiates a new professional habitus.

## 7.9 Case Study 4: Synergy, surveillance 'sharing' and 'should-ness' – the struggle for symmetry in the contemporary consultation

This 63 year old female patient has been taking rimonabant (a weight reducing drug)[15] and is attending a follow up consultation. The female doctor and patient know each other well. The patient has explained that she ran out of her rimonabant tablets and had to borrow some from a friend. When the patient steps off the weighing scales and returns to her chair, she sits so that she can see the EPR screen easily. The doctor types her weight into the EPR and confirms she has lost weight, and then turns to issuing a prescription. The transcript is shown in Table 17.

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[15] Rimonabant was available at the time of data collection but was officially withdrawn in 2009, because of concerns about psychiatric side effects, including depression and suicide.

**Table 17. Transcript for Case Study 4**

| Time | D/P | Spoken word | Bodily conduct | EPR Screen |
|---|---|---|---|---|
| 06.44 | D | ((typing)) (8) | D typing, facing EPR. P has elbow leaning on corner of desk, head in hand and watches EPR. | D selects rimonabant from "past drugs", defines it as a "repeat" medication. Screen displays *"Is this correct? Y/N"*. D selects Y and is given option to print |
| 06:52 | D | Do you need <u>other</u> things | D -> EPR | |
| | | (0.4) | | |
| 06.53 | P | I just need aspirin (0.5) and ramipril (0.4) ramipril | P turns head away from D / screen and looks down. D-> EPR | Repeat Prescription screen; 3 items incl. atorvastatin (28 days supply issued 49 days ago on 26th July – usage is shown in red at 50%). GP keys "I" for "Issue"; Screen shows: *Select items (ABC etc) to issue* |
| | | (1.5) | P turns head back -> EPR. D types keystroke | |
| 06.58 | P | °°I don't take (many [others)°° | | |
| 06.59 | D | [Do you] <u>not</u> need atorvastatin | D points L hand to screen then rotates screen towards P and points at it again, her R hand still poised on keyboard | |
| | | (1.5) | P -> EPR | |
| 07.02 | P | Uu[uh | | |
| 07.03 | D | [It's the twenty sixth of July:: | D moves finger to point to date (of issue) 26th July on screen. P -> EPR. | |
| | | (0.5) | | |
| 07.05 | P | I <u>prob</u>ably just need <u>one</u> yeah I'm not with<u>out</u> but yeah probably cos I've got a box [(inaudible) | P and D -> EPR <br><br> P -> D. D keystroke | Enters "C" – atorvastatin is highlighted on screen |
| 07.09 | D | [>I mean< in a month:: (1.0) (( C )) within a <u>month</u> (.) you should need them= | P - > D; D looking at screen <br><br> D keystroke | 2nd Repeat Prescription screen; 4 items including aspirin (56 days supply issued 49 days ago on 26th July) |
| 07.11 | P | =yeah I <u>will</u> = | P - > D; D - > EPR | |
| 07.12 | D | =yeah aspirin I m- aspirin was the same <u>date</u>. | D and P - > EPR D keystroke | Enters "F" - aspirin is highlighted on screen. |
| | | (0.4) | | |

In contrast to many other sequences, the doctor and patient are both oriented towards the screen (which Pearce calls the "face" of the EPR) (Pearce 2007). At 06:59 the doctor actively encourages the patient to look at it, incorporating the EPR as part of the 'shared' interactional context. Although there is greater sharing of the EPR, the EPR remains something over which the doctor retains control, and the doctor assumes responsibility for the way in which the EPR mediates and structures the talk. The doctor's involvement lies primarily in her

interaction with the EPR, and the patient becomes exposed very directly to the powerful way in which the EPR facilitates surveillance of her medicine use.

At 06:44 the doctor enters the details of a prescription for rimonabant. Just at the point at which she is given the option to print it, she asks "*Do you need other things*" organising the topic and timing of her question around the constraints of working with the EPR (it is quicker to issue several items at once than to issue them individually). As the patient is facing the screen it is obvious that the doctor is 'doing prescribing' and that "*other things*" refers to additional prescription items. The patient responds without hesitation saying "*I just need aspirin and ramipril*". After a pause the patient continues to talk but the doctor interrupts with "*do you not need atorvastatin*" simultaneously pointing to the screen and rotating it further towards the patient, while taking the speaking floor. This is a change in footing as the doctor shifts stance from asking a question to posing a challenge. It is an awkward, confrontational and face-threatening moment for the patient. It is met by a long pause and the patient hesitates as she starts to speak, only to be interrupted again. The doctor points to the screen again adding: "*It's the twenty sixth of July::*" (pointing to the 'last issue' date as supporting evidence). This accountability work acts as a further challenge to the patient's account.

The patient is challenged to engage with a representation of herself in the EPR (Robinson's patient inscribed) (Robinson 1998) and this representation is at odds with that which she has just presented. The doctor's move is simultaneously *involving* and *distancing* of the patient. Inviting the patient to look at the EPR involves the patient in a world which often remains hidden, but it also sets the agenda for this moment, and involves an interruption and a closing down of the patient's talk. The material arrangements (with the doctor looking and pointing towards the EPR) are effective in creating some distance between the doctor and her avowal. At the same time the doctor is drawing rhetorically on the documentary evidence which she points towards, building an argument that the patient *should* have run out of tablets (or at least be *about to run out).* We may regard authority as being both *distributed* between doctor and EPR, and also *strengthened* through the interaction between doctor and EPR. It

is not the doctor or the EPR *per se* but their synergistic interaction which construct authority. We can see parallels with Case Study 1(§7.6) and the quote in §7.2 regarding the importance of the recursivity of the relationship between the doctor and the EPR in the constitution of interactional asymmetry and authority. This case study also illustrates again the silent 'deontic voice' of the EPR (as in Case Study 3 §7.8) as it contributes to definitions of what '*should*' or '*ought to be*' the case.

The patient responds and repositions herself. It is in this repositioning that we see the effect of this authority on the progression of the interaction. In other words, it is partly in the patient's response that we see the ongoing display of authority at work. She responds: "*I probably just need one yeah I'm not without but yeah probably cos I've got a box.*" Here she performs some face-saving work in which she ensures that her original statement (that she just needs aspirin and ramipril) remains true ("*I'm not without*"; "*I've got a box*"), whilst also doing the work of agreeing – at least partially – with what the doctor (and the EPR) has communicated. She hedges her statement with the use of the word "*probably*" on two occasions. Still without the full commitment of the patient, the doctor interrupts again to do some further accountability work, this time reframing her utterance, such that she projects the 'need' for medication into the future "*I mean in a month:: (0.2) within a month (.) you should need them*". Here she justifies her previous assertions whilst also responding to the fact that the patient has said that she has a supply of tablets already. On this occasion the patient agrees without hesitation: "*yeah I will*".

At 06:53, the 'needs' defined by the patient appear to be different 'needs' to those defined by the EPR. We can trace the interactional work that the word "need" does through this sequence. The doctor moves from "*Do you need*" (question) to "*Do you not need*" (confrontation) to "*You should need*" (value judgement), drawing rhetorically on the EPR as documentary evidence along the way. This evidence spans time from past to future (from the "*26th of July*" to "*within a month*") and sharing it makes visible to the patient the ease with which the EPR provides a view beyond the 'here and now'. The patient moves from "*I just need*" (statement) to "*I probably just need*" (tentative statement / partial

agreement) to "*I will [need]*" (confirmatory statement / full agreement) and from an orientation focused on the present to an orientation which incorporates the future. As the authority of the doctor and EPR grow, so the patient's position becomes increasingly subject to it. These are two sides of the same inter-actional coin, as we see how authority is enacted. The use of the word 'need' is a good illustration of what Bakhtin meant when he said: "*The word in language is always half someone else's. It becomes one's own only when the speaker populates it with their own intentions, their own accent, when they appropriate the word, adapting it to their own semantic and expressive intention…Each word tastes of the context and contexts in which it has lived its socially charged life.*" (page 293-4) (Bakhtin 1981a). Through interaction, authority is constructed and the patient's 'need' becomes re-defined. Whether or not the patient is taking the atorvastatin as prescribed is glossed over and remains unaddressed.

An important consequence of this short sequence is that it not only introduces an awkward confrontational moment into the 'here and now' of the interaction, but it constitutes a clear display to the patient that this kind of surveillance of medicine usage is facilitated by the EPR and may be consequential beyond the immediate consultation. As in Case Study 3 (§7.8) we see that working through this in interaction requires a clinician to engage with and negotiate transformations through different orders of indexicality, as new authoritative voices are brought into the consultation.

## 7.10 Case Study 5: Authority and hierarchies of knowledge in the sociotechnical network

This is a follow up consultation between a male GP and a female patient. The patient has recently started treatment for newly diagnosed hypertension (high blood pressure). Six days earlier she visited the practice nurse for a cholesterol blood test. The EPR is visible to the patient, but the patient cannot see the details of the EPR screen.

The transcript which follows (Table 18) contains an important *crux*, or key moment of the consultation (Roberts, Wass, Jones, Sarangi, & Gillett 2003) – the discovery that the patient had not fasted before the blood test. The GP has

just explained that the cholesterol result is high and both GP and patient have expressed some surprise at this:

> *GP: "they turn out you've got quite ↑high cholesterol"*
> *P:   "which seems really bizarre…cos I can't think of anything that I have"*

The patient explains that she eats "*loads of fruit, loads of veg*" then the GP enquires about family history of high cholesterol or heart problems (the patient reports none).

**Table 18. Transcript for Case Study 5**

| Time | D/P | Spoken word | Bodily conduct | EPR Screen |
|---|---|---|---|---|
| 3.30 | D | uh well yo:ur l:ow density cholesterol<br><br>is is quite high um::(.) over seven so:: | D-> EPR; P -> D<br><br>D sits back in chair -> EPR | Consultation screen showing two entries dated 6 days ago:<br><br>1) (nurse): *Blood sample taken. Biochemical screening test (fasting cholesterol)*.  Text note: *will make app in a week to see Dr X* |
| 3.36 | D | ((sniff)) | D scratches nose, raises eyebrows | |
| | | (0.8) | | |
| 3.37 | D | <al:tho:ugh ju:st because> you've got high blood pressure you don't necessarily<br><br>need anything to lower the cholesterol (.)<br><br>.hh >even though you've got hypertension< | D->EPR<br><br>D turns slightly - > P<br><br>D returns gaze - > EPR | 2) (path lab): displays blood test results incl. *Cholesterol 10, Serum LDL cholesterol >7 see doc please.* |
| 3.45 | D | I think you'll probably be well advised to have something t- to lower it↑= | D frowns | QOF alert (remains throughout consultation). Shows P is on "QOF register" for hypertension and has two QOF items outstanding: "*notes summarised*" and "*recent medication review*" |
| 3.49 | P | =°°yeah°° mean as a child I couldn't take (.) milk and I still don't like milk | P - > forwards; D -> EPR | |
| 3.53 | D | no↓ | | |
| | | (1.0) | | |
| 3.54 | P | ehm (.) I can take (0.4) >sort of< hot milk in custard (0.4) but someone gave me a glass of hot milk and I would really be ill. | | |
| 4.01 | P | ha | P -> D; D - > EPR | |
| 4.02 | D | right (.) yeah | | |
| 4.03 | | so maybe there was an intolerance right from a baby<br>ha | P smiles | |
| | | (0.2) | | |
| 4.07 | D | we↑↓ll | | |
| 4.08 | P | who kno↑ws °°ha ha°° | P shakes head slightly, smiling | |
| 4.09 | D | °°ha°° | D smiles -> EPR and leans forward -> EPR, placing R hand on keys | |
| | | ((C))<br>(1) | Key stroke | Returns to today's consultation screen. "Problem Title" is automatically highlighted |

| 4.10 | D | °u:::::hm° | | |
| 4.12 | | ((typing for 4.5 seconds)) | D -> EPR, typing<br>P looking ahead | "Problem title" selected, then enters keystrokes "Framing" - EPR displays a pick list of 9 choices about cardiovascular risk (Framingham risk scores codes) |
| | | (0.5) | P - > keyboard | |
| 4.16 | P | I noticed when I was having my blood test | P -> forwards; D typing | D selects first choice, "*10 yr CHD risk (Estimate, Fram)*" |
| | | (1.0) | D -> EPR; P->forwards, raises finger in air | A box displays: "*Estimated 10 year CHD risk is 15%* |
| 4.20 | P | mm Nurse B***<br><br>was showing me (0.4) .hhh on the screen cos she was trying to work out what you wanted it said a <u>fasting</u> blood test (.)<br><br>but I didn't (.) ↑ <u>neither</u> of mine (.) were fasting blood tests | D -> EPR; P-> forwards and points with finger<br><br>P-> forwards<br>P points again on *fasting*<br><br>P shaking head; D turns to gaze at P | *The system has calculated that: Average of last 2 systolic BPs is 145*<br>*The Total/HDL cholesterol ratio is 6.10*<br>*Stopped smoking for over a year, no ECG LVH, No diabetes*<br>*Is the above information correct? (Y/N)*: |
| 4.29 | D | oh weren't they? | D < - > P | |
| | P | no | | |
| 4.31 | D | oh right↓ | | |
| | | (1) | D looks back to screen; P - > D | |
| 4.33 | D | ((cough))<br>o::kay. well we'll do it again:  (0.5) [ then] in that case<br>      [(( C))<br>[before] panicking or worrying too much about it↑<br>[(( C)) | D -> EPR; types keystroke<br><br>D sits upright, keystroke, then rotates chair away from P, reaching for something on desk | Consultation screen displays: "*Additional: Est 10 yr CHD 15%*" indicating that GP responded "Y" |

In only one complete utterance, at 4:29, when the GP says "*oh weren't they?*" are the GP and patient focusing their visual attention on each other. The GP is focused on the EPR the rest of the time. At 3:30, we see the unfolding formulation of the GP's opinion.  The screen shows that her serum cholesterol is 10, LDL cholesterol > 7 [16] and the GP has recorded a message for receptionists to convey to the patient if she phones the surgery for results ("*see doc please*"). As in Case Study 3 (§7.8) a QOF alert displays throughout this consultation as a reminder of institutional objectives, but the GP does not attend to it in this consultation.

The sequence begins with the GP stating:  "*uh well your <u>l:ow</u> density cholesterol is is quite <u>high</u> um::(.) over seven so::*". This presents him in an expert role as

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[16] LDL = Low-density lipoprotein. Cholesterol is carried around the blood stream by proteins. The combination of cholesterol and proteins are called lipoproteins. High circulating levels of LDL-cholesterol increase the risk of cardiovascular disease.

interpreter of these results. The technical terms may be unfamiliar to the patient but it is precisely the potential for unfamiliarity that contributes to building his authority, enhanced through the use of technology in establishing the 'fact' of the matter. The GP softens the impact of the message through use of the words "*quite high*" and by selection of the lowest (numerically speaking) of the two cholesterol results displayed in the EPR. The onus is on the patient to work out how something that is low could *also* be high. The GP animates these words, though we may consider authorship to be distributed, the GP and EPR being part of a sociotechnical network linked electronically to a remote laboratory site. The GPs voice and that of the EPR are interwoven.

The GP adds: "*<al:though just because> you've got high blood pressure you don't necessarily need anything to lower the cholesterol(.) .hh even >even though you've got hypertension< I think you'll probably be well advised t- to have something to lower it*". Here he is indexing a specific body of expert medical knowledge (Bakhtin's "superaddressee") – the multi-factorial nature of cardiovascular risk (Bakhtin 1986). This culminates in the statement "*you'll probably be well advised t- to have something to lower it*", in which he introduces some distance between himself and his avowal, through the use of the hedges and qualifiers ("*you don't necessarily*"; "*I think*" and "*probably*") and by introducing the passive voice ("*be well advised*"). His close visual attention to the EPR, and his frown at 3:45 construct a sense of giving the result careful consideration, of active decision making (he constructs himself as the "principal" in Goffman's terms). He stops short of giving definitive advice to take medication.

Having already described the high cholesterol as "*bizarre*" in the context that she eats "*loads of fruit, loads of veg*", the patient latches in (at 3:49) to embark on a narrative which seeks to build an alternative explanation. The GP remains oriented towards the EPR, and the ongoing lack of displayed hearership contributes to the dissolution of the engagement framework (Goodwin 1981) as the patient responds by withdrawing her gaze at 3:49 and looking forwards to tell her story. We see a mutual display of visual inattention, the patient appearing to address an 'absent other', as if they are involved in parallel

'interactions'. I have observed this arrangement of the participation framework across several consultations. It contrasts with Pearce's observation that patients tend to engage in 'screen watching' behaviour when the GP focuses on the computer (Pearce 2007;Pearce et al 2008) and is a challenge to the notion of the triadic consultation.

At 3:49 the patient makes a statement suggesting that she suspects a connection between her high cholesterol level and her dislike of milk. She goes on to use escalating and increasingly medical language as she progresses from a *dislike* of milk to being *really ill* to possible *intolerance.* I suggest this is an attempt to claim the attention of the GP (who is occupied in looking at the EPR) and is a good example of the mutually constitutive nature of what Erickson and Shultz call 'ways of speaking' and 'ways of hearing' (Erickson et al 1982b). In their work on interviews between careers counsellors and students, Erickson and Shultz found that the failure of students to provide an anticipated "listening response" led to counsellors engaging in "hyperexplanation" – either giving successive reasons or "talking down" (lowering the level of abstraction from one repetition to the next) (Erickson et al 1982b). What is interesting in this sequence is that the patient makes the GP accountable to the absence of an active listening response by 'talking up' her explanation, fitting her 'lay' explanation into a medical framework. Her short narrative ends definitively when the GP reorients his body, leans forward towards the EPR, intensifies his attention towards it (and away from the patient), and starts typing. The patient looks forwards again as the GP holds the floor (Edelsky 1981) with a 4.5 second period of typing in a move which asserts his authority in the interaction.

From 4:16 to 4:29, the patient offers some insight into the way in which voices travel beyond the consulting room via the EPR, establishing a chain of relationships, and new constructions of reality as the EPR is interpreted and recontextualised on each occasion of its use (Linell 1998). At 4:16, she recalls her previous appointment with the nurse: "*I noticed when I was having my blood test (1.0) mm Nurse Brenda was showing me (0.4) .hhh on the screen cos she was trying to work out what you wanted it said a fasting blood test (.) but I didn't (.) neither of mine (.) were fasting blood tests".* This is a delicate matter on two

counts and she handles it with care. First, she is drawing attention to different practices between the doctor and the nurse around screen-sharing (the screen is not shared at all in the current consultation). Also, she is also raising the possibility that an error has occurred. Her packaging of this statement constructs the GP as a higher authority than the nurse – he decides how to build knowledge of the patient and the nurse tries to follow his instructions.

The patient draws the EPR into a face-saving strategy (Goffman 1955). She explains that the screen was shared because the nurse was trying to work out "*what you* [the GP] *wanted*" – thus legitimising this 'showing' (and her own 'noticing') within a framework of 'nurse responsibly carrying out GP's instructions' and saving the nurse's face. She goes on to explain that the blood test was not a fasting sample. She invokes the screen (i.e. the EPR) as the agent of the error – "*it said a fasting blood test*" – then goes on "*but I didn't (.) neither of mine were fasting blood tests*" her repair introducing further distance between herself and any responsibility for the error. By attributing agency to the EPR, she politely succeeds in framing a human error as a technical one and this contributes to saving the face of the GP (who may not have made his intentions clear to either nurse or patient). It is possible that she has chosen this precise moment to reveal the 'error' because the immediate context suggests that a decision around medication may rest on the result. The GP's last substantial contribution to the interaction was (at 3:45) *"I think you'll probably be well advised to have something t- to lower it↑"* and he has been engaged in looking at the EPR since.

From 4:12 onwards, the screen capture data show that the GP, in attending to the EPR, is dealing with a different concern which is never explicitly articulated in this interaction, but which he anticipated in his opening utterance when he said "*al:though just because you've got high blood pressure you don't necessarily need anything to lower the cholesterol*" – namely the relevance of interpreting the cholesterol result as one of numerous potential risk factors for cardiovascular disease. The GP is divided between attending to the 'here and now' of the immediate interpersonal interaction and the 'there and then' of negotiating the discourse of risk (using the EPR to calculate the patient's

Framingham risk score) a different and more institutional framing of the patient, and one which the EPR facilitates.

This example of a dilemma of attention is particularly noticeable at 4:09 when the GP leans towards the EPR rather than pursuing the patient's narrative, and again at 4:12 as he types. It is the GP who chooses to initiate the cardiovascular risk calculation; the EPR is *not* prescriptive in insisting this be done now (or indeed, at all). However, having embarked on it, the EPR then shapes the unfolding interaction; the calculation cannot be progressed (or even abandoned) without further interaction with the EPR. The apparent agency of the EPR, as it presents data to the GP and poses the GP a question (*"Estimated 10 year CHD risk is 15%. The system has calculated that: … is the above information correct?"*), is thus partly dependent on the GP's actions in initiating it. However the facility to build patient-specific knowledge about risk (without the patient's awareness) is made possible by the EPR. The importance of appreciating the EPR and the clinician as existing in a recursive relationship with each other is again apparent, as in Case Studies 1 (§7.6) and 4 (§7.9).

The EPR brings a voice into the consultation which represents the patient as one of a population, a series of numerical variables, and contributes to making sense of her cholesterol within a biomedical frame. However this 'silent' voice sits uncomfortably alongside the patient's attempts at sense-making in terms of personal dietary habits and possible milk intolerance. Without doubt the EPR transforms the generation of certain *kinds* of knowledge – risk calculation is one example. But it also encourages an orientation to a different order of index-icality. Though 'silent', it is consequential to this interaction, and works through both the material and textual attributes of the EPR. By anticipating and orienting towards this 'order' from as early as 3:37, the GP's display of attention is with the EPR. This ultimately contributes to a closing down of the patient's spoken narrative at 4:09, and to difficulty for the patient in making her concerns understood.

The sequence ends with the GP saying: "*o::kay we'll do it again: (0.5) then in that case before panicking or worrying too much about*". Speaking as an

institutional representative (*"we"*) he exercises his authority by referring only to the institutional side of the proposal; that the patient will comply is taken-for-granted. He types a keystroke to accept the cardiovascular risk estimate of 15% as a searchable coded entry, constructing an enduring and particular definition of reality. This occurs precisely as he suggests a need to repeat the test. It would involve considerable loss of face for the GP to proceed without repeating it (even though from a biomedical perspective a non-fasting sample may be adequate in a risk calculation). We see the EPR contributing to two parallel chains of representation, and the construction of two different realities. The first results from the clinician's engagement with the EPR and culminates in his documentation of the risk calculation. The second is more subtle and complex – involving GP, nurse, patient and EPR – and culminates in the doctor exercising his authority in issuing the order for a repeat test.

## 7.11 Case Study 6: Constitution of professional hierarchies and local accountabilities through the EPR

This case study is taken from an annual diabetic review between and nurse and patient who know each other as this forms part of the patient's regular care. The patient has had recent blood tests. The results have been seen by her GP, who has made an entry in the EPR two weeks earlier. The patient can see the computer screen, but cannot read the details. The nurse has just explained that she needs to review the results and turns to the EPR (Table 19).

**Table 19. Transcript for Case Study 6**

| Time | N/P | Words spoken | Bodily conduct | EPR Screen |
|---|---|---|---|---|
| 03.19 | | (4) | N looking at EPR, joined shortly after by P | Dr Y entry dated 2 weeks earlier: *"Acquired hypothyroidism (code) TSH again high, time to start thyrox B (nurse) will issue. TY"* (GP's initials) |
| 03.23 | N | thyroid function test (.) comes back (.) as:: yo:ur (.) thyroid stimulating hormone is (.) high again so you're gonna have to start taking the thyroxine again I'm afraid (0.4) | N-> EPR

N turns to look at P; P - > N | |
| 03.33 | P | °What's ↑that the thyroxine?° | P lifts L arm – between self and EPR -  to mouth and looks to N | |
| | N | the- that's your thyroid tablet | | |
| 03.37 | P | I never took a thyroid tablet (0.4) | N -> EPR; P shakes head | |
| 03.39 | N | t- ah (.) beg your pardon time to start it | N nods | |
| 03.40 | N | s:o we're gonna hav- start you on a a tablet for your thyroid. | N<->P | |
| 03.44 | P | oh cos that's high is it? | P <-> N | |
| 03.45 | N | yes::s | N -> EPR | |
| 03.46 | N | yes:s °I'm afraid so.° | P joins N in looking at EPR | |
| 03.48 | P | what will that do then that tablet I [just | P -> N | |
| 03.50 | N | [it will] bring it do↓wn make it >sort of< balance out | N turns to P and makes downward motion with her hand | |
| 03.52 | P | okay | | |
| 03.53 | N | °okay° so we're gonna get you a prescription for that [today↓ | N turns head -> P | |
| | P | [I've never had trouble bef(ore) | P shrugs shoulders; P-> N | |
| 03.57 | N | the blood tests have shown obviously that you've got [an under] | N -> EPR | |
| | P | [yeah] | | |
| 04.01 | N | active th::: hypothyro- thyroidism= | | |
| 04.03 | P | =°oh-right?° (1.0) .hhh over the years I have been checked out (0.2) for all those things and uh (.)  that seem to be= | P - > EPR

N<->P; P indicates with L hand -> EPR and N looks to screen | |
| | N | = I think possibly (0.2) (( C )) | N and P -> EPR. N remains orientated to EPR until end of this case study | *(N depresses keystroke to view the "values" screen)* |

| 04.09 | N | let's have a look | | Displays "Values and Results" screen |
|---|---|---|---|---|
| | | (4) | | Displays 3 annual T4 results The trend is downwards, all remain in "normal population range" |
| | N | (inaudible under breath) | | Displays 3 annual TSH results TSH has been above normal |
| | | (3) | | population range for 3 years. TSH was higher last year than it is now |
| 04.19 | N | °yeah its: (.) gone up (.) quite a lot° | N rubbing her chin | "*Values and Results*" |
| | | (3) | | |
| 04.24 | N | so doctor Y wants to pop you on a a thyroid tablet just a <u>low</u> dose thyroid. | P -> N P rubs chin? | |
| | P | okay. | | |
| 04.31 | N | ok↑ay | | |

The sequence begins with a pause during which the EPR is the focus of the nurse's attention. It shows the GP's entry on the consultation screen: "*Acquired hypothyroidism (code). TSH[17] again high, time to start thyrox Barbara (nurse) will issue. TY (GP's initials)*". The diagnosis was made (and Read coded) two weeks ago, the date on which the GP decided to treat her with thyroxine. This is not the first time the TSH has been high. His brief note "*Barbara will issue*" incorporates not only an explicit instruction to the nurse to print (i.e. issue) a prescription, but a more complex, unspoken requirement – to convey the result to the patient. The GP displays his authority over the nurse through this entry in the EPR. That the nurse is expected to issue a prescription is important context for interpreting what follows in the consultation. The authoritative voice of the GP (delivered by the EPR) is an important presence for the nurse in this consultation, though this remains obscure to the patient.

In the opening utterance the nurse looks at the EPR and says: "<u>*thyroid*</u> *function test (.) comes back (.) as:: yo:ur (.) thyroid (turns to P) stimulating hormone is (.)* <u>*high*</u> *again so you're gonna have to start taking the thyroxine again I'm afraid*". Her bodily conduct at the opening indicates that the result is in the EPR, and constructs the EPR as an authoritative source. She is oriented to the patient as she announces "*so you're gonna have to start taking the thyroxine*

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[17] TSH = Thyroid Stimulating Hormone, a hormone released by the pituitary gland which is important in the regulation of the level of thyroxine (another hormone) in the circulation. If the circulating level of thyroxine is low then the pituitary gland responds by releasing more TSH, which in turn stimulates the thyroid gland to produce more thyroxine.

*again I'm afraid*". This constitutes a display of authority in her interaction with the patient, whilst orienting simultaneously to the GP as a higher authority in the institutional order. The imperative tone of the GP's instruction in the EPR "*Barbara will issue*" becomes re-contextualised into a similarly imperative instruction of the nurse to the patient. By using the connector "so" she suggests that the treatment is an inevitable consequence of the result. The agent of the decision making around this (i.e. the GP) is absent from the nurse's utterance, but the authority behind the GP's voice (and conveyed by the EPR) is reproduced in interaction. In Goffman's terms she animates the words but their authorship lies primarily with the GP (§5.1.3). She recontextualises the GP's entry, emphasising the word "high" and thus giving the utterance her own evaluative accent (Bakhtin 1981a). This has important consequences later in the sequence. The imperative tone is evident again in the nurse's utterance at 03:40: "*S:o we're gonna hav- start you on a a tablet for your thyroid*".

At 03:44, the patient asks "*oh cos that's high is it?*" looking to the nurse for an answer. This positions the nurse as a potential source of authority and displays an understanding that something is "high". The nurse turns immediately towards the EPR as she confirms the abnormality ("*yes:::*"), a move which deflects attention from herself and towards the EPR as the authority. Again she distances herself from the act of decision-making which informs her advice. The patient joins her in looking at the EPR as she repeats again "*yes:s*". This mutual orientation towards the EPR not only focuses their involvement on the patient inscribed (Robinson 1998) – rather than the patient herself – as the location of the abnormality, but the patient appears to be co-opted into seeing the EPR (or the 'hidden' voice within it) as an authority.

At 03:48, the patient asks about the tablet ("*what will that __do__ then*") directing her query to the nurse in a way which once again constructs her as authoritative. It is striking that the nurse responds entirely in terms of what it will do to the hormone levels, elaborating this with a downwards hand gesture. Having introduced the problem to the patient in terms of a "high" TSH, this metaphor is carried through the whole sequence. The voice of authority in the EPR is

reformulated, but the question of the patient's personal experience (for example symptoms or drug side effects) is overlooked.

For the third time in this sequence (at 03:53), the nurse raises the topic of medication, explaining "*we're gonna get you a prescription*". On the previous two occasions (at 03:23 and 03:40) this has been met by the patient asking a question ("*what's that the thyroxine?*" / "*cos that high is it?*") but on this occasion, the patient interrupts with a change of footing, saying "*I've never had trouble bef(ore)*", as she shrugs her shoulders. This combination of words and bodily conduct does the additional work of expressing puzzlement and challenges the nurse, who responds by again turning immediately to the EPR as she says: "*the blood tests have shown obviously that you've got an under active th::: hypothyro-thyroidism*". The evaluative accent of this utterance operates at two levels. Firstly the blood tests have "shown" the problem (again there is no human agent – but she orients to the EPR as the source of knowledge) and secondly she packages the statement in such a way as to display her commitment to it ("obviously"), whilst continuing to maintain her distance from the act of diagnosis itself. She gets into difficulty in the latter part of this utterance when, at the point of actually 'telling the diagnosis' she is hesitant – the utterance contains a false start and a repair. The frame she introduced at the beginning ("TSH is high") and which has been carried through this section is suddenly problematic. After all, the diagnosis is of an underactive thyroid, not an overactive thyroid.

The patient again joins the nurse in looking towards the EPR. She then turns to the nurse and gestures deliberately with her left hand towards the EPR, incorporating it into her own performance as she says, at 04:03: "*over the years I have been checked out for all those things and that seem to be*". This is an interesting transformation of the participation framework. Since the beginning of this sequence there have been several occasions when the nurse orients to the EPR as if to an authoritative source, and one previous occasion (at 03:46) when the patient joins her in this orientation. But in general the patient has worked hard to construct the nurse as the authority in the consultation. However at this point the patient actively invokes the EPR as a supervisor of her care; she

draws on it (through her bodily conduct) as a rhetorical resource in what appears to be a challenge to the nurse's authority, in the immediate context of the nurse faltering over the 'diagnosis'. This is an example of a relatively rare occasion when the patient subtly uses the EPR in the interaction as a means of posing a challenge to established lines of authority.

The nurse responds by turning to the EPR, saying "*let's have a look*" as if the EPR may settle the matter. The use of the inclusive "let's" acknowledges the patient as a legitimate participant in the need to look (although the patient cannot see the screen detail). This signposting is effective in silencing the patient's talk as nurse and patient direct their gaze towards the EPR. For ten seconds, the patient observes from the sidelines, excluded from some sotto voce talk from the nurse as she interacts with the EPR. From an analytic perspective this is an important crux of the consultation but the significance of it remains obscure to the patient.

The nurse looks first at the T4 (thyroid hormone) results (Box 9):

**Box 9. T4 (Thyroid hormone) results**

| Date | Serum T4 level (Normal range 9 – 23) |
|------|--------------------------------------|
| 01.09.2008 | 11 |
| 06.11.2007 | 13 |
| 12.10.2006 | 15 |

These results are all within the normal population range, with a small but steady downward trend over time. She then looks at the TSH (Thyroid Stimulating Hormone) results (Box 10):

**Box 10. TSH (Thyroid Stimulating Hormone) results**

| Date | Serum TSH level (Normal range 0.25 – 5) |
|------|------------------------------------------|
| 01.09.2008 | 7.73 |
| 06.11.2007 | 10.23 |
| 12.10.2006 | 6.6 |

The TSH has been above the normal population range for the last three years. It was higher in the previous year (2007) than at the time of the present consultation (2008). There is controversy over how to manage this situation clinically,[18] but it is likely that the GP's recent decision to treat her rests on the *duration* of the TSH level (and the *downward* trend of the T4) rather than the *absolute* TSH value.

The nurse makes an announcement, rubbing her chin in a thoughtful gesture at 04:19: *"°yeah its: (.) gone up (.) quite a lot°"*. This statement is delivered in a quiet but audible voice towards the EPR. In interactional terms this has some of the characteristics of what Goffman might have referred to as "collusive byplay" (i.e. although no attempt is made by the nurse to conceal her interaction with the EPR, there is some concealment of what is being communicated by the EPR) (Goffman 1981a). That the TSH was actually higher last year is not shared.

To make sense of this, it is helpful to revisit the context of this consultation. The institutional context is one in which the GP's imperative voice speaks through the EPR to the nurse – she is expected to issue a prescription. The immediate interactional context is one in which the main theme is that the TSH is "<u>high</u> *again*". The results the nurse now sees in the EPR present her with a moral dilemma, since they do not align in a straightforward way with the treatment decision.[19] There is an immediate social pressure in the consultation to present a coherent logical story in the face of somewhat contradictory messages and she has to decide the extent to which she is 'true' to the GP, or 'true' to what she reads in the EPR's list of results. Her strategy is to stick with the story that has been so far constructed, again emphasising that the level is high – *"It's gone up quite a lot"*. In this re-contextualisation of the EPR she saves her own

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[18] The patient has a raised TSH and a normal thyroid hormone (T4). This means that the circulating level of thyroid hormone is adequate but the thyroid gland is requiring additional TSH to stimulate its production.
[19] Note that if at the outset the nurse had placed her emphasis at the beginning on "TSH <u>again</u> high" this would have set up a different frame for the interaction.

face (it is consistent); anticipates and justifies the upcoming prescription; and saves the GP's face (he has recommended this course of action) (see §5.1.5).

The sequence culminates in the nurse saying at 04:24: *"So doctor York wants to pop you on a a thyroid tablet just a <u>low</u> dose thyroid".* She transitions into a more informal register of talk here, and for the first time introduces the absent GP as the decision maker and the explicit authority. She also softens or mitigates the impact of the message by using the word "*pop*" and by adding that it is "*just a low dose*", a move which minimises the patient's problem. This is the first occasion that the nurse's mention of medication is met without question or challenge, but instead by the patient's unqualified acceptance (*"okay"*). We can see that both participants orient ultimately to the (absent) GP as the authority, and that this is a position which is arrived at in and through interaction. The EPR has brought the GP's absent voice into the consultation, and contributes to an interaction between nurse and patient in which the institutional order is re-negotiated and the doctor's authority is ultimately re-established, even in his absence.

## 7.12 Discussion

Analysis of these short data extracts highlights the complex interactional work which goes on when participants incorporate the EPR in the consultation. In particular I have focused on how the EPR contributes to displays of authority and to the circulation of authority within and beyond the consultation. Although the EPR creates new opportunities (for example risk calculation, inter-professional messaging, surveillance of medication, and prompts to health promotion) it also places new demands and constraints on the consultation and introduces new tensions. It contributes to – and is incorporated into – the moment-by-moment unfolding of the interpersonal interaction (the 'here and now') whilst also hosting and circulating voices which may remain 'silent' but are consequential to the consultation, both within and beyond the 'here and now'. These voices are multilayered, and demand that clinicians orient to multiple and new orders of indexicality – a challenge which I have tried to capture in the phrase "dilemma of attention" (Swinglehurst et al 2011). Most previous work has

focused on the material reality of the computer in the consulting room, and has identified the computer as an important challenge to active listening – "looking means listening" (Ruusuvuori 2001). My analysis confirms the importance of this observation whilst also engaging with a richer and more complex understanding of the EPR.

The EPR is not only a source of patient information but a means of highlighting what information *ought* to be sought, and constitutes new external lines of accountability (e.g. the QOF prompt in Case Study 3 – §7.8), placing additional pressure on clinicians to attend to issues which may or may not be immediately relevant to the consultation. With limited appointment time an inevitable additional institutional constraint, this poses a challenge for priority setting in the consultation – or as one of my GP colleagues put it: "*If they want me to collect brownie points then I can…but the patients are being robbed of their consultation.*" The challenge is not simply one of attending to additional topics, but also managing the additional *complexity* of interactional work – for example whether and how to account for this institutional activity, and how to foster and maintain the involvement of the patient in this new environment (Case Study 2 – §7.7 and Case Study 3 – §7.8).

The EPR starts to define not only what *ought* to be done by highlighting what is 'missing' from the institutional account, but also contributes persuasively to notions of what *should be the case.* As illustrated in Case Study 4 (§7.9), clinicians often have to negotiate different (and potentially competing) versions of reality presented to them by patients and the EPR, and in each of these situations lies the opportunity for the shaping of authority. It is often the recursive synergistic relationship between clinician and EPR that contributes to asymmetry in the consultation, as I have shown in Case Studies 1 (§7.6), 4 (§7.9) and 5 (§7.10). It is indeed common for clinicians to turn to face the EPR when posing questions ostensibly designed for patients about their past medical history. This action displays an assumption to the patient (whether intentional or not) that the EPR is a more reliable authority than the patient (Case Study 1 – §7.6).

Recent work on the use of electronic templates in the context of diabetic care in general practice lends support to the concern that the use of such templates may privilege 'hard' biomedical data over 'softer' more personal information (Checkland et al 2007;Rhodes et al 2006). My data suggests that this tension is also apparent in consultations which fall outside the deliberately structured 'template-driven' approach (which was the focus of the previous §6). The 'sense-making' which is enabled through the EPR's facility for dealing with the likes of 'QOF – smoking data', cardiovascular risk scores and surveillance of medication use is very different to that which patients pursue. For example, in Case Study 5 (§7.10) there is a tension between the patient's efforts to make sense of the cholesterol result by reflecting on dietary influences and an unspoken institutional framing of the patient within a risk discourse – between patient as individual and patient as one of a 'population at risk'. In Case Study 6 (§7.11) there is a tension between the patient's wish to work out what medication for her thyroid might "do" (in the context that she has not experienced any "trouble") and a biochemical representation of the patient as a set of laboratory values compared against  population norms.

I have argued that the EPR contributes to the construction of certain hierarchies of knowledge – some forms of knowledge are more 'valuable' than others. This value comes about precisely because the knowledge is open to manipulation, measurement and external scrutiny (and in some cases – as in QOF – the value is directly linked to a financial incentive). This is interwoven with – and constitutive of – the observation that the EPR contributes to a shift away from professional interaction towards interaction which is more closely aligned with institutional evidence and accountability. I reiterate a point made in the previous chapter (§6) that the EPR itself is not prescriptive in how different frames for sense-making are enacted, nor which kinds of knowledge are privileged, since there is scope for creativity in how the EPR's different voices are incorporated. However (and again I echo an observation from the previous chapter) the voices which the EPR admits into the consulting room are forceful, pervasive, difficult to ignore and constitute particular ways of accounting for clinical practice and legitimising particular notions of what 'good care' consists of. It is

this combination of defining what *ought* to be done / what *should* be the case (which I have referred to as the "deontic" voice of the EPR, page 184) in parallel with the shift towards institutional accountability, whilst also imposing a burden of additional interactional complexity which constitutes the new 'interactional regime'.

Arguably the notion of the 'triadic' consultation is inadequate as a way of making sense of the EPR, and Pearce's depiction of the EPR as an "equal partner" may be somewhat simplistic (Pearce 2007;Scott et al 1996;Swinglehurst et al 2011). By opening up the 'black box' of the computer and engaging with the complexity of the EPR-as-text (as well as the EPR as a material presence) the multiple voices of the EPR emerge as much more intrusive. Involvement (as Goffman conceptualised it) is becoming distributed between people and technologies, between the local 'here and now' and the distal 'there and then', in ways which pose new challenges to clinicians and patients, and which start to redefine the consultation as a site of social activity (Swinglehurst et al 2011).

At the same time, studying the construction and circulation of authority in the triadic consultation also highlights the ways in which the contribution of the EPR is highly contingent on, and tied to, immediate local practices. Several of the case studies highlight the importance of the recursive relationship between clinician and EPR – the way in which authority appears to emerge in the interaction between the two. That the clinician retains control over the operation of the EPR inevitably poses an additional challenge to the 'symmetrical' consultation. The patient and the clinician do not have equal access to the EPR as a resource for shaping the construction of authority. This may remain so even (as in Case Study 4 §7.9) when the patient can easily *see* the EPR, and may further contribute to what Pilnick and Dingwall have called the "*remarkable persistence of asymmetry*" in the clinical consultation (Pilnick and Dingwall 2011). It is rare and difficult (but not impossible) for the patient to use the EPR as a resource for challenging established lines of authority. For example, in Case Study 6 (§7.11) the patient incorporates the EPR in a rhetorical display which briefly challenges the nurse's authority and shapes the immediate context

for the interaction. That this is possible is illustration of the importance of the *situated* context of interaction in which the EPR is located; the authority of the clinician, the EPR (and all it represents) or the clinician-EPR in synergy is not by any means absolute. In Case Study 2 (§7.7) we see how a clinician treats the patient's account of her past medical history as authoritative whilst incorporating the EPR.

The EPR plays an important role but its authority is often partial – a product of the particularities of the interaction and the particular voices which it conveys (rather than of the EPR *per se*). Authority is woven not only through the words and actions of people who are present, but also the words and actions of people (and indeed institutions) who are absent (e.g. Case Study 6 §7.11). Through interaction authority can come to be located within, shared with, or enhanced by the EPR. Drawing on Bakhtin, we can say that the EPR, like all talk and text, is inherently heteroglossic – meaning that its 'sense' is governed as much by context as by text on any particular occasion of use (Bakhtin 1981b).

In the next chapter, the final one in presenting my findings, I build on the notions introduced here and in §6 by extending my observations into the 'backstage' regions of practice. I will take some of the analytic concepts which I have identified in my analysis of the micro detail of the consultation, and explore how these play out within the wider organisational contexts of Beech and Clover practices.

# 8 Beyond the consultation: from 'front stage' to 'backstage'

*We are living in an unfortunate historical moment, where computers allow things to be measured that couldn't be measured before…The issue is that the quality of medical care is being reduced to "tick boxes" and "outcome frameworks" and medical education to a series of competencies…The core of medicine – how doctors glean their knowledge then make judgements about individual people – is becoming lost because we can't "measure" it.*

Iona Heath, President of the RCGP (Philip 2011)

## 8.1 Introduction

In the previous two chapters (§6 and §7) I have focused primarily on the practices of incorporating the EPR into the consultation, my intention being to illustrate the profound ways in which the EPR shapes and indeed 'regiments' care practices and constitutes a new interactional regime. I have suggested that it contributes to new definitions of patienthood and the construction of a new professional habitus. I have also highlighted the role of the EPR in contributing to displays of authority both within and beyond the consultation. Conceptualising the EPR as a collection of voices, which are multilayered, has enabled me to conduct a micro-analysis of the EPR-in-use which is sensitive to the wider institutional context. This orientation exposes the EPR as a much more intrusive 'presence' than previous studies of the triadic consultation might suggest, and yet also points to the way in which its precise contribution at any moment in time is contingent on immediate local practices.

In this chapter I will briefly revisit some of the main ideas which I have introduced so far, before broadening out my analytic gaze into the 'backstage' regions of general practice – those areas of practice which are not patient-facing (Goffman 1959a). I will also broaden out my analysis in another important respect, with a shift away from the detailed micro-analysis of semiotic practices in the consultation, towards an ethnographic analysis of the wider organisational context. This combination of attention to close detail of local action and interaction as embedded within a wider social world is the distinctive contribution of

linguistic ethnography as an emerging field of study (Creese 2008) – see also §2.5 and §4.3.

In §6 and §7 I have suggested that the EPR creates new opportunities, but also places new constraints on practitioners and patients, and opens up space for new tensions in the consultation. These include the tension between individual and institutional framings of the patient – which in turn creates particular challenges in terms of the distribution of 'attention' or 'involvement' in the consultation – which I have called a "dilemma of attention" (Swinglehurst et al 2011). I have identified the potential of the EPR to contribute to a shift towards the bureaucratisation of care practices, and have introduced the term "deontic voice" to refer to the silent and yet insistent and intrusive voice of the EPR in contributing to definitions of what *ought* to be done, or what *should* be the case. The EPR contributes to the distribution of medical knowledge, constituting hier-archies of knowledge in which some forms of knowledge are more 'valuable' than others – often because they are open to measurement, manipulation and external scrutiny.[20]

Clinicians display creativity in the ways in which they incorporate the EPR within the interaction, adapting their particular use of the EPR to the immediate local communicative context. To this end, each and every use of the EPR within each and every consultation is unique and particular. However, as I have highlighted in §6 and §7, the scope for creativity operates within well defined institutional constraints, and patterns of activity emerge which are recognisable across consultations. Or, as Erickson puts it "*The local process of innovation in the conduct of discourse is not actually that of free variation… Rather the "work" of the real-time conduct of local social interaction is locally systematic, not random*" (page 190) (Erickson 2004).

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[20] In a recent conference presentation (COMET 2011, Nottingham) Charles Briggs suggested that modern actors in medicine - as ethical subjects - are increasingly under a moral obligation to *keep medical information moving* and he drew attention to the way in which subjectivities and subject positions are constituted within this normative assumption. This moral obligation – the normative assumption - is one which is discursively constituted.

In some contexts, such as the chronic disease management consultation, there is potential for the practical work of data gathering to become foregrounded in such a way that the creative judgements which constitute clinical decision making and 'holistic' interpersonal care are trumped by different creative judgements about how to incorporate (or work around) a relatively inflexible script in a social situation which is characterised by ambiguity and unpredictability. Borrowing from Blommaert I have referred to this as "*creativity within constraints*" (§6.10) (Blommaert 2005a). The clinician has to find ways of managing the tension between the demands of the 'here and now' – the individual unique and particular encounter – with the 'there and then' of the institution with its increasing appetite for data and abstract generalisations.

Adopting a perspective on human work and interaction as *accomplishments*, it is perhaps unsurprising to discover that these are *always* creative to some extent. However with different contexts come different opportunities for exercising creativity. Not only is a clinician's use of the EPR responsive to the immediate local communicative context, but the EPR itself constitutes a new context for interaction, one which is not wholly shared between clinician and patient. Arguably, it may *never* be wholly shared. Even if patients were to have full and open access to their EPR, there are institutionally sanctioned differences between clinicians and patients in terms of the purpose for creating records, the context for interpreting and understanding records, and different appreciations of the wider institution in which the EPR is embedded.

It is significant that much of the clinical work involved in meeting institutional imperatives and targets – such as the QOF – has been delegated by doctors to nursing staff and thus removed from the GP consultation. Relatively speaking, GPs retain more scope to work flexibly with the EPR, to focus their creative energy on the 'core' patient-defined clinical encounter. In some of my video-recorded doctor-patient consultations the EPR was attended to only briefly, if at all, while the patient was co-present. However as I have shown in §7, the EPR may contribute to displays of authority in the consultation with a tendency to sharpen the asymmetry in the interaction, by contributing additional institutional 'weight'. In some consultations, or in some parts of consultations, the EPR is an

overwhelmingly pervasive presence. In others its shaping influence is more subtle.

In summary, the EPR emerges as an important and (at times) intrusive presence with consequences both within and beyond the consultation. In other words, this 'presence' is one which is not contained within the consultation but extends beyond it, both spatially and temporally. This is what Iedema refers to when he identifies the EPR as an 'organising discourse' which achieves 'lines of force' across and beyond the clinic (Iedema 2003). My conceptualisation of the EPR as a collection of voices – rather than as a single unifying discourse – has enabled me to tease out some of the many threads which constitute the 'force' of the EPR, to illuminate the many semiotic planes in which the EPR functions and the many orders of indexicality (§7.5) to which users of the EPR must orient. The EPR may well be 'organising' but it is also 'doing' many other things as I hope my analysis so far has demonstrated.

It is beyond the scope of this thesis to trace all of the threads that constitute the EPR beyond the consultation, since its "webs of significance" (Geertz 1973) extend to include hospitals, IT-system suppliers, Primary Care Trusts, Strategic Health Authorities, policy makers and beyond. However I am going to take a small step towards a more macro perspective in this chapter, by following the EPR into what Goffman calls the 'backstage' or 'back region' of the clinic (Goffman 1959a). I will be drawing on ethnographic data selected from eight months of observation across two practices (Clover and Beech §4.6.1), in which I observed administrators, secretaries, managers, receptionists and IT personnel as they worked with the EPR. My backstage observations included time spent with GPs in coffee rooms, consulting rooms (between consultations) and administrative areas and observations of their interactions with staff, but neither practice granted me access to formal partners' meetings.

My intention in the rest of this chapter is to show how some of the characteristics of the EPR which I have described in detail in the micro-analysis of consultation data can be seen in the day-to-day workings of the organisation at a more macro-level perspective. I also hope to illustrate ways in which the

micro- and macro- are mutually constitutive (Giddens 1984). I will shift the focus of my enquiry from the 'interactional regime' to the 'organisational regime' and in doing so will show how the EPR contributes to 'regimenting' practices at the level of the general practice organisation as well as in the more 'micro' environment of the consultation.

## 8.2 Beech Practice and Clover Practice

I briefly introduced the two study practices in §4.6.1. To recap, Clover and Beech are urban practices, each serving a practice population of approximately 12,000 patients and both using the same clinical information system called EMIS-LV. To the casual outsider the practices look remarkably similar, even sharing the same postcode district within a provincial town of approximately 140,000 residents. Both practices used the same clinical information system (EMIS-LV) and both scored highly in the Quality and Outcomes Framework.

In terms of staffing structure there were some important differences. Table 20 shows the staffing structure as it was at the time of my research.

**Table 20. Staff at Clover Practice and Beech Practice**

| Staff Group | Clover | Beech |
|---|---|---|
| GP Principals | 7 | 7 |
| Salaried GP | 1 | 0 |
| Nurse | 3 | 5 |
| Nurse Practitioner | 0 | 1 |
| Health Care Assistant (HCA) | 0 | 1 |
| HCA / Administration (time divided equally) | 2 | 0 |
| Administrative / Secretarial | 6 | 2 (plus 1 occasional freelance worker) |
| Information Management/Senior Administrator | 0 | 1 |
| Information Management / Assistant Manager | 1 | 0 |
| Practice Manager | 1 | 1 |
| Receptionist | 6 | 10 (approx. 6 WTE) |

Whilst both practices had the same number of GP principals, Beech had twice as many nurses (including one Nurse Practitioner) as Clover. Indeed on my first day at Clover, the practice manager told me "*We are not paper light but we are nurse light*" as he introduced me to one of the nursing staff. Although this was said in jest, it was also the case that Clover employed almost three times as

many administrative / secretarial staff as Beech. Whilst at first sight the numbers of receptionists look very different, most of the receptionists in Beech were part time resulting in little difference in whole time equivalents (WTE).

Each practice employed someone whose main role was in Information Management and Technology. In Beech this was regarded as a senior administrative role and was occupied by a female member of staff who had started working at Beech in a more junior administrative role and had gained seniority over time. In Clover the person in this role was also "Assistant Manager" with some line management responsibilities for the administrative staff that he oversaw in a shared office. He had a background in non-NHS IT work prior to joining the practice in this role four years earlier. The female practice manager at Beech had been there for over twenty years, starting her working career as a medical secretary. The male manager at Clover had joined nine years ago following a previous career as a bank manager.

## 8.3 Characterising the organisations: 'ethos' and approach to new technologies

Both practices were generally perceived by GPs and members of staff to be very good places to work and were extremely welcoming of me in my role as researcher. Despite the broad similarities between the practices, I experienced them as very different kinds of organisations with different organisational ethos.

### 8.3.1 Beech Practice

Broadly I would describe Beech as having a 'traditional family practice' ethos with an emphasis on continuity of care and personal relationships. The practice had a mission statement which had been drawn up at an away-day approximately three years before my fieldwork began, when the GPs were considering the vision of the practice:

> *Our aim is to have a happy and fulfilled practice team which proactively delivers clinical care of the highest standard to a well informed patient population.*
>
> [date]

The manager said that although the mission statement was not on display in the building or in the practice literature, and was therefore not visible to outsiders as a written statement, that "*in a way what we do every day in our jobs is our mission statement.*" This privileging of the way in which things were actually done (rather than the documentation) was fairly typical of this practice in which the management valued teamwork and interpersonal relationships over bureau-cratic procedures. The word '*team*' was widely used by staff members of all groups as a descriptor of the practice. There were close working relationships between clinical and non-clinical staff, who regularly engaged in *ad hoc* unscheduled interaction in cramped shared working spaces such as the reception area and common room (which occasionally doubled as an admin-istrative area). Teamwork was characterised by a stable workforce in which there was much informal sharing of 'know-how' and – at least among non-clinical staff – there was a significant amount of cross-over of roles (both explicit and informal). For example, all members of the administrative staff were 'reception-trained'; the practice manager would occasionally provide reception cover if necessary, and the practice nurses were seen greeting patients at the reception desk if they noticed a long queue gathering. Differences in working practices between clinicians were widely acknowledged to exist, although this was not *usually* framed as a problem which required an organisational 'fix' but was instead tolerated and accepted as an inevitable part of practice life. In general, the doctors and management at Beech adopted a cautious approach to new technologies.

### 8.3.2  Clover Practice

I would describe Clover as having a 'modern business' ethos. Here the emph-asis was on uniformity, standards, protocols and 'customer care' practices. The management style was relatively 'top down' with stricter observation of roles, clear hierarchies and relatively higher levels of bureaucracy. Documents, written policies and protocols were highly valued by management and staff alike, who routinely referred to Clover as "the business" (e.g. "*this side of the business*", "*that side of the business*", "*the needs of the business*"). There had been a higher turnover of non-GP staff, almost all of whom had joined the practice

within the last five years and eight of whom had joined within the last two years. Knowledge transfer was generally articulated in terms of "training" and was usually viewed as a separate activity to "work". However, within each staff group (e.g. administrators or secretaries) there was much informal helping and mutual awareness of each others' working activities.

As in Beech there were disparate working practices between clinicians, but this was more readily identified by management (and administrators) as a 'problem' demanding an organisational 'fix'. That the doctors did not work in more similar ways was sometimes regarded as an impediment to progress. The management at Clover adopted new technologies readily and took pride in being 'ahead of the game' compared to other local practices with respect to IT During my relatively short stay at Clover the computer server was replaced with a higher specification model; there were purchases of cordless telephone handsets for administrators, portable hard drives and digital Dictaphones; a new networked electronic 'panic alarm' system was installed, and staff began using the GP2GP system (an electronic means of transferring records between GP practices) – Clover was one of the first practices in the county to do so.

## 8.4 The shape and pace of technological change at Clover Practice

Plans were afoot to install two plasma screens in the waiting area which would be used for 'calling' patients, with a touch screen for patients to 'sign in' on arrival at the practice. This was granted the approval of the GP partners during my stay and was something that the information manager and senior reception-ist talked about enthusiastically. They felt this would reduce receptionist hours, freeing time which could be diverted towards more efficient coding of electronic records. The manager hoped to replace signage throughout the building (at a cost of several thousand pounds) such that rooms which were currently named according to GP could be "future proofed" (the manager's term) with the use of room numbers instead of names, opening up scope for hot-desking. The manager likened the vision to the room system in a hotel. He thought patients would be more familiar with this and find it easier to navigate.

Box 11 shows an extract from my field notes. It is a short exchange which occurred in the reception area between two of the senior non-clinical staff as they discussed the upcoming changes in the practice.

**Box 11. Field note in reception area**

The senior receptionist and the information manager were talking about the much hoped for plasma screens, and the proposed arrangements for re-naming the rooms in the building.

The senior receptionist remarked:

*"I know they [the doctors] all have their own ways of working and some are tidier than others and they like their own things, but we want to move towards it being less personal and more uniform".*

Her colleague, the information manager, nodded approval to her suggestion adding that:

*"If everyone had everything in the same place in each room, everyone would know where everything is – if all rooms had the same layout."*

The senior receptionist responded, reiterating "*less personal and more uniform.*"

Although the doctors had agreed to these changes, my impression was that enthusiasm for these developments was not unanimous. Of the touch screens in the waiting room, one of the GP's lamented the loss of what they described as the "*last personal touch*". Another GP liked to go out into the waiting area and call in his patients by name; this would be challenged in the new system.

The pace of technological change was proving difficult for some members of staff. One secretary, who retired during my stay after 22 years of service, was explicit in blaming 'the computer' (and specifically the 'Choose and Book'[21] e-booking system) as the reason for her early retirement ("*the computer got the*

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[21] Choose and Book is an e-booking system which was introduced into the NHS in 2005. Ostensibly it enables patients who need an outpatient appointment to make a choice of hospital and book a convenient date and time for their appointment. In practice, the implementation of Choose and Book has been controversial and patchy, suffered numerous delays (especially in its early stages) and continues to generate adverse publicity.

*better of me*"; "*the patients have always been my main concern here. I don't know where patients are these days – lost under piles of paper and the Choose and Book system*"). She described this within a broader organisational context in which "*the manager wants to regularise everything.*" Her manual typewriter (which she still used occasionally for certain tasks) was wrapped in a red ribbon and presented to her by her colleagues as a leaving gift, a poignant symbol that this would no longer be needed at Clover.

This secretary's comments aligned with those of the practice manager who had spoken to me only a few days earlier about what he regarded as the "problem" with the NHS (Box 12).

**Box 12. Field note of discussion with manager, Clover Practice**

On my way out of the practice I stopped by at the manager's office. He explained how he had a background as a bank manager and had moved into practice management nine years ago. He explained that he thought the problem with the NHS is that "*everything is bottom up…everything is interpreted locally*". He said that in banking, the management is top down – if something comes from the top, everyone does it, and quickly and efficiently. He said it was a "*huge shock*" to him when he came into general practice, to find out that the Health Authority might ask you to do one thing, then the Strategic Health Authority might also ask you to do it as well, then in the end the LMC (*Local Medical Committee*) will send round a message telling *nobody* to do it. He said it took him some time to realise that things just didn't work "*top down*" and he said that he thought that this was the real "*problem*" with the NHS.

Even those members of staff who were keen proponents of technological change were caught out occasionally by the unanticipated consequences of the 'improvements' as the field note extracts in Box 13 illustrate.

**Box 13. Field notes taken in reception area, Clover Practice**

In the corner of reception where the old server used to sit on the floor there is now a huge floor to ceiling metal cabinet housing the new one, towering over the receptionists and making a loud noise – which I am told is the fan. The senior receptionist is sitting at her desk alongside it and this new server is causing her some consternation today. She says the fan goes on when the server gets too hot – which is happening all the time – so the Information Manager has advised them to keep the air conditioning on so that the reception area is kept cool for the computer server. It may not work properly if it overheats. The trouble is that when the air conditioning is on, the receptionists are getting too cold. In particular the senior receptionist has a stream of cold air blowing down directly on her head.

*Later that morning*:

The Information Manager came into reception and the senior receptionist told him that something would have to be done as the receptionists cannot tolerate having the air conditioning on all the time. He explained (jokingly) that there are 32 items on his 'to do' list at the moment.

*Two days later*:

Once again the receptionists are complaining about having to endure the cold since the new server arrived. I realise this is becoming an increasing source of tension and am struck by the balancing act between the 'needs' of the technology supporting the EPR and the more personal needs of those individuals working round about it.

That the EPR and its supporting technologies should shape the regulation (and regimentation) of the organisation at this level illustrates not only the importance of the technology to the day-to-day workings of the practice but also mirrors the dilemma of attention that we saw in the micro-detail of the consultation (§7.8) as institutional needs and individual needs are held in the balance, and attention to one may be at the expense of attention to the other.

When I made a return visit to Clover a few weeks after the main period of observation, the plasma screens and touch screen were in place. I was greeted by a screen displaying the message "*Click on the screen to arrive at the surgery*". This institutional notion of 'arrival' meant that the first thing now required of patients coming to surgery was that they engage with the technology in order to achieve official 'arrival' status. I recognised the manager's sentiments in the laminated poster which hung on the wall alongside, advising patients that the consulting rooms were now all numbered "*to help you find your way around the surgery*". Up until now the receptionists had greeted patients at the front desk and had typed "A" (for 'arrived') next to the patient's name on the appointments screen of the clinical system, providing a routine opportunity for patients to ask them for directions.  The greeting was no longer a personal one but a technological one. I reflected on the possibility that by introducing patients to this ritual of engaging with 'the screen' as they entered, the practice might prepare them in some way for the omnipresence of these screens which they would encounter again in the waiting room, and then again in the consulting room.

## 8.5 Investigating the EPR 'backstage' at a 'pro-technology' practice

In the remainder of this chapter I will continue to draw primarily on my fieldwork observations of Clover – which I identify as a 'pro-technology' practice – to reflect on the way in which the EPR can contribute to the regimentation of the organisation.  As in previous chapters where the focus was on the micro, I suggest that it is in observing organisational *practices* that one can gain an understanding of this regimentation. So embedded is the EPR within organisational practices that it makes no sense to study the EPR in isolation but instead to focus on the practices of people working with (and around) the EPR – a 'technology-in-practice' perspective (Greenhalgh et al 2011;Timmermans and Berg 2003). I have discussed this in more detail in separate papers in which I have used the organisational routine (Feldman 2003;Pentland et al 2005)  as a unit of analysis in an ethnographic study of 'hidden work' in repeat prescribing practices (Swinglehurst et al 2011;Swinglehurst et al 2010).

I will focus particularly on the processes of summarisation and Read coding (page 123) of electronic records and re-contextualise some of the analytic concepts identified in §6 and §7 to offer a more macro organisational perspective on the EPR. That new technologies were more enthusiastically embraced within Clover than they were in Beech aligns with (and contributes to the ongoing constitution of) a wider organisational ethos in which standardisation, regularisation (and hence bureaucratisation) of practices was welcomed and encouraged as a way of improving care delivery and achieving better quality. As Clover increasingly identified itself as an organisation which delivered quality through achieving and maintaining high standards of information management and careful attention to standards and protocols, so the opportunity to embrace the EPR was gaining momentum.

### 8.5.1 What I am *not* doing in this analysis

It is important at this stage to make clear what I am *not* doing in this part of my analysis. My primary concern in this research has *not* been to systematically compare and contrast two different organisations nor to systematically compare and contrast clinicians (or patients) in their consultations. More specifically, I am not suggesting that the differing organisational characteristics in Beech and Clover (§8.3) which I came to appreciate through my ethnographic observation can be correlated – in any linear, unproblematic or deterministic sense – with features of specific clinical encounters between clinicians and their patients in clinical consultations (or vice versa).

Although my work embraces the paradox which Erickson has put forward (page 14) in regarding both the 'unique' crafting of every interaction and the 'profound influence' of factors beyond the immediate temporal and spatial horizon of the interaction (page viii) (Erickson 2004), to suggest a simple link between particular consultations and a particular general practice organisation would be to underestimate the agency of individual actors (and reduce them to what Garfinkel termed "cultural dopes" (page 68) (Garfinkel 1967b) and *also* to simplify the complex webs of significance (§8.1) (Geertz 1973) of which clinician, patient, EPR and general practice organisation form a part. Although

my methodology facilitates an appreciation of these 'complex webs' I do not make any claim to *fully knowing* these webs.

The link I wish to make is less ambitious. It is not a deterministic link but an *interpretive* or *conceptual* one. That is to say, I am exploring *potential* and *possibilities*, not causality. In the rest of this chapter I will take some of the analytic concepts which have emerged from my micro-analysis of consultation data and follow them into the back regions of practice. I select Clover as an example of what Mitchell calls a "telling case" (page 239) (Mitchell 1984) and will establish some connections *at an analytic or conceptual level* between the observations I have made in the micro and those I have made at the more macro level of the organisation.

In the same way that I have selected (in §6 and §7) micro case studies of the EPR-in-use to build my understanding of the ways in which the EPR may contribute to shaping and regimenting interactions, so I select Clover as the practice which most readily embraces the EPR and related technologies. This gives us some insight into the trajectory or 'direction of travel' which the incorporation of the EPR into contemporary general practice supports.

### 8.5.2 'Caring' for the EPR: summarising records and echoes of the dilemma of attention

In Clover, the summarisation and Read coding of patient records was a high priority activity. Although some coding was done in clinical consultations (especially nursing consultations), much of it occurred in the backstage regions of the practice and was done by administrators, with guidance from the doctors. Four members of administrative staff were involved, and for two of them it was their main administrative role. "Summarisation" refers to the process of entering a Read coded summary of a patient's medical notes into the EPR (e.g. when a new patient registers at the practice). Coding was also carried out on receipt of letters about patients e.g. hospital discharge letters; reports from outpatient clinics. There was a fourteen page practice protocol for summarising medical records which was in its second version. It opened with the words:

The aim of summarising records is thus described in technological and institutional terms – the ease with which information can be accessed from the computer screen, with a particular reference to enabling institutional audit. As in §6 we see the juxtaposition of the individual patient's history with the needs of the institution for 'auditable' data. That the reason for this summarising process is to enable easy access to the patient's history via the computer screen resonates with my detailed observation of the consultation in which I observed the tendency for the EPR to *become* the authoritative source of the patient's past medical history, even when the patient was co-present (§7.6).

The summarisation protocol goes on to explain the procedure for sorting contents of the medical record and creating the summary; a list of the types of information which should be added; guidance on how to categorise summary data (as 'active' or 'significant'); three pages of "Medical Problems and Read codes" (taken from a document supplied by the local Primary Care Trust), and a page of "Common Abbreviations".

Summarising and coding a patient's records were regarded by administrators as responsible tasks demanding concentration. One of the summarisers liked to get into the office at 7:30 a.m. so that she could get on with summarising while the office was quiet and relatively free from distractions. Frequent reference was made (by administrators, manager, information manager and clinicians) to the amount of time and 'care' that went into this task. The information manager explained to me that other surgeries did not take as much care over coding and summarising as his own staff, and one of the GPs (who was talking about his concerns around the implementation of GP2GP transfer of records) highlighted their attention to detail: "*They* [*the GP2GP enthusiasts*] *underestimate the work that goes into record keeping…they think it just happens in the consultation but*

*you only need to look at how much care goes into the records, by people like [name of summariser].*" In the words of the retiring secretary "*At one time there was no need for all those admin people – but now there is a whole room of them – all because of electronic records.*"

Care was needed not only in creating the record but also in maintaining it – or 'aftercare'. Various terms were used for this activity – "cleaning", "feeding", "cleansing", "tidying" and even "computer toilet". In Beech one of the doctors often went in early for morning surgery and spent time 'cleaning up' the records of patients he was about to see, removing "clutter" and, if possible, reducing the number of 'problems' listed on the summary screen. He said "*I can't stand it when there are 24 active problems showing – I'll tend to clean it up*". A "cluttered" or "clogged up" summary screen was regarded by clinical and non-clinical staff in both practices as something to be avoided if possible.

There appears to be a poorly articulated and yet informally shared understanding that there is a limit to the number of 'problems' it is reasonable for a patient to have, a limit which is at least in part related to the organisation of entries on the computer screen and the material constraints around what can be viewed on the summary screen at any one time. In one consultation I observed in Clover, an elderly man had returned to the GP following an X-ray of his hands which had confirmed osteoarthritis as the cause of his aching thumbs and wrists. He had been treated by another doctor with some anti-inflammatory medication and had come to enquire about other treatment possibilities. After the patient left the GP looked at the patient's summary screen and commented: "*No one's put OA[22] here as a problem… I don't think I'm going to put it in…I just think he's got a lot of diagnoses already*" as if he had somehow reached this ill-defined limit. The diagnosis was entered in free text, but not Read coded and not afforded the status of 'problem' on the summary screen, making it more difficult to find in future consultations (and also 'invisible' to any audit process).

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[22] OA = osteoarthritis

In an example of 'aftercare', one of the doctors at Clover circulated an email to all staff in which he explained that he was in the process of manually editing over 200 patients' EPRs. Population Manager[23] was identifying these patients as "severely mentally ill and needing reviews" (a QOF requirement) although it had become clear to him (on closer inspection of the patients' EPRs) that this was because of the abundance of Read codes for "recurrent depression" and "endogenous depression". Although these codes may have been an adequate description of the patients' diagnoses at the time of the entries, they were now being 'captured' in automatic daily audits of the practice population for the purposes of a QOF target which is intended only for those with severe and enduring mental illness – such as psychoses. This additional work of editing the records ensured that the practice was not penalised financially for failing to offer detailed health checks to patients who (in reality) did not fulfil the criteria of severe enduring mental illness.

That the process of creating and maintaining summaries was resource intensive was well recognised and was mentioned in one of the Clover newsletters for patients, at the end of a section outlining recent areas of expenditure in the practice. It read:

> *Of course our main costs in keeping up to date are the employment of staff in updating our records and summarising our notes*
>
> [Reproduced from Clover Newsletter].

This sentence not only draws attention to the financial costs of summarising records, but also constructs this activity as centrally important to 'keeping up to date'. Prefacing the sentence with "of course" constructs this as 'obvious' and an inevitable part of the modern GP practice.

In the following extract from my field notes (Box 14) we get a glimpse into the 'care' that goes into summarising a patient's record.

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[23] Population Manager is software integral to the EMIS clinical information system which searches the EPR daily for Read codes which are part of the Quality and Outcomes Framework and identifies patients where there are outstanding items.

I joined one of the administrators, Amy, while she was part way through summarising a patient's notes. She had already started with the patient's Lloyd George notes (paper notes) and had then moved on to a paper print-out of the electronic record which had been sent by the patient's previous surgery.[24] Amy had a spiral bound notebook in front of her and was extracting information from the medical notes into her notebook, sorting it by date. She had started summarising this set of notes two days earlier, although she had done various other tasks alongside, and told me that Mr Oliver had quite a lot wrong with him. I was interested that she referred to the patient as Mr Oliver in way which conveyed a sense of really *knowing* him, the person. She worked in silence for over half an hour, at one point pulling out a medical dictionary from a shelf above her desk to help her in her task.

By the time she had finished working through the records she had filled ten pages of her notebook with dates and entries. She opened up the "Immunisations" section of the EPR and started entering immunisations complete with the batch numbers of the vaccinations when available. In a field called "place of procedure" she entered "elsewhere – no payment". She meticulously crossed the immunisation items out of her notebook as she went along.

Amy then typed the list of "Problems" which she categorised as "Significant" (as opposed to "Minor"). These included medical diagnoses, investigations and certain life events such as "death of mother" and "death of wife". As she went along she told me that the summarisers had often asked the doctors if they could categorise certain problems – such as tonsillitis – as "minor" rather than "significant." They had been advised that anything which is important enough to

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[24] Until the recent use of GP2GP transfer of records (which not all practices were using and which was not yet compatible with all GP clinical systems) the only way of transferring electronic records between practices was to print out the electronic records onto paper and bundle them together with the Lloyd George records. During my fieldwork it was a frequent source of complaint by summarisers that other practices did not always do this and there were sometimes gaps of several years in a patient's records as a result of this omission.

go into the summary should be classified as either "significant active" or "significant past." The summarisers thus defined all medical problems as "significant" including tonsillitis and chickenpox. She also explained that if there are any new diagnoses (in the last 15 months) which are QOF-related, the summarisers were not to add these Read codes to the summary but instead to alert the GP who would make a decision about coding.

She used a function called "group" to gather together Read codes relating to similar problems. When she did this 'grouping', one selected Read code would remain visible on the Summary screen, whilst the other codes would be hidden from view, until the EPR-user keys "P" to display the full problem list. She had to make judgements about which Read codes to group together and which to select as the prominent Read code.

Amy frequently needed to look in more detail at some of the letters and reports in the patient's records to help her in her summarising task. At one point she took out the report of an echocardiogram, but was unsure in the end whether it was a "normal echocardiogram" or an "abnormal echocardiogram". She instead opted for the more straightforward code "echocardiogram" and copied some notes from the result slip as free text alongside the Read code, by way of explanation.

She then hesitated as she grouped together right cataract / left cataract / amaurosis fugax / carotid Doppler scan. She recognised that these all related to problems the patient had experienced with his eyes but seemed a little concerned that they might be quite different. However she moved on.

She took out a brief discharge slip about a hospital admission, and a discharge letter – which was more detailed – referring to the same admission. This caused a lot of puzzlement. The dates on the two sheets of paper overlapped but were not exactly the same. The brief handwritten discharge slip said that "Atrial

Fibrillation" (A.F.) was the main diagnosis; the typed discharge letter said that "Postural hypotension secondary to ACE-inhibitor"[25] was the main diagnosis (and made no mention of Atrial Fibrillation at all). Furthermore this letter said that an ECG[26] had shown 'sinus rhythm' (i.e. *not* A.F.) She puzzled over this for some time, looking at the medication changes and trying to work it out, saying she was not sure whether to code one or other or both of these problems. She put it to one side to ask her coding colleague about it later.

Amy went on to copy "apthous ulcers" from her notebook into the EMIS problem list but couldn't find any suitable Read codes. She hesitated and wondered whether coding "recurrent mouth ulcers" might be suitable, but instead she used a highlighter pen to highlight it in yellow in her notebook. She explained that she highlighted all those entries that she struggled with and would come back to them later or discuss them with her coding colleague.

She struggled to find a code for "removal of testis" trying many different search terms to search the Read code dictionary: testicular; test; testis; testic. All resulted in several screens (or 'pages') of possible Read codes but none of them a perfect match. She opted in the end for a Read code "Other excision of testis" recognising it was a compromise but probably adequate in this instance. She complained that EMIS is annoying as it has so many bizarre codes that you would never need to use, but it is often very difficult to find what you want. Later that morning (by which time she had moved on to a different set of medical records) she said that she had remembered that removal of testis had a special name – orchidectomy or something like that. She didn't go back to make any changes.

After she completed entering codes she revisited her notebook and looked again at those entries which she had highlighted. She opened up Google on the Internet, and typed in "apthous" which resulted in a question "do you mean

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[25] ACE-inhibitor = Angiotensin-converting enzyme inhibitor. This group of drugs is used in various medical conditions including hypertension (high blood pressure) and coronary heart disease.
[26] ECG = electrocardiogram, a diagnostic test which records the rhythm and electrical activity of the heart.

*aphthous?"* She followed this hyperlink and worked out that there was a mis-spelling in the patient's original handwritten notes which she had been trying to summarise. She typed in "aphthous" into EMIS and was able to identify a Read code "recurrent aphthous ulcers" which she accepted. She breathed a sigh of relief, commenting that this patient had had several stomach ulcers in the past as well so she had wanted to check this out carefully.

Later that morning the other summariser came into the administrative office and Amy showed her the two conflicting discharge letters. They huddled round the screen, as her colleague enquired whether the patient's list of medication would help them to work it out. They studied his record, discussed his medication list and looked at the two letters for over five minutes as they struggled to make sense of it. The second summariser said that her gut feeling was that they shouldn't include "Atrial fibrillation" as a Read code. In the end they decided they should discuss it with a doctor.[27]

Amy returned to her notebook and identified another highlighted entry reading 'OGD'. She turned to me to tell me that she was a determined person and was going to try hard to find this one. She did not know what an OGD was and it was not a listed abbreviation in the summarisation protocol. Again she opened up Google, typed in OGD and found "oesophogastroduodenoscopy". She turned to the patient's EPR and typed "oesoph" and this returned many screens of coding options. She spent several minutes scrolling down through the screens to try to find "oesophogastroduodenoscopy" but did not find anything. She looked at the report of this test in the patient's notes in more detail and it said the patient had "gastritis" so instead typed this into the EPR and typed "OGD" in free text next to it as a way of dealing with this problem. She then got out two cards from her desk, on which she had written some notes. She added "OGD – no code" to the bottom of this and said that this would prevent her from having to spend so much time in future looking for a code that does not seem to exist.

Later that morning a doctor came into the administrative office and Amy asked

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[27] Atrial fibrillation is a diagnosis which has various QOF incentives associated with it.

for help with the coding conundrum. The doctor looked at the letters and concluded that if the patient *had* got atrial fibrillation then he was not being properly treated, and if he *hadn't* he was not being properly treated either. He said he would need to write to the hospital consultant who was responsible for the patient while he was in hospital three years earlier and ask him to check the hospital records. He asked Amy to send him an electronic note to remind him about this job and to put copies of the conflicting letters in his in-tray. Amy obliged.

Watching Amy carry out her work I got a sense of the administrator as 'bricoleur', bringing together opportunistically whatever was to hand in terms of knowledge sources, tools and materials to help her to get her job done (Lévi-Strauss 1962).   A dictionary, the Internet, different parts of the patient's existing record alongside the expertise of her coding colleague and the GP were all important. Unlike Lévi-Strauss's original description of the bricoleur however, this was not so much a case of 'making do' but a more considered interpretive approach involving what Wagenaar has termed "practical judgement" built up through experience (Wagenaar 2004). Similar observations have been made of litigation support workers working with legal documents in law firms, bringing new perspectives on what is often regarded as mundane routine work (Blomberg, Suchman, & Trigg 1996).

The administrator observed here had used her local knowledge of the practice's summarisation protocol, the decisions which had been made in the practice about the categorisations of problems, her understanding of the QOF, and unofficial norms about whom to seek help from first. She used her working experience of the Read code formulary and her understandings of the relative importance of particular diagnoses to make judgements on what constitutes a reasonable amount of time and effort to spend seeking out particular codes and solving particular dilemmas. For example, in this case she gave greater imp-ortance to resolving the problem of the possible atrial fibrillation / postural hypotension than to fine tuning the coding of the patient's testicular operation.

She also added notes to her personal records on Read coding, for her future reference in an ongoing process of reflective learning.

This summariser explained that she likes to summarise records as she would like her own medical record to be summarised, suggesting that she keeps the 'patient as person' in mind as she conducts her work. Another said that she felt very strongly that when she was coding records she was working *for* the patients, whilst recognising that *officially* she was working for the GPs. When summaries were received from other practices, they would start the process of summarising again, perceiving that summaries generated elsewhere were poorer in quality, missing important items and generally not to be trusted – "*there are summaries and there are summaries*". The recent decision to start using GP2GP software for transfer of electronic records between practices had done nothing (so far) to change this. Summarisers continued to 'start over' with summarising, placing higher value on their own summarising judgements than those of an unknown (and anonymous) coder from a distant practice.

Local ownership of the summarising process was important to the professional identity of the summarisers who took pride in identifying items of history that previous summarisers had missed, and 'improving' summaries by extending them and annotating existing Read codes with qualifying free text. I realised that in the administrative areas of the practice, the patient's data and information in the EPR is the substrate from which administrators can carefully and creatively mould the EPR into shape for the new organisational context. Through this process of building, extending and 'improving' the EPR, administrators contribute to the construction and redefinition of this new information context.

The sense of being *informally* accountable to patients and *officially* accountable to GPs and the wider institution is something that I noticed in many areas of non-clinical work (Swinglehurst et al 2011) and was sometimes a source of tension. There are some parallels with the dilemma of attention which I have described in §7, the administrators orienting to many different orders of indexicality simultaneously. Although the summarisers only ever worked with the patients' records (the patient inscribed) (Robinson 1998) they were

constantly making judgements about the role of the EPR in supporting individual patient care ('patient as person'), within a broader context of institutional requirements for record keeping. They had built a strong professional sense of working *for* the patient within these institutional constraints. For the summarisers, a 'good' summary was one which was thorough and complete, in which nothing had been missed out. The GPs, by contrast, had a less ambitious approach. Administrators suspected (rightly) that some of the GPs felt they spent too much time on their summaries, producing summaries which were too detailed, when something more "basic" would do.

Until recently the GPs' role in summarisation was limited to making judgements about whether and how to Read code 'new' diagnoses which were relevant to the QOF – with implications for targets, QOF-related workload and practice funding. As much QOF performance is based on activity within the previous 15 months, this determined the definition of 'new' diagnoses. Summarisers would alert GPs to these potential diagnoses as they came across them, thus always remaining sensitive to the fact that some diagnoses (such as atrial fibrillation or diabetes) are more consequential than others (such as multiple sclerosis or osteoarthritis) in institutional terms and keeping the 'institutional' version of the patient in mind. This privileging of certain codes (or diagnoses) which have particular institutional import is apparent in the backstage just as it is in the chronic disease management consultation (§6).

Once certain Read coded diagnoses are entered into the EPR the patient becomes part of the 'denominator population' for a range of QOF targets, and there are demands on the organisation to meet these (if they want to achieve the available financial incentives). Institutionally, higher stakes attach to these diagnoses than to other (comparable) diagnoses. Accordingly, different 'care' (delivered by different professionals) attaches to different parts of the patient's EPR in the 'backstage' regions of the practice, some parts attracting greater scrutiny than others. This parallels my observation of the 'front region' in §6 in which I described the contribution of the EPR to the abstraction of the disease from the patient, with different diseases prompting different occasions for care.

### 8.5.3 The constitution of professional hierarchies and local accountabilities

In the next section I will focus (as I did in §7.11) on the way in which professional hierarchies and local accountabilities are negotiated around the EPR in the backstage. I will begin by extending my observations of summarisation practices and will then look more closely at the work of an administrator as she went about her routine of coding incoming post to the practice.

In recent months, the GPs at Clover had started assisting with the summarisation process, with the aim of achieving a 'higher percentage of notes summarised' (itself a QOF target, and also a requirement of GP training practices). This had highlighted some differences in the approaches taken by administrators and doctors and had provided an opportunity for some interesting accountability work.

One of the summarisers had distilled the fourteen page official summarisation protocol into a simpler one page document which was given to each GP called "*Summarising of Patients' notes – a short overview of what we currently do!*" In Box 15 I have included some sections of this document (the italics are my own):

**Box 15. Extract of document prepared for GPs by summarisers at Clover Practice**

<u>**Summarising of Patients' notes**</u>
A short overview of what we currently do!

1) **For each diagnosis please write the exact date of the 1st onset (not just the year please!) & mark whether it's (A)ctive or (P)ast**

We include: –
- Illnesses (including chickenpox in women of child bearing age and mumps in men!) For hysterectomies please state which type & why done + recurrent illnesses requiring 4 weeks away from work / MED 3s[28] & any relevant referrals & investigations
- Operations

………………………[*list of ten further items*]

- Any allergies (+ effect drug has if possible!)
- Any relevant tests as below (QOF)

<u>**QOF requirements**</u>
**Angina** – Newly Dx [*diagnosed*] after 1/4/03, proof of referral for ExT's [*exercise test*] (we code ExTs) & specialist
**AF** – Dx after 1/4/06, need confirmation with ECG or specialist
**COPD** –Dx to be confirmed by spirometry including reversibility testing
**Asthma** – Age 8 & above – proof of spirometry since 1/4/06
        If asthma now resolved, need a date of resolution
**Depression** – New Dx between preceeding[29] 1 April & 31 March proof of an assessment with an assessment tool (PHQ-9's, HADs etc [*two assessment scales*]– we need to record both anxiety & depression scores)

2) <u>**Immunisations**</u> – Please record any NOT already listed on EMIS

3) <u>**Smears**</u> – Please record any abnormal smears & colposcopies & last 3 normal smears (if not already on EMIS)

Although introduced as a "*short overview of what we currently do*" and incorporating a detailed list of what "*we include*" the document is also replete with requests to doctors to do things in certain ways e.g. "*For each diagnosis please write the exact date of the 1ˢᵗ onset (not just the year please!")* The exclamation mark invokes an imperative tone and implies that it would be somewhat capricious to do otherwise.

An understanding of this document requires some understanding of the organisational context in which it has been developed. For example, I was intrigued by

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[28] MED3 is a sickness certificate completed by a GP to endorse a patient's absence from work on the grounds of ill health.
[29] Original spelling retained

the specific mention of "chickenpox" both in the summariser's description of her summarising role (see Box 14) and (again) in this short document (Box 15). The summarisers *used to* record chickenpox as a 'minor' problem, but when doctors had advised them to include only diagnoses which they regarded as 'significant' this had prompted the summarisers to suggest to doctors that in certain *particular* circumstances (e.g. pregnancy) it might be important to know about previous chickenpox. An agreement had therefore been reached between them that chickenpox be included in summaries as a 'significant' problem and it had been re-categorised as 'significant' ever since. Its appearance in this document is not simply an 'overview' of what the summarisers 'do' but a reference to a small triumph of administrators over doctors.

In practice, a number of problems which summarisers might previously have defined as 'minor' problems they now defined as 'significant'. This meant they could satisfy the requirement of the official summarisation protocol (which includes: "*It is vitally important that nothing is missed*"), exercise their own wish to be thorough and professional, and also satisfy (by means of a workaround) the doctors' request that problems which are important enough to be in the summary should be 'significant' ones. One of the summarisers justified this workaround further by pointing out that when doctors go out on home visits and take a 'summary printout' (a paper summary of the patient's EPR) with them, this printout lists only 'significant' problems, not 'minor' problems. Classifying problems as 'minor' might, she said, risk compromising care for patients in this situation. As in §8.5.2 we see evidence of the tension which can arise between the administrators' formal accountability to GPs and the institution, and their sense of informal accountability to patients. Arguably she may also have been drawing rhetorically on the construct of 'informal accountability to patients' by way of justifying to me (as researcher) the administrators use of a workaround which meant that they continued to enter 'minor' problems into the summary.

As part of the recent drive to get more summaries completed, one of the GPs had developed a form for his GP colleagues to complete as they selected items from the patient's record for the summary. There were separate sections for smears, past medical history (significant active and significant past), allergies,

and immunisations. I noticed that the section for "Immunisations" said, in brackets "(*if time permits, without this paper records have to be dug out if patient enquires*)". This qualifying note added to the 'immunisations' section suggested that this aspect of the medical record was regarded as low priority compared to the other parts of the record. By contrast, my observation of the summarisers revealed that they often entered details of all immunisations into the EPR first, before tackling other aspects – painstakingly copying vaccine batch numbers and entering codes for 'place of procedure' alongside (Box 14).

It struck me that an incomplete immunisations record in the EPR would be more troublesome for nurses and administrators in their daily work than for GPs (who rarely give immunisations outside of the annual influenza campaign and rely on nurses to run the travel clinic). This is one example of the extent to which different staff groups have different perspectives on what constitutes an adequate summary, with different intentions and assumptions shaping what constitutes the summarised record (Cochran et al 1980). However it is more than that. The note "*if time permits*" contains an implicit value judgement concerning the relative value of a GP's time compared to that of administrators and nurses. Lack of 'time' would not be a legitimate reason for an administrator to omit immunisations from a patient's EPR. That a GP may find that time does not permit including immunisations in a patient's summary is somewhat undermining of the administrators meticulous efforts in ensuring the immunisation records are thorough and complete. In addition, failure of a GP to attend to this aspect of summarising may result in nurses investing time in the middle of a travel clinic to "dig out" a patient's paper notes (a metaphor which conveys a sense that this is indeed labour intensive).

At first, it was unclear why a GP would develop a paper form for use in creating an electronic summary, but I came to realise that this was an intermediate document. This was a place for GPs to identify *what* they wanted to include in the summary, without investing any time identifying specific Read codes to capture the concept. This work of matching items on the list to appropriate Read codes was passed back to the administrators, in a move which may suggest

that the GPs considered that the most important judgements lay in the selection of items for summarisation, rather than in the coding itself.

One of the administrators gave each GP five sets of notes for summarising per week, keeping a record of who had been sent which notes on a spreadsheet. GPs returned their completed forms to the summarisers, in which they listed the items they wished to be entered into the patient's EPR summary. The summarisers entered these items into the EPR one by one, choosing appropriate Read codes. Not all GPs had kept up with this workload, and whilst administrators said they were delighted that the GPs were helping them out in this way, they were very uncomfortable about the way the process was unfolding. There was concern that their protocol (Box 15) was not being followed and that the GPs' summaries were not sufficiently detailed. Some diagnoses were not being included and records of immunisations and cervical smears were sometimes incomplete (it is of note that the work of cervical screening is done almost entirely by nurses – who do the smears – and administrators who are responsible for issues of registration and recall). However, the administrators had (reluctantly) agreed that they would not do any further checking against the original medical notes (which would incur the very time penalties that this division of labour was supposed to address). They would simply enter Read codes for the selected items as the GPs requested. This was a source of significant tension for summarisers.

An integral part of the summarising routine was that a Read code ("*notes summary on computer*") was entered into the patient's EPR to indicate that a summary was complete. This is an example of the EPR being used to collect 'meta-data' or 'data about data' with notes summarisation being a requirement of QOF and itself subject to regular institutional audit. The administrators had spoken with the practice manager about their concerns over different standards of summarisation, and an agreement had been reached on a way of dealing with it. The administrators would identify a *different* Read code which could be entered into the patient's EPR to signify that notes summarisation was complete. This would be understood (locally at least – its sense would be lost on any transfer of the medical records to a different context) to mean that a

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*doctor* had done the summary, rather than a member of the administrative staff. Administrators felt that this would cover them in the event of any queries, the implication being that the summaries the doctors were creating were not meeting their own standards. They decided on a new Read code "*Lloyd George and Problem Summary*", and each time they entered this Read code they qualified it further by typing the GP's initials alongside, in free text, to identify which GP had done the summary.

I came to realise that the summarisers had constructed a particular notion of summarising which they cherished and which constituted their own 'gold standard'. In this instance the EPR was being used resourcefully by administrators to facilitate surveillance of their employers (the GPs) in what seemed like a curious reversal of the usual lines of accountability. This resonates with Case Study 6 in §7.11 in which I presented a rare example of the patient drawing on the EPR as a resource within the consultation in a challenge to established lines of authority.

### 8.5.3.1 Competing lines of accountability in coding the incoming post

I will now shift my attention away from the summarisation of patient's notes to the (somewhat similar) activity of coding the incoming post. Letters sent to Clover about patients (e.g. hospital discharge letters and reports of outpatient clinics) were scanned by a receptionist to produce an electronic document which could be attached to the patient's EPR. A document management system (Docman) was integrated with the EMIS system so that EPR users could toggle between patient records and attached electronic documents easily. Electronic documents were circulated between different members of the practice in an electronic 'workflow'.

Letters were sent electronically to the patient's GP, who read them and highlighted the document electronically, as well as deciding whether any action was necessary. Comments relating to this processing of letters were typed alongside the documents. The GP highlighted those parts of the letter for Read coding (by administrators) in grey, then used a yellow highlighting function for those parts of the letter which s/he wanted to be most visible when the document was

opened in future. The letter was then sent electronically to the coders. Coders had been advised that anything which was to be Read coded should be categorised as 'significant' and 'active'. One of the doctors liked to do most of the Read coding himself; another occasionally did. The remaining doctors generally relied on the coders.

I came to understand the coders' task as having three dimensions, of increasing complexity. The technical dimension (i.e. working with EMIS and Docman) seemed relatively straightforward. Letters could be re-directed and notes added if necessary, or the coder could 'terminate the workflow' once a letter was coded. Selecting Read codes which matched the grey highlighting was more troublesome and fraught with the same challenges that the summarisers encountered (§8.5.2). Most difficult of all was managing the social complexities of this task, in a (virtual) environment in which each GP had their own preferred ways of working. A short session of coding could generate many queries to resolve.

Here are some extracts from my ethnographic notes as I observed a coder at work (Box 16):

**Box 16. Field notes on 'coding the post', Clover.**

I sat with Linda as she began her work of coding the letters which had arrived from the hospital. Before she started, she explained that if there is something which she thinks ought to be coded but which the GP has not highlighted, then she will redirect it back to the doctor to ask them if they would like a particular item coded. She hesitated and then added that it all depends on the doctor and the particular issue. She had talked with one of the doctors (Dr Mann) who had given her the go-ahead to code anything she felt was missing and that he would be grateful. With other doctors she would have to make a judgement on a case by case basis. She looked very apologetic as she said this as if to imply that she should not be making any such judgements.

She opened up a letter which had been marked "no action" by one of the GPs. She read the letter and opened up the patient's EPR. The letter was about a

patient having an ERPC (evacuation of retained products of conception) after a miscarriage. Linda noticed that the patient's record already had a Read code for 'miscarriage' but she felt that it was important that the ERPC was added. This letter had been dealt with by Dr Mann with whom she had reached an informal agreement that she could code anything she felt was important. She did not in fact add any further Read codes, but added free text next to the 'miscarriage' code to indicate that the patient had also had an ERPC procedure.

Another letter came in from Dr Mann, also marked 'no action'. The patient had experienced an SVT (supraventricular tachycardia – a kind of cardiac arrhythmia) which had been treated with cardioversion. She opened up the EPR. There was already a Read code for SVT dated 3 years earlier, but no mention of the recent episode or of the cardioversion. Despite the informal agreement reached with Dr Mann, she decided to re-route this letter back to him to ask him whether he would like to code for the SVT and cardioversion. She said she would probably get a reply the following day and would come back to this record again then.

There were two further letters from Dr Mann both marked "no action". The first was about a surgical release of a patient's De Quervains tenosynovitis. That the patient had De Quervain's tenosynovitis was already Read coded in the EPR, but Linda edited the entry to add some qualifying free text next to it to show that it had been released surgically. She also spotted that the discharge slip said the patient was allergic to penicillin and added this to the EPR, with some free text alongside indicating that the origin of this information was a discharge slip and dating it. Next a colonoscopy report which she Read coded "colonoscopy".

I got the feeling that by the time she got to the fourth consecutive letter from Dr Mann which said 'no action' that she was getting rather embarrassed.

The next letter was a discharge letter from the maternity unit and one of the doctors, Dr Forster, had already Read coded this. The patient had had an emergency Caesarian section because of PET (pre eclampsia). Although the coding had been completed, Linda identified a problem. Dr Forster had added a

Read code for "Eclampsia of pregnancy" with a date which was two days *after* the date of the Caesarian delivery. Linda asked the Information Manager who was working at a different desk in the administrators' office for some help. They discussed this at some length. In the end they decided that she should delete the Read code for "Eclampsia of pregnancy" and re-enter it with a date two days earlier so that it matched the date of the Caesarian section. After she did this Linda then added a separate Read code into the EPR "error entry deleted" and added free text next to it – "PET code, incorrect date".

With the next letter the doctor had added a note "*Read code as avulsion of biceps tendon reattached to medial tuberosity, or whatever the Read code system allows*". She took a long time on this, perhaps not surprising given the nature of the request, but on this occasion the GP was explicitly suggesting that she use her judgement. She opened up a letter from the out-of-hours service which had been the patient's first port of call, then searched the Read code dictionary using the terms "tendon" then "avulsion" then "biceps". She found a code "biceps tendon traumatic rupture" and said she thought that might be suitable, searched once again for "tendon" and in the end opted for a code "tendon repair operation" copying alongside it in free text the note which the doctor had typed – "*avulsion of biceps tendon reattached to medial tuberosity*".

The next letter was a handwritten letter from the ophthalmology department which had been scanned but was difficult to read. A doctor had highlighted one section of it and added a note reading "*I think it says bilateral ectropion*". Linda searched for ectropion and found several Read codes relating to ectropion of the cervix which she realised were incorrect, and then a list of other Read codes which she commented all began with "F". She stood up and consulted an A4 sheet which was pinned on the wall near her desk – a handout of a PowerPoint presentation about Read codes. She pointed to this and said that the "F codes" indicated 'nervous system and sensory'. She went back to the patient's EPR and as a test she searched for 'cataract' as a way of checking that this was the correct Read code 'family'. She found that the code for cataract was an F code and concluded that the correct code for ectropion should begin with F. She was

able to select a code to add to the patient's EPR.

Linda then opened a discharge note of a 90 year old patient with multiple problems: falls / chest infection / ischaemic heart disease / right ventricular failure / pulmonary embolus / depression / fractured radius / atrial fibrillation / partially sighted. There was a long list of medication. Dr Smythe had marked this 'no action'. Linda opened up the patient's EPR and noticed that some of these diagnoses were not in the patient's summary. She said she wondered if the GP was waiting for the formal discharge letter before coding it. As she started to type a note to the GP she commented that it is always really difficult knowing how to word these electronic notes to the doctors and that it made her feel very uncomfortable at times because she felt like she was checking up on the doctors. She said she realised that they are very busy and that this is a task they might approach at the end of a busy day seeing patients. In her note, she asked the GP if he was awaiting the formal discharge letter and wondered whether he would like her to add a code for the pulmonary embolus.

Every time she finished dealing with a letter she added a note of her initials to it on the screen, to indicate she had been responsible for coding.

I had become very aware that she found this difficult work. It had been evident in her facial expressions and her body language. It was conveyed in the careful thought that she had given to the precise wording of her notes to doctors, the frequent apology that accompanied her judgements of how to proceed and the relative reluctance which accompanied any 're-routing' of documents to the sender.

In my own reflective notes, made just after this session of observation I wrote:

*I was so struck by the balancing act that I had been observing – by the coder's clear sense that she was serving both patient and doctor and always trying to gauge their interests. I realised that coding a record is not the unproblematic technical task which it is so often assumed to be, but a highly social phenomenon and one which involves interpretation and judgement at so many levels. Deciphering poor handwriting; contradictory entries in notes; diagnoses that have no Read codes at all; Read codes which seem 'not quite right' for the particular problem. But most of all I*

*realised how difficult it was to make those moral judgements about whether to act on (or quietly ignore) concerns that coding may not be perfect (but can it ever be?), whether and how to craft those notes to doctors, and how to gauge how different personalities in different and particular circumstances might react to receiving such notes. As she said, all the doctors are different and do things in different ways. Mastering the coding task was much less about coding and computers and so much more about managing relationships than I might ever have imagined. How a patient's record is coded is not only (or even mainly) about 'capturing' and representing specific diagnoses as bytes of data, but is a product of complex and nuanced interactions between clinicians and administrators shaped not only by the 'facts' of the case, but the ongoing relationships which are co-constructed alongside the 'problem list'.*

[Field notes]

Once medical judgements are no longer the unique province of the doctor, other members of staff – such as coders and summarisers – have responsibilities which are not always socially recognised in the hierarchy of the practice. On the one hand, the GP's authority is undermined by the potential for work to become more distributed. The EPR's wide 'organisational reach' and its ready openness to surveillance by other members of the practice – such as administrators – opens up scope for the medical judgements of doctors to be scrutinised (and criticised) by administrators (Iedema 2003). New lines of accountability are constructed. On the other hand, the GP's authority within the social environment of the practice is carefully maintained (Box 16, and accompanying field note). This is in part constituted through the social actions of GPs but (as we saw in §7) more importantly it is in the reciprocity of social actions and interactions between GPs and administrators that the social hierarchy is maintained.

This coder (Linda) also worked half time as a healthcare assistant in the practice, a role which included taking blood tests and blood pressure readings, 'new patient' health checks, and reviews of patients with ischaemic heart disease (using a template §6). An excerpt from a practice newsletter for patients included a short section on the healthcare assistants as shown in Box 17.

**Box 17. Extract from practice newsletter, Clover Practice**

Our Health Care Assistants

You do not always need to see a doctor or nurse when you come to the surgery. We may instead direct you to our two Health Care Assistants [names]. Some of the jobs you need doing are better done by people who specialise in the tasks. Our two HCAs have had special instruction for doing [*list of different services*]. You should not ask them to interpret your results as they have not been trained for that, but they are very good at telling you where to get an explanation.

Although describing the HCAs as 'specialists' in certain tasks, the newsletter makes it clear to patients that they should not expect HCAs to do the (more complex) work of interpretation but that they will tell patients where they can go to 'get an explanation'. Linda said that she found her role as coder and summariser of records much more demanding than her role as health care assistant, despite the complexities of face-to-face interaction with patients which her HCA role required. In her coding / summarising role she said she sometimes felt as if she was checking up on doctors and judging them and this made her feel uncomfortable. I realised that in her role as a coder she was making numerous interpretative judgements. These judgements were in part about selecting the right Read codes to describe situations which were some-times ambiguous or not readily amenable to coding. More importantly, it was about how to 'act' in situations where 'no action' was recommended by the GPs. "No action" *never* meant that no action was taken by Linda. If anything, it was when "no action" was recommended by doctors that the coding task became most perplexing. It was in circumstances of "no action" that different perspectives on what constituted a good summary came to the foreground and her moral sense of informal accountability towards patients jostled (and often jarred) with formal accountabilities towards the doctors and the organisation (Swinglehurst et al 2011). Adding to this complexity, the social negotiations which ensued were carried out primarily within virtual networks through written text (rather than talk) and remained visible to anyone who chose to study the 'audit trail' at a later date.

These delicate transactions were emotionally-laden and complex displays of face-work (§5.1.5) (Goffman 1955;Goffman 1967), albeit face-work occurring

via electronic messaging in a virtual environment where simultaneous (visual and auditory) monitoring of her recipient's reaction was not possible. The coder projected her identity as a competent, conscientious, caring worker trying to meet her informal obligation to patients. At the same time she was also being highly creative in finding ways of respectfully engaging the GPs in a new kind of exchange where professional hierarchies and local accountabilities were being constantly renegotiated and notions of what constitutes good quality Read coding were being refined and revisited in every exchange.

Linda was widely acknowledged to be particularly good at her job by GPs and management alike.

### 8.5.4 Accountability work, the 'deontic' voice of the EPR and the disciplining of practice

The work of administrators in summarising and coding records at Clover is complex, socially demanding and resource intensive. It is also work which provides an opportunity for them to contribute to new understandings of what constitutes a 'good' summary. This contributes in an ongoing way to the construction of the local 'information context' and to particular norms of information management which are shaped through repeated iterations of the coding and summarising routines. In parallel with this, there is space for new lines of accountability to be negotiated repeatedly.

Despite well recognised concerns from doctors that administrators may be paying too much attention to detail in their coding practices (which is time consuming and financially costly), and an understanding by coders that the doctors want something more 'basic', the administrators were developing their status as local 'experts' in their work. For example, the recognition of Linda as a trusted expert in coding and summarising of records is supported by the fact that one GP had (informally) agreed with her that she may add Read codes to patients' records as she felt appropriate, and by several comments made by GPs during my observations about the quality of her work. In addition, administrators took ownership of the implementation of the GP2GP record transfer system, making a collective decision to 'start over' with summarising in

order that their own particular standards of coding could be maintained – a stance which was supported by the information manager. Administrators had created a short (simplified) 'protocol' on summarisation for doctors to use (Box 15), and identified doctors' summaries with a new Read code to distinguish doctors' work (which they perceived as poorer in quality) from their own. Linda felt able to re-route letters back to GPs if she had concerns that some 'no action' items may need further attention, even though this was clearly a sensitive task which required very careful handling.

These activities may be interpreted as moves which sought to protect their own interests in the coding practices as well as keeping the 'patient as person' in mind. Throughout all of these activities, administrators were orienting to both 'individual' patients and 'institutional' pressures, managing what were sometimes competing perspectives on the purpose of the coded entries in the EPR. In the micro-analysis of the consultation in the 'front stage' (§7), I suggested that the EPR tends to *contribute* to the existing asymmetries between clinicians and patients by adding institutional weight to the encounter. In parallel, in the backstage, administrators are able to work creatively with the EPR in ways which *challenge* existing organisational hierarchies and asymmetries, and construct new lines of accountability. However, the exercise of this 'accountability work' is highly mediated and hedged, is emotionally laden, and (on the whole) operates within constraints which favour the maintenance of the social order in the hierarchy, even as work is being distributed and responsibilities shared. However, just as each consultation between clinician and patient is unique, so is each and every exchange between administrator and clinician in the (mainly virtual) world of the EPR, and within each exchange lies a small opportunity for social change, and one in which the influence of the back office may, over time, grow.

During a backstage conversation with a GP during my fieldwork, he described the EPR as a 'magnet' in the consultation which he felt "drew him in" and compelled him to attend to it. Another said that he had to make a very conscious effort to put it to one side – that it was easy to be seduced into spending too much time attending to the EPR. When I observed surgeries,

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several GPs apologised to me (between consultations) if they did not respond to EPR prompts, or gave explanations for why they had chosen not to attend to particular prompts *today*. One expressed disappointment that in the consultations I video-recorded there were no QOF prompts because he "always" attends to them. He followed this up by asking me if I was impressed that he had *at least noticed that there were no outstanding QOF alerts,* pointing out that this meant they had *already* been dealt with previously*.* On a separate occasion this GP told me that although his consultations lasted an average of only seven or eight minutes, he was still able to collect all the necessary QOF data within this time-frame as well as making his EPR entries whilst the patient was still in the consulting room. Observing a full surgery of consultations with this GP confirmed that this was (usually) the case.

I was repeatedly struck by the extent of the accountability work that went on as doctors talked about the EPR. Whilst I acknowledge that the GPs concerned may have been doing 'identity work' in their interactions with me in the specific context of my research, they constructed a normative sense that they *ought* to meet the demands of the EPR, or at least provide some account or explanation of why they may not in certain circumstances. In §7.8 and §7.9 I introduced the notion of the deontic voice of the EPR. We can understand the deontic voice of the EPR as emerging in the compelling call to 'act' which comes to accompany the EPR – the sense that individuals *should* attend to the EPR in particular ways. Coders and summarisers also oriented to this deontic voice, inasmuch as they seemed compelled to 'act' with the EPR even in situations where 'no action' was specified, or to extend summaries by adding Read codes over and above those requested by the GPs, or by elaborating existing Read codes with qualifying free text. "I must code *something*" was a sentiment often heard in the administrative office when frustrated coders struggled to identify a suitable Read code, a process which sometimes took as long as twenty minutes and involved collaborative work with coding colleagues.

The tendency was for summaries and 'problems lists' at Clover to get longer and more detailed through these processes, despite the widespread understanding that 'cluttered' screens were to be avoided. As summaries get longer,

so the potential develops that someone somewhere else in the organisation may edit or 'clean up' the EPR, as yet further effort is invested in 'caring' for it. This collective attention throughout the organisation to producing, maintaining and editing the EPR – quite apart from the equipment and technical support that is required to keep the EPR operational – constitutes the EPR as significant and central to practice life. This 'meaning-making' around the EPR is constructed and sustained through repeated small and seemingly mundane moment-by-moment practices of organisational actors as they engage with the EPR, and with each other around the EPR. It is in this semiotic context that I suggest that the EPR contributes to regimenting practices in the organisation – hence contributing to the 'organisational regime'.

### 8.5.5  The EPR – similar challenges; dissimilar responses

I have emphasised (in §7.6 and §7.9) the importance that the EPR does not act alone but exists in a recursive relationship with social actors who use it (or 'interact' with it). I have also drawn attention to the ways in which the EPR contributes not only to the immediate interactional context but also to the shaping of organisational contexts. At the same time, it is difficult to make sense of the EPR without attending to other aspects of the broad social context within which we find it, whether our focus is on the micro-analysis of the clinical consultation or a more macro interest in an organisation. The complex inter-relationships which are in play between EPR and user, and between  individual actor and organisational context are key to understanding how repeated iterations of social practices by organisational actors – from administrator to clinician to manager  – may come (over time) to constitute what we understand as the 'culture' or 'ethos' of the organisation at large.

Coding and summarisation of records took a very different shape in Beech Practice. Staff at Beech regarded summarising and coding as low priority activities. Here, most of the summarising was done by a freelance worker who had an informal arrangement of going into the practice on a somewhat *ad hoc* basis to do records summarising. Where electronic summaries had been previously done in other surgeries, these were re-entered into the EPR, code by code

(rather than 'starting over'). The summariser was assisted by a receptionist who 'pruned' paper notes – removing duplicate information for shredding where possible – as she prepared the notes for summarisation and storage. The practice was not using GP2GP transfer or Docman at the time of my research.

Similarly, coding the post at Beech was an unscheduled activity, carried out by secretaries (rather than 'coders'), and described on several occasions as something that they "*fitted round*" other secretarial activities as it was "*not usually urgent*" (e.g. "*it's the thing that gets left*" "*it's something you can pick up and drop*"). Although it was an activity which was often displaced by other more pressing concerns (such as typing referral letters) the secretaries nonetheless felt it was a very responsible task and often asked each other for help in selecting appropriate Read codes ("*I think it's really serious. I mean if I get it wrong it could have serious consequences*"). However, they felt that their lack of clinical knowledge made it difficult (and inappropriate) for them to judge what was relevant for Read coding, and they only coded those items which had been marked for coding by GPs. This meant that they did not (in general) read letters in full and that – on the whole – it was a less time consuming and less complex activity than in Clover.

The secretaries' somewhat ambivalent construction of coding as something which was (on the one hand) very serious / responsible and yet (on the other) also 'low priority', was to some extent shared by the GPs at Beech. Amongst the GPs, no commonly agreed system of 'marking up' letters for coding had ever been reached, though each had established their own conventions. There were two formal discussions amongst GPs (scheduled as agenda items in GP partners' meetings and to which I was invited) about the possibility of introducing a 'coding stamp' for letters. The practice manager had reproduced a template of a coding stamp which another local GP practice was using as a basis for this discussion, and had circulated this beforehand.

As the discussions unfolded it became clear that although there was general agreement that there may be some value in reaching greater consistency in the coding process, the doctors struggled to identify what the main purpose of the

stamp would be, and they acknowledged that standardising behaviour across seven doctors would be difficult to achieve in practice. In the words of one GP: "*it is all right if everyone has the same view of the world*". It was agreed that it was a "*complicated*" matter and that they would be unable to make further progress without involving the "*administrative team*" in the discussion. This issue remained unresolved during my research period, but the way in which the issue was handled aligned with my general observation that whilst it was understood that all GPs worked differently, it was not urgent that an organisational 'fix' be identified. Accepting each others' differences and preserving congenial relationships seemed to be perceived as more important than striving for standardised, uniform approaches. In Beech, the EPR could be seen to present similar challenges and opportunities to those encountered within Clover, but prompted a different range of responses and became differently enacted within this organisational context.

## 8.6 Summary

In this chapter, I have 'zoomed out' from the detailed micro-analysis of the consultation to investigate the EPR in the backstage and to look more broadly at the organisational environment within which the EPR is situated, and to which it contributes. In line with many of the observations I have made throughout this thesis, the EPR can be seen to be active in shaping practices and demanding attention, but it is not deterministic of practices. Two general practices working with the same clinical system and within the same broad socio-historical context have responded very differently to the potential and challenges of the EPR. This can be seen in their general orientation towards new technologies (Clover is 'pro-technology'; Beech is generally more cautious) and can also be seen in the extent to which particular organisational routines embrace the affordances (and constraints) of the EPR. I have discussed this in more detail in a separate publication (Swinglehurst et al 2011).

As I outlined in §8.5.1, my aspiration has not been to suggest causal linkages between the particular practices of clinicians working with the EPR in the consultation and a wider organisational context (in either or both directions).

Instead I wanted to explore the extent to which some of the concepts which are identifiable in the micro may be seen at play at a more macro-organisational level. I have focused in detail on practices around coding and summarising records in the backstage of Clover to explore this possibility.

The simplest, most striking observation in Clover is the extent to which the EPR is 'attended to', or 'cared for' (§8.5.2) throughout the organisation. Just as the EPR can be seen to be a pervasive presence in some consultations and integral to the practice of consulting, so it can be seen to be integral to the organisation of the practice. It may be no coincidence that members of staff refer to this labour-intensive activity of caring for the EPR using anthropomorphic terms such as 'feeding' and 'toileting'. Also striking is the 'taken-for-granted' nature of this attending activity. Embracing the EPR has gone in parallel with a growth in the number of staff whose work is focused entirely on data management, and in tandem with aspirations amongst senior non-clinical staff towards a 'less personal, more uniform' use of space in the building.

In the detailed backstage practices of coding and summarising, the dilemma of attention which I first introduced in §7.8 can be seen to be at work, with coders always keeping in mind two different versions of the patient – the patient as 'person' and the patient as one of a population of patients sharing some characteristic of 'institutional' relevance. The coders often experience tension in trying to balance their sense of informal accountability to individual patients whilst carrying out their role of being formally accountable to the GPs and the organisation. This tension became particularly evident when GPs started to assist with summarising records and were perceived to adopt a less careful, less thorough approach. This became an opportunity for redefining lines of accountability as administrators distanced themselves from what they perceived as the inferior coding practices and ensured that a unique Read code was identified to distinguish doctors' coding from their own. Similar tensions occurred in the coding of incoming post and in the delicate acts of negotiation between coder and GP when disagreements arose over what constituted adequate Read coding of letters.

In the clinical consultation I identified a tendency for the EPR to contribute to asymmetry between clinician and patients by adding institutional 'weight' to the clinical encounter (§7). In the backstage the situation was less clear cut. Here the EPR would *not* appear to contribute to the authority of doctors and might be seen to threaten their authority in favour of a more authoritative position for administrative staff. The EPR provided opportunity for administrators to exercise some creativity in challenging existing hierarchies and asymmetries, as certain aspects of medical decision making were becoming distributed and the work of doctors was more open to scrutiny and surveillance. However, this creative work was difficult and extremely face-threatening and involved a certain amount of risk to 'self' for the coder engaging in it. Nevertheless the potential was there for small moments of interaction around coding practices in the EPR to contribute over time to adjustments in the social hierarchy.

Common to both clinicians in the front stage and administrators in the back-stage was a compelling sense of necessity to attend to the EPR and its demands which I liken to the 'shouldness' or deontic voice of the EPR. There existed a normative assumption amongst both clinicians and administrators that they ought to respond to the demands of the EPR or at least be accountable for not doing so. This orientation was just as likely to surface in administrators elaborating Read codes with lines of free text (when clinicians had specified 'no action') as it was to result in GPs spending time before surgery 'cleaning up' records which had become unduly 'cluttered'.

In §6 and §7 I focused mainly on the contribution of the EPR to the 'interactional regime' between clinicians and patients. In this chapter I have taken a different analytical stance, and have considered instead the contribution of the EPR to the 'organisational regime' by carrying forward some of the conceptual ideas from my detailed micro-analysis and re-working them. I hope I have been able to demonstrate the potential force of the EPR in regimenting interactions in the micro and regimenting organisations in the macro as clinicians, managers, administrators and patients become increasingly 'disciplined' by it (Foucault 1975). The EPR contributes to constituting a complex web of relationships which – were it not for the EPR – might look very different.

# 9   Concluding reflections

*Everything flows and nothing stays.*

*… You can't step twice into the same river.*

<div align="right">Heraclitus c.540 – c.480 BC (Plato, <em>Cratylus</em> 402a)</div>

*Géronte: It seems to me you are locating them wrongly: the heart is on the left and the liver is on the right.*

*Sganarelle: Yes, in the old days that was so, but we have changed all that, and we now practise medicine by a completely new method.*

<div align="right">Molière (from <em>Le Médecin malgré lui</em> 1667 act 2 scene 4)</div>

## 9.1   Introduction

I will begin this final chapter of my thesis with some brief reflection on my roles as GP and ethnographer throughout this project. In a break with convention for a concluding chapter, I will then incorporate some new data – notes I wrote after a day in surgery in November 2011, over two years downstream of my main period of data collection.   I will introduce this to demonstrate the ongoing relevance of my research methods and findings in a rapidly changing NHS landscape. Drawing on my own experience, I will revisit some of the themes introduced in earlier chapters and apply them to a novel situation which arose unexpectedly just as I set about writing my conclusions. I hope this will be a useful illustration of the interplay between my different professional roles as I have pursued this PhD.

I began my thesis by situating my research work in my own professional context (§2.2) and the UK policy context (§2.4) and it seems fitting to return to these contexts as I reflect on the implications of my research findings for clinical practice and policy. Finally, I will make some suggestions of future directions for this work.

### 9.1.1   My experience as a GP and ethnographer

In recent weeks I have become so engrossed in writing my thesis that going into the surgery to do my GP clinics has, at times, felt disorientating. At different times, when my research has taken me into unfamiliar territory, a day in the

surgery has provided a safe and familiar routine (despite its inherent unpredict-ability). The ease with which I have been able to (metaphorically) switch professional hats has varied over the last four years. Snugness of fit has waxed and waned. Despite some storms I have managed to keep hold of both hats and – on the whole – I have seen it as a great advantage to be immersed in both clinical and academic worlds.

However it is hard to escape the irony that I may see over thirty patients at approximately ten minute intervals every Thursday, but may spend a month or more of my research time engaged in the micro-analysis of a single consult-ation. This has been difficult to reconcile at times. The conventional ten minute appointment has become increasingly frustrating as I have become more analytical in my interactions with patients. Equally I have found myself impatient to solve my research questions when only a lengthy period of immersion in the data and literature was ever going to enable me to see the general practice world I know so well in new ways.

Seeing patients as a GP has certainly benefited me in my academic work. It has helped me to keep grounded in practice at times when my reading has taken me into highly theoretical territory. Its fast pace and relatively quick personal rewards have counterbalanced the slow and painstaking progress towards an uncertain finishing line in my research. The suffering that I encounter in the lives of my patients has enabled me to keep a sense of perspective on any concerns I might have had about completing this PhD. Above all my regular contact with patients in a rapidly changing NHS environment has assured me of the relev-ance of my work and the potential of linguistic ethnography as an approach to studying the complex world of general practice.

Without doubt my experience of ethnography and discourse analysis and my changing appreciations of the EPR have also influenced my work as a GP. I have become much more sensitive to the nuance of speech and bodily conduct in the consultation, more reflexively aware of the different kinds of discursive work I am doing as I interact with patients and the EPR, more sceptical of the extent to which the EPR may help me to know what went on in the consultations

recorded within it, and much more aware of the work that goes on in the back stage. Most of all I have become conscious of the extent to which the EPR has changed (and continues to change) our working lives and our patients' experience. Along with new opportunities come new demands. New meanings are brought to the entries we make, as patients' stories morph into data serving a myriad of purposes beyond the 'here and now'.

The hallowed, private, confidential space of the consulting room is no longer bounded by the door and four walls, but is the subject of scrutiny and surveillance from beyond, and a contested space where many different voices articulate (both in the sense of making themselves heard and in the sense of joining together) as the EPR and the infrastructure which supports its use allows traditional physical barriers of time and space to be broken down. This has a profound influence on what it means to be a clinician and a patient in this new environment and on what it means to do 'care'.

## 9.2 Morning surgery, November 2011

In Box 18 are some brief notes that I wrote on my return from surgery. As always, there were a few surprises. This particular day got off to a frustrating start, one which reminded me of the nurse in §6.2 who struggled to go on with her clinic when the clinical system crashed. In the sections that follow I will reflect in more detail on these notes and relate them to some of the observations I have made in earlier chapters.

**Box 18. Morning surgery, November 2011.**

On my arrival in the practice today I found an information leaflet in my pigeon hole about a change to our clinical system. The PCT IT people have installed "ScriptSwitch" – a new piece of prescribing decision support software which integrates with the EMIS-LV clinical system. I skimmed quickly through the pages. With only five minutes before my clinic started I couldn't read it fully, let alone ponder its implications. But I got the main message. When I prescribe a drug and a cheaper alternative exists, I will be prompted with alternative options which are better value for money.

I switched on my computer and put my smart card into the smart card reader as usual. Up popped a message: 'smartcard is blocked'. I tried again. After a third unsuccessful attempt I decided to continue without it. There would be no access to the Choose and Book system today. I sent a brief electronic 'practice note' to the secretary to report it and received a prompt reply telling me she could fix it at lunch time – but only if I could hover around in her office to enter my PIN (personal identification number) when asked for it. It would take ten or fifteen minutes.

I started my surgery. My first patient had come to discuss the result of a knee X-ray requested by one of my colleagues last week. I went through my usual procedure to retrieve the scanned result from the computer, only to be presented with a disconcerting image of a wheel going round and round and a message saying "accessing document". The computer was not responding normally. After several embarrassing minutes and numerous apologies, I explained that I would have to go to the reception area and look it up on a different computer there. I left the patient behind, feeling somewhat guilty and asked a receptionist if I could steal her desk for a minute. I used the 'change user' function to identify myself as the new user of the computer and (after several more minutes) duly found the X-ray result. I returned to my room and continued.

After the patient left, I took the precaution of rebooting my computer – that had often got me out of these technical troubles. Once again I was invited to insert my smartcard (I did) and once again I was advised it was 'blocked'. I called in my next patient, already running fifteen minutes late. Not a great start.

This patient – who was partially sighted and whom I had never met before – had recently visited a consultant nephrologist about his diabetic kidney problems and had come to discuss some advised changes to his medication. He told me the practice should have received a letter about it. A glance at the EPR confirmed that this was the case. Nervously I typed a few keystrokes hoping that my reboot might have solved the problem. No. Same problem; same revolving wheel. Again I apologised and went to reception. The receptionists told me that people from the PCT had been "messing about" with the system yesterday and there

was some speculative muttering about "incompatibility".

Once I had finished my consultation I phoned the secretary to ask if she had any ideas. She told me that no one else was having problems (*Great! Just me then* I thought). It could be fixed, but it would take too long to do it now and it would also have to wait until lunch time. Having not managed 'lunch time' during a surgery day for at least six weeks I didn't fancy my chances today.

Now running about thirty minutes late, a patient with hypertension (high blood pressure) came for a review. His blood pressure was high again (I suspected mine was too). I studied his medication list and suggested introducing an additional drug called felodipine. After a brief discussion about the pros and cons of felodipine I went ahead to prescribe it. Enter ScriptSwitch – just as I was finalising my entry into the EPR. A large window opened in the middle of my screen which I had never seen before, with my chosen prescription on the left and a horizontal arrow pointing to a 'recommended' alternative on the right – a related drug called amlodipine. Amlodipine was cheaper and it told me by how much. At the bottom of the window there were two 'options', amlodipine (which by default had already been selected and now showed in bold) and felodipine (in second place, and in paler font). To the right was a box saying "Accept" (also in bold), and another below (in paler font) reading "Prescribe original".

I hesitated – aware of my prolonged fixation on this unfamiliar screen – and even more aware of our very long silence. I cautiously moved my mouse to 'unselect' the default selection (amlodipine) and switch it back to felodipine, then clicked on the box "Prescribe original" feeling a little smug. Having already explained my suggestion to the patient and having reached his (somewhat reluctant) agreement to add a third blood pressure medication to his list, I did not feel inclined to retrace my steps nor to explain that the PCT would prefer me to prescribe something different to the drug I had just told him about. That would be awkward. Having already delayed this gentleman by 30 minutes this did not seem the right occasion to try.

Three patients in and the EPR was taking its toll on me. I was now very late, had

experienced three significant disruptions to my consultations (two of them involving abandoning patients completely) and had in turn interrupted the receptionist (twice) and the secretary (twice). I felt harassed by all this interference.

At lunch time (of course I didn't *actually* get lunch) I hovered in the secretary's office for ten minutes as requested, while my (not so smart) card was success-fully 'unblocked'. She sorted out my documents problem while I was out doing home visits – by phoning the Docman helpdesk. They took control of my computer desktop remotely to identify and fix the fault.

On my return from home visits, I briefly discussed ScriptSwitch with the practice manager. She advised me that it had been installed in all practices in the PCT and that monthly audit reports detailing ScriptSwitch activity would be sent to the PCT. Staff in the PCT would be keeping an eye on 'acceptances' and 'rejections' and reporting on savings made. My heart sank.

Deborah Swinglehurst, GP, November 2011

### 9.2.1 Stretching the definition of the EPR

One of the early challenges I identified in this thesis is that of defining the EPR (§3.2). Aside from the disciplinary quarrels which might arise from different philosophical assumptions underpinning these definitions (which I discussed in detail in §3.2) the EPR is ever changing. Technical capabilities change over time as do the purposes to which it is put. What might be recognisable as the 'EPR' at one point in time may look quite different at some later point. In my own surgery, aside from many EMIS-LV technical upgrades which have taken place since my research began, the Docman documents managing system has been integrated (as it was in Clover §8.5.3.1) and GP2GP transfer of records is in place. ScriptSwitch is now installed in over 6,500 practices across 138 NHS primary care trusts (UnitedHealth UK 2011). To the EPR-user, ScriptSwitch appears as indistinguishable from any other feature of the EPR (i.e. it looks like an internal feature of the EMIS-LV clinical system). It is marketed by the

company UnitedHealth UK and is embedded within all the major clinical systems, through commercial contracts between UnitedHealth UK and the major UK clinical systems suppliers, including EMIS. The embedded nature of software alongside the interconnectedness of computers in a wider network offers almost limitless opportunities for what the EPR can become, and how far it can reach both within and beyond the consultation.

### 9.2.2 So near and yet so far: the multiple voices of the EPR

I have suggested that the EPR hosts and circulates voices which are consequential to the consultation – although they may remain silent – and that the EPR requires clinicians to orient to multiple and new orders of indexicality (§7.4; §7.5; §7.10; §7.12). ScriptSwitch delivers yet more voices into the consulting room. For example, its messaging can be tailored by PCT prescribing advisers to reflect local priorities.

I suspect most GPs are in broad agreement that it is important to limit spending in the NHS through wise evidence-based prescribing – especially given the scope for profiteering by the pharmaceutical industry in this area. PCT prescribing advisers have visited surgeries periodically for several years. Initially these were relatively informal discussions with GPs about areas where prescribing might be improved; the cost of NHS medicines has always been relevant to these discussions. The role of the prescribing adviser has evolved over time in parallel with the evolution of the EPR. Round table discussions have evolved in recent years towards greater use of (and more stringent) local prescribing incentive schemes. Prescribing advisers then started to conduct data audits in the back offices of GP surgeries, making recommendations by adding entries to the patients' EPR which may (or may not) be read (or acted upon) at the next consultation. With ScriptSwitch now integrated within clinical systems the prescribing advisers have become more distant from – and yet more central to – the interaction, poised to 'interrupt' during the very act of prescribing and ready to make more insistent recommendations than was ever possible before. What began as inter-professional discussion outside the consulting room has evolved into a faceless institutional demand in the heart of

the consultation. The professional responsibility to be mindful of prescribing costs (as one of many professional concerns within prescribing) is shifting towards an institutional activity with a focus on accounting (not only in the sense of 'being accountable to' but also in the sense of 'balancing the books').

I am yet to experience the full functionality of ScriptSwitch, but my brief experience of it gives me a glimpse of its potential force in regimenting practice. As I explained in §2.2 when I introduced my professional context for this work, my enthusiasm for the EPR, which was fuelled by a desire to deliver evidence-based clinical care, became tempered by an unsettling awareness of the additional demands it was placing on my interactions with patients and some ambivalence about the 'bigger picture'. In the context of the impending shift of responsibility for NHS funds towards clinical commissioning groups (§2.4.4) and the spectre of what has been referred to as "rationing in the fiscal ice age" (Klein 2011), I speculate that the arrival of ScriptSwitch may be the first of many 'upgrades' to clinical systems to bring institutional concerns regarding NHS costs head-to-head with the delivery of personal care to patients. This is new moral territory for GPs, and territory which will need to be navigated discursively, in interaction with patients.

From a methodological viewpoint, conceptualising the EPR in terms of hosting and circulating voices – as I have done in my research – leaves open the scope to accommodate its upgrades and its newly embedded functions and keeps us sensitive to its fuzzy and ill-defined boundaries as well as its complex relationship with shifting, wider contexts. As the EPR evolves and becomes increasingly complex, so does the need to study it in ways which encompass this complexity.

### 9.2.3  The importance of context

The notes in Box 18 illustrate the importance of incorporating context in any analysis of the EPR, and also the importance of understanding context not as a pre-established social framework which 'contains' a particular social situation (the 'bucket theory' of context) (Erickson 2004) but as emergent in interaction, constructed through social practice and multilayered. Erickson, in his book *Talk*

*and Social Theory* tells us that the original sense of the Latin from which the word 'context' derives (contexere) means the "*braiding together of strands of textile, as in the making of a rope*", so that to be 'in' a social context is to be engaged in 'doing contexting' (page 155) (Erickson 2004).The exploration of context, or 'contexting' is one of the core commitments of the linguistic ethnography endeavour and something that I have worked hard to achieve throughout this research. The complexity of studying the EPR (rather than the computer) comes about partly *because* in opening up the 'black box' one is compelled to grapple with the complexity of context and contexting (§2.5 and §4.3) (Swinglehurst et al 2011).

In my first encounter with ScriptSwitch, the unfolding of a series of micro situations in my consulting room, and our (the patient's and my) ways of 'going on' in the 'here and now' of the interaction were just as important to me as context understood in a broader sense of socio-political influences. I was unfamiliar with ScriptSwitch, running late, and had just spent time explaining the role of felodipine to the patient (who expressed some reluctance about it), factors which together contributed to my feeling that there was too much at stake for me in the 'here and now' of the interaction to act otherwise. It was too face threatening (§5.1.5) to open up a new conversation with the patient and change direction. It was not the right time (in the *kairos* sense of the word – see page 19). Aside from this, there are other considerations to bring to bear on my prescribing apart from cost. That the PCT might be monitoring my own activity with ScriptSwitch was not one of my considerations at the time. However, this additional information constitutes a changed macro context for any future interactions with ScriptSwitch, and places new obligations on me as prescriber. ScriptSwitch illustrates the way that the EPR is actively shaping contexts, just as it is being implemented to mediate wider socio-political contexts – or to use Erickson's terms it is 'doing contexting' (Erickson 2004).

At a macro level, the PCT's decision to integrate this software has evolved out of numerous previous initiatives to contain spending on NHS prescribing (§9.2.2), coupled with an economic climate that makes this ever more urgent. These provide what Foucault refers to as the "conditions of possibility" for its

introduction (page 127). The impending shift of responsibility for prescribing budgets towards clinical commissioning groups (§2.4.4) is identified on the ScriptSwitch website as a relevant driver for establishing a consistent, integrated 'medicines management strategy' (UnitedHealth UK 2011).

Context is never static and a full appreciation of the interaction (and specifically the social impact of the EPR within it) is difficult to achieve without investigating context explicitly. That the micro context is invisible to anyone who studies the monthly ScriptSwitch audit activity is also important. I argued (in §6) that the representation of the complex chronic disease review as a list of entries in a template does not correspond in any simple way to notions of quality of care – as the QOF might imply (§6). Here, the record of my prescribing is similarly stripped of important context and this makes judgements around the quality of prescribing similarly problematic.

### 9.2.4  The distribution of prescribing and new lines of accountability

The embedding of ScriptSwitch in the EPR contributes to a new distribution of the prescribing decision, with the construction of new lines of accountability between GPs in their consulting room, practice managers and prescribing advisers and other administrators at the PCT (see also §8.5.3.1 and §8.5.4). The advisory role of the prescribing adviser is poised to become more closely aligned with monitoring and surveillance as monthly audits of adherence to the ScriptSwitch recommendations are carried out.

Based on the findings of my own research (§8) I speculate that in the back stage at the PCT, it is likely there is much new work and many different costs involved, including: maintaining and updating of the database that informs ScriptSwitch (the tailoring); IT support; production and analysis of the monthly reports; preparing and delivering feedback to GPs and practices; complex business arrangements between UnitedHealth, EMIS-LV and the procurers of IT services at a local level. I experienced a small opportunity cost in my consultation (but may have experienced a bigger opportunity cost – at least in that *particular* consultation – had I accepted the recommendation). The

cumulative opportunity cost may be substantial (although another piece of research would be required to investigate its detailed impact).

### 9.2.5  The deontic voice

That I have to actively undo the ScriptSwitch recommendations if I do not want to accept them is significant and aligns with my suggestion that the EPR constitutes a deontic voice – silent, insistent, intrusive and actively shaping the consultation by marking out what *should* be done (§7.8; §7.9; §8.5.4). It embodies certain behavioural expectations of me, favouring some actions over others and contributes to constructing new professional hierarchies (§7.11). Whether my decision to reject the prescribing suggestion in this particular instance (Box 18) will silence the voice, or whether I (or one of my GP colleagues) will be interrupted by this suggestion repeatedly on every occasion of prescribing felodipine for this patient is something I will discover in due course. And how I might succeed in attending to ScriptSwitch in the consultation whilst seeking to maintain the involvement (§5.1.1) of my patient is something I have yet to work out.

### 9.2.6  The dilemma of attention

In §7.8 I introduced the notion of the "dilemma of attention" between the patient as an individual and a more institutional version of the patient. Based on a case study of a GP advising a patient against smoking, I pointed out that whilst giving smoking advice is not new to GPs as a professional activity, being *prompted* to do it by an EPR alert changes the nature of the activity and shifts a professional concern towards a more institutional one, demanding new interactional work. I wished to capture the idea that the EPR is bringing new demands on clinicians by fostering a more deliberate need to engage with institutional versions of patienthood and encouraging a shift away from professionalism towards institutional emphasis on evidence and accountability. This shift aligns with a different set of motivations and interests and raises questions about whose interests are being served at any particular moment. I pointed out that the EPR is not necessarily prescriptive of particular courses of action but is encouraging of particular courses of action (§7.10). Arguably when there are potential

sanctions for failing to follow its suggestions, the scope for exercising individual judgement over how to incorporate the EPR is more limited. QOF (§2.4.3) is one well established example. ScriptSwitch may well be another.

Being mindful of prescribing costs is not new to GPs – and is by nature an institutional concern – but having consultations interrupted repeatedly to be advised of prescribing costs is to shift the focus of attention (and to distribute involvement §5.1.1) dramatically and to foreground an 'institutional' version of the patient. It brings – directly into the consultation – a version of the patient as consumer of limited NHS resources and makes new demands for judgements about whether, when and how to attend to its institutional voice. This is a version of the patient that, until my experience last week, I could much more easily keep in the background, or consider when away from my consulting room. It is not simply that attending to the prompt takes more time (which it inevitably does, whether or not the recommendations are accepted). It is not a completely new 'voice' (§5.2.2). But it is a voice with new resonances – new meanings and new consequences. There are many other professional concerns in prescribing, but cost is brought to the foreground.

In §6 I showed how the EPR template contributes to new notions of 'quality' in chronic disease management and to new ways of reasoning about the chronic disease review. My findings point to there being a similar potential for Script-Switch to contribute – over time – to new ways of reasoning about prescribing.

### 9.2.7 Involvement and engagement

ScriptSwitch brings a new institutional pressure into the consultation and this necessarily makes it more difficult to maintain involvement (§5.1.1), defined by Goffman as cognitive and affective engrossment (page 38) (Goffman 1966b)) with the patient. It diverts the balance of attention towards institutional concerns. ScriptSwitch is described as the only technology tool that "*releases savings at the point of prescribing*" and this is advertised as a particular selling point (UnitedHealth UK 2011). Its great advantage, according to UnitedHealth UK is *precisely* that it interrupts the consultation and prompts changes of direction in the midst of it. I am not arguing that we should distance ourselves from the

thorny issue of prescribing costs. In general I welcome initiatives to encourage evidence-based prescribing in practice. However the delivery of this kind of intervention into the consulting room (and I speculate that there will be many more like it to come) is likely to change the nature of the interpersonal interaction in important ways.

### 9.2.8  The regimentation of practice

One of the main observations I have made in my analysis of the EPR in this thesis is the extent to which the EPR is regimenting interactions and regimenting organisations (§6; §7; §8). This notion of 'regimentation' incorporates an orientation towards matters of ownership and control and the production of subjectivities (e.g. new versions of patienthood and new professional habitus – see §6.7 and §6.9), and the idea that macro-discursive systems impose constraints on what people can do and say in particular circumstances (Blommaert 2005b;Blommaert et al 2005) (see §6.1). For example, in §6, I focussed on the practices of nurses using structured electronic templates in the chronic disease clinic to illustrate the role of the EPR in this regimenting. Using such templates contributes to defining what chronic diseases (such as diabetes) are and (by implication) what they are not, as well as placing constraints on how the consultation may progress. In §7.1 I showed that even beyond the structured template (where there is, ostensibly, more flexibility in how the EPR is used) the EPR actively shapes practices, constitutes new lines of accountability and new authorities, and contributes to asymmetry in the consultation.

ScriptSwitch is a new arrival on the scene, but it is not difficult to see its potential for regimenting practice. Not only does it encourage a shift towards perceiving the patient as consumer of resources (§9.2.6) but it places additional constraints on what is possible within the consultation and creates new lines of accountability between the GP as prescriber and the managers of the NHS prescribing budget at the PCT. If a GP actively rejects a recommendation (rejection is an *active* process, since the default is acceptance) this is now

positioned as a deviant act in a scheme which quite explicitly aims to reduce prescribing costs by reducing undesirable variation in prescribing activity.

Meanwhile, it is highly unlikely that cost features amongst the patient's prime concerns about choice of medication. In 18 years as a clinician I cannot recall a single instance of a patient asking me how much their own medicines cost the NHS. The potential conflict of interest between the push for cost containment inscribed in the EPR (on the one hand) in a NHS which emphasises patient 'choice' and shared decision-making (on the other) places significant (and possibly irreconcilable) demands on clinicians and brings a huge pressure to bear on the interpersonal interaction.

## 9.3  Methodological implications of my work

I present my reflections on my consultation in November 2011 to support my suggestion that the novel methodological and theoretical approach I have taken in this research is likely to be transferable to novel versions of the EPR as new software is embedded and new upgrades are incorporated. Many of my research findings can be seen to be relevant to different EPRs, in different contexts, and I hope that my detailed study of the particular (the 'telling case') (Mitchell 1984) has been successful in illuminating practices in ways which are of more general relevance.

My work is original in its methods and also in its analytic approach. The use of parallel video-recordings of interactions and screen capture was something I developed from the 'bottom up', based on my intuitive sense that if I was to gain an understanding of the EPR in the consultation then it was as important to record the EPR as it was to record the interaction. The result was a highly privileged view of the consultation and one which exposed me not only to the minute detail of talk and bodily conduct as it happened, but to the material and textual attributes of the EPR, and importantly, its *connectedness* to time and place beyond the consultation, past and present. I have shown that the combination of ethnography, video and screen capture can be used to gather rich data for researching the interaction with minimal disruption to patients and clinicians.

My research is an original contribution to the emerging field of linguistic ethnography. It is the first study to explore the EPR-in-use in depth with attention both to the particular detail of the interaction and also the broader ethnographic context within which it is situated. It is also the first study to explore, in detail, the EPR as a material presence and textual presence. When I made a commitment to open up the 'black box' of the computer in the consultation (most previous researchers of the consultation have kept this box firmly closed – see §3.7) I had not fully appreciated the complexity that I might be taking on, but it is in this complexity that much of the intrigue lies.

Although my initial interest was in the clinician-patient interaction, the way in which this is connected to other times and spaces compelled me to try to develop an approach to analysis that was sensitive to both the detail of the interaction and to the wider social worlds within which these interactions take place. I have adopted an eclectic approach (§5), drawing on the work of several theorists in different measure, but have found the work of Goffman and Bakhtin particularly helpful in my detailed linguistic analysis (§6 and §7). Their contribution to the sociology of human interaction and the philosophy of language, respectively, spanned a period from the early 1930's to the early 1980's and predated the widespread use of information technology. However I have been able to adapt their works successfully and use selected sensitising concepts (Blumer 1969) to study interaction which incorporates both humans and the EPR in a sociotechnical network. The months of ethnographic observation were invaluable in being able to make sense of the micro within a broader contextual frame. Most importantly I have had a more nuanced view than many researchers have been able to achieve of *what is actually going on with the EPR in practice*, extending into the detail of the consultation and the workings of the back office.

One of the main strengths of my work – the commitment to grappling with the complexity of the EPR and its connectedness – has also been its greatest challenge. Even small sections of interaction have taken many hours to analyse in detail. In my introduction (§1) I highlighted this important paradox (page 14) to which I now return:

1. *The conduct of talk in local social interaction as it occurs in real time is unique, crafted by local social actors for the specific situation of its use in the moment of its uttering, and*

2. *The conduct of talk in local social interaction is profoundly influenced by processes that occur beyond the temporal and spatial horizon of the immediate occasion of interaction*

(page viii) (Erickson 2004).

As I said when I introduced it, this paradox is insoluble (page 14). Researchers often deal with this by 'containing' the paradox, by adopting methods which focus on one or other of its two dimensions (conversation analysis – see §4.4.1 – is an example). Keeping this paradox alive in my work has been difficult, and it is in part as a result of keeping it alive that my assertions about the social impact of the EPR are – necessarily – hedged, conditional and partial.

I talk in terms of the *contribution* that the EPR makes to particular phenomena, of *directions of travel* and of *tendencies.* For example, in §6 I spoke of the *contribution* that the EPR makes to: changing definition of chronic disease; changes in the way that care is delivered; patienthood; professional habitus; bureaucratisation of care practices. In §7 I spoke of the *tendency* of the EPR to encourage a shift towards a privileging of the 'institutional' version of the patient over the patient as 'individual', its *tendency* to sharpen the asymmetry in the interaction. In §6.6 and §8.5.1, I talked about *direction of travel* with respect to the use of electronic templates in the consultation and the changing shape of organisations when the EPR is embraced. The EPR *shapes* but doesn't *make;* it *constrains* but does not *prohibit*; it *makes possible* but does not necessarily *insist*.

To some of my colleagues in general practice (and the medical establishment more generally) the apparent lack of 'hard' outcomes and clear answers may be disappointing. However, the choice of words to define the social impact of the EPR is not simply the result of unwillingness to commit on my part. The more that I have studied the EPR in its full social complexity, the more I have become convinced of the importance of committing to its social impact as being both *profound and yet provisional.* I am drawn to some further words of Erickson:

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*The agency manifested by local social actors in bricolage and improvisation can be employed either counter-hegemonically or hegemonically, regressively or progressively, despicably or admirably. One can swim downstream with the prevailing currents of social structuration and history, treating as limits the constraints one encounters, or one can swim upstream, treating the prestructured constraints as affordances for maneuvering[30] towards ends other than those that are societally approved or expected. The latter course costs more in terms of effort, and it risks punishment. But it is possible*

(page 174) (Erickson 2004).

On each occasion of use of the EPR, there are social actors working through the contingencies of local social situations and this means that there is always room for the EPR to be used creatively – I have included some illustrations of this local creative work in my thesis (§6.8; §6.9; §7.7; §7.11; Box 14). It is in this local creativity that there is room for optimism in what can otherwise appear a rather gloomy picture of technocratic rule.

I would like to suggest that it is in the *conditional* nature of my assertions, or in the *necessity to express caution* that there is much to be learned which is of relevance to professional clinical practice.  The most promising implications of my work for clinical practice relate to fostering new ways of looking at and reflecting upon our social practices with EPRs. There is no one 'best way' of working with EPRs and for this reason I do not feel inclined to draw up 'guidelines for general practice' or a 'how to' guide to using electronic records (these already exist) (Booth et al 2002b;Department of Health et al 2011;Ventres et al 2006). However I believe there is room for greater appreciation of the consultation as an interaction which both clinicians and patients co-construct together, and within which the EPR is an integral part. In the next section I will suggest some implications for practice which I hope may provoke some new ways of thinking and reflecting upon general practice (see also page 280). Some of the messages relate to aspects of my research which I have come to take for granted, but which may require a significant shift in orientation

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[30] Note I have retained the original American spelling

for many of my GP and nursing colleagues who have not had the benefit of researching the EPR for four years.

### 9.3.1 Implications of this research for clinical practice

My intention here is not to re-iterate my research findings in detail but to encourage new perspectives and provoke debate amongst my clinical colleagues. What follows is a series of short statements, each accompanied by a brief explanation. I hope that these statements may challenge some taken-for-granted assumptions that I routinely encounter in general practice about the way that things 'are'.

#### 9.3.1.1 The EPR is not a neutral technological container

The EPR is widely conceptualised as a container, not only amongst clinicians but also in biomedical research. Other scholars have made this point before me, but I hope that my work adds weight to this observation. To regard the EPR as nothing other than a box of information is to disregard its force for shaping practice and to overlook its ideological import. The EPR is not a 'thing' at all, but is a complex discursive construction which sustains the discourses which brought it into being and mediates social relations. It contributes to a range of work apart from – and in addition to – storing data and demands new kinds of work from those who interact with it.

#### 9.3.1.2 The EPR template is not simply an aide-mémoire

The EPR template is usually regarded as an aide-mémoire which ensures that 'everything gets covered' in the chronic disease clinic. It does seem to be effective in prompting particular actions at particular times. For example it may ensure that foot pulses are palpated and blood pressures taken (which are important aspects of the care of a patient with diabetes). Furthermore, it is quite likely that these will be done in the order set out in the template. But the template in the diabetic clinic does not simply identify things which must be done; it comes to define what diabetes care *is* (and by exclusion, what it is not). A more general formulation of this observation is that the EPR template can be seen to do definitional work.

### 9.3.1.3 There is no such thing as a complete template.

The boxes in a template may be filled but this is no guarantee that this is an adequate representation of the patient or of what went on in the clinic. It never will be. The template is where patients' stories morph into bytes of data; the particular becomes generalised; the complex is made discrete, simple and manageable, and uncertainty becomes categorised and contained. This work of transforming stories into data, the particular into the general, and erasing ambiguity is – of itself – complex interactional work. This skilled human work in which the rationality-reality gap (page 128; §6.8) (Berg 1997b;Heeks et al 1999) is bridged is erased from the template, and is work that I suspect is largely unrecognised – even by those who are engaged daily in doing it. It comes at a cost; all patients with a particular chronic disease start to look the same.

Does this matter? One argument goes that as long as the interaction between nurse and patient facilitates the narrative, the particular, the complex and the ambiguous and that this occurs within a therapeutic relationship which supports relational continuity of care, then it may not matter much. My concern is this. My observation of what actually happens in practice (§6) suggests that – more often than not – the nurse will submit to the linear, instrumental logic of the template with its privileging of the biomedical over all else. The chronic disease consultation becomes a bureaucratic transaction in which patients are squeez-ed into an institutional frame (Douglas 1986), involvement is difficult to achieve and sustain (Goffman 1966b), the narrative is marginalised and there are profound constraints on what can be talked about and what the chronic disease review can be. This is *not* a problem with nurses; it is a problem inherent in the template. This can be overcome (and my data suggest that it sometimes is) but this demands exceptional creativity. The design of my study precludes quantifying the extent to which clinicians may or may not overcome the constraints of the template, but has allowed me to observe – in detail – a range of ways in which templates are used.

My findings illustrate that the solution to the problem of the 'complete and yet incomplete' template is most certainly *not* that the template should be longer

(and therefore more 'comprehensive'), for example by creating additional fields to prompt the 'softer' side of chronic disease management. All this would achieve is further submission to the logic of the template. What we need is *thinking, engaged, and involved* (in the Goffmanian sense) clinicians (Goffman 1966b).

### 9.3.1.4 EPR users make choices about whose interests to serve

The extent to which (and the discursive means by which) clinicians attend to the 'institutional' version of the patient or the 'individual' version of the patient as they confront the dilemma of attention is – at least to some extent – a choice. The dilemma is often a *moral* dilemma. The EPR encourages a particular direction of travel, and the march towards regarding the patient as 'one of a population' of patients is gathering pace as the EPR is exploited more widely. This push towards the use of technology to inform population management would appear to be incommensurable with the ideology of patient choice, patient-centredness and patient empowerment (§7.1).

### 9.3.1.5 The consultation is a meeting of many voices

Clinicians and medical educators have traditionally thought of the consultation as a confidential meeting between clinician and patient. Researchers in recent years have suggested the consultation is triadic – a three-way conversation (Booth et al 2002a;Pearce 2007;Pearce et al 2009;Scott et al 1996). It is more complicated than this. The integration of the EPR brings a new meaning to the notion of the consultation. It is no longer bounded by time or space, and the EPR brings many new voices into the consultation. Access to these additional voices by clinician and patient is unequal and makes it more difficult to achieve symmetry in the consultation (§7). Additional voices bring additional interactional work. The clinician needs to work out whether and how to attend to competing voices, and whether and how to make this work explicit to the patient. The patient has a burden of additional interactional work to maintain or retrieve the attention of the clinician when faced with 'outside' competition (which includes different versions of themselves).

The assessment of consulting forms an important component of the compulsory licensing examination for general practice, the MRCGP, in what is called the CSA (Clinical Skills Assessment). This is a simulated surgery involving actors as patients, in which the candidates (doctors completing their GP training) take part in a sequence of ten-minute simulated consultations. My research suggests that to educate (and assess) professionals for consulting without regard to the EPR is to strip away many layers of complexity from the inter-actional challenge (for both clinician and patient). The corollary is also true. I have highlighted many ways in which the EPR may contribute to the interaction. For example, it may become involved in: the moment-by-moment evolution of the consultation; displays of professional identity; face-work; building authority; challenging patients' accounts; working collaboratively with patients. To remove the EPR from the contemporary consultation is to re-shape the interaction significantly, and to change it into something which is very different from day-to-day practice.[31]

### 9.3.1.6 The EPR generates work

Although I have not sought to quantify the time or resources that the EPR demands, my experience of researching the EPR makes me sceptical of any taken-for-granted assumption that the EPR (or a new use of it) will make work more efficient (or cheaper). It may make some kinds of work more efficient, and may shift some kinds of work from one type of professional to another (for example the use of templates has contributed to shifting some kinds of work from doctors to nurses, and some kinds of work from nurses to HCAs) but it is *productive* of new kinds of work which didn't exist before. This includes new work in the back office such as coding, audit and surveillance work, but also includes different kinds of work in the clinical consultation. The new work brings new costs.

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[31] The use of simulated surgeries to assess doctors' consulting raises many other complex pedagogical and professional questions which are beyond the scope of this thesis.

### 9.3.1.7 The EPR may serve as an instrument of social control

Social life is created through the complex interplay between (on the one hand) the actions and interactions of individual agents in their local situations, and (on the other) the influence of wider social structures which shape and constrain what is possible (but may also provide opportunity for local innovation and creativity) (Giddens 1984). It is beyond the scope of my thesis to explore social theory in detail or to fully unpack the mechanisms by which the complex interaction between the individual social actor and wider social structures comes about. However, I suggest that the EPR – through its contribution to the regimenting of interactions and organisations and its insistent deontic voice (which suggests what *ought to be done*, and what *should be the case*) – may be an instrument of social control. It contributes to new norms of behaviour and new hegemonic standards. There is scope for creativity in how it is used, but as Erickson's quote on 'bricolage' and 'improvisation' (see page 268) suggests, to swim 'upstream' and ignore the deontic voice of the EPR may cost in terms of effort, and it risks punishment.

### 9.3.1.8 The most important overarching question to ask when reflecting on the consultation is not "Did I do that well?" but "What did we accomplish there?"

Most GPs are familiar with the concept of 'consultation skills' and various means of evaluating such skills. Conceptualising the consultation as something that one might master through a set of individual skills risks undermining the consultation as a socially constructed interaction between clinician and patient and may fail to address wider influences on the consultation – the EPR is one important example. Taking a social constructionist perspective as I have in this research (§4.2) – in which the consultation is understood to be co-constructed – brings the contribution of the patient into clearer view, and shifts our perspective towards what is being accomplished (or not) through social practices. This encourages a move away from evaluation of the clinician's consulting as a set of skills or competences towards a more analytical orientation and a greater reflective awareness of *what is actually going on in interaction between clinician and patient* (see also §3.6)*.

In this research I have shown that the EPR may have a profound influence on the interaction thorough both its material presence and its text, and that to ignore it is to strip the consultation of much of its context (§9.2.3). I also explained on page 207 that the EPR, like all talk and text, is heteroglossic – its sense is governed as much by context as by text on any occasion of use (Bakhtin 1981b). In other words I have highlighted the extent to which the EPR may be considered as integral to the interaction and not separate from it.

For example, turning to the EPR to seek out a patient's history may (depending on how this is done) accomplish a sense that the EPR as a more authoritative source than the patient (§7.6). A clinician may attribute agency to the EPR as a way of introducing distance between themselves and the delicate question the clinician is asking of the patient (§7.8) or as a way of increasing the persuasiveness of a statement (§7.11). A patient may invoke the EPR as part of a politeness strategy (§7.10) or as part of a challenge (§7.11). Pointing to the EPR screen may be a way of involving and collaborating with the patient (§6.8), but may also have the opposite effect of distancing the patient, depending on the immediate contingencies of the interaction (§7.9). The EPR may be drawn into face-saving strategies (§7.10) and rhetorical displays (by clinicians and – occasionally – patients) (§7.11). It may contribute to defining the scope of a consultation (Table 8), may contribute to closing down patients' narratives (§7.10), or indeed closing down consultations (Table 9). This list is not by any means exhaustive, but draws attention to some of the ways in which the EPR may contribute to consultation, and how the interpretation of its contribution is tied to immediate local contingencies.

This social constructionist orientation to the consultation and the role of the EPR is not one with which most GPs are likely to be familiar. However I suggest that by asking different questions of our consulting we might reach new understandings of what is actually going on in its moment-by-moment evolution and a more sophisticated understanding of what the EPR is and what work it does.

**9.3.1.9 There is a risk that clinicians direct care towards the EPR, rather than towards patients. Even worse, the EPR may become the 'patient'.**

The integration of the EPR in general practice is contributing to a shift away from professional interaction towards an increasing emphasis on institutional practices and accountability. An enormous amount of work is generated both front stage and backstage to care for the EPR and ensure that it is kept tidy, meets quality standards, captures the 'right' data and performs adequately in the face of external scrutiny.  GPs' remuneration depends heavily on how much care goes into this process of data management and it is not surprising that this is a matter which is taken seriously.  If data are missing patients may be called in to fill the gaps (Box 2). If patients have many chronic diseases then each disease becomes a different occasion for gathering data (§6.5). Patients' lives are increasingly represented as packages of particular data items and – in the case of chronic disease management – the general practice's 'need' for data sometimes appears to exceed the patients' need (or wish) for care (page 140).

There is a certain irony that much of the biomedical data which are sought to ensure that quality standards are met appear on the EPR screen as a list of 'Values'. I would like to suggest that in all of this activity of 'caring' for the EPR we must keep re-evaluating our own professional 'values' – and in particular keep in mind whose interests we are serving (§9.3.1.4). Sometimes there is an important difference between 'what counts' and 'what matters'. In contemporary general practice the pressure on clinicians and other primary care workers to attend to what counts is substantial, and this may come at a cost to clinicians, patients and organisations (§6.7; §6.9; §6.10).

**9.3.1.10  Coding the record is not a technical task; it is a social practice**

Converting information about patients into Read codes involves a certain amount of technical 'know how'. Managing the delicate social interactions which accompany this is much more difficult (page 241). In the backstage of general practice, not only are Read codes selected, but professional hierarchies are renegotiated. The EPR brings opportunities for administrators to contribute to

different kinds of medical work, and opportunities to challenge existing professional hierarchies and lines of accountability (§8.5.3.1). However this is emotionally challenging, and balancing informal accountability towards patients alongside formal accountabilities to GPs requires the exercise of shrewd practical judgement (Wagenaar 2004) and much face-saving work (§8.6).

### 9.3.2 Implications of this research for policy

The policy context has undergone significant changes since I embarked on this PhD and the future of the NHS is uncertain. As I write this chapter the NHS Bill (§2.4.4) is making its way through the House of Lords, amid mounting concerns about the 'abolition' of the NHS (Pollock and Price 2011a). The NPfIT (page 27) may have folded but the policy drive for 'better data' and more benchmarking of performance is as high as ever, and the patient's EPR is seen as the enabler of this.

As in the previous section (§9.3.1) I include here some short statements and accompanying explanations. In contrast with my long familiarity with clinical general practice, I am relatively unfamiliar with the world of policymaking, but my research experience prompts me to challenge some taken-for-granted assumptions which I have encountered in policy documents as I have carried out this work. Several of these may be regarded as part of the same problem – the seductive appeal of what Tsoukas calls "information reductionism" (Tsoukas 1997). In information reductionism, it is assumed that all knowledge can be viewed (unproblematically) as objective information, 'out there', divorced from any requirement for interpretation.

### 9.3.2.1 QOF confuses disease management with data management. Further, it confuses disease management with patient care.

To assume that the quality of data recording (or gathering) aligns with the quality of patient care is to commit two logical errors of judgement. The first (and simplest) is that a complex disease (such as diabetes) may be adequately represented by a series of numeric variables. Diabetes, coronary heart disease and other chronic diseases become defined by what can be measured, resulting in an impoverished partial version of the disease (and, more importantly, the

patient). This is not an argument against patients with diabetes having their blood pressure or blood sugar measured regularly – these form an important part of their care – but is an argument against the use of metrics which marginalise other aspects of the care of patient with chronic diseases.

The second, graver error is to fail to realise (as I have shown in §6) that using EPR templates to capture data efficiently does not simply record what was done, but shapes *how* things are done (and is not necessarily efficient). Somewhat paradoxically, the focus on the measurable and recordable tends to marginalise and make more difficult different aspects of care which – as I have argued in §6.10 – may be precisely those aspects which mark out 'quality' care from 'minimum to be expected' care. For example, these include the patient's opportunity to construct their narrative, the clinician's role as witness to the patient's suffering, and the achievement and maintenance of involvement (Goffman 1966b) in the consultation.

### 9.3.2.2 Incentivising clinicians on the basis of quality targets does not necessarily drive up quality of care.

Although incentivising clinicians may well result in better data quality (and increased payments) it should not be assumed that the quality of care has improved as incentives have increased, though it is true that the delivery of care may well have changed. In what has come to be known as Goodhart's law (Goodhart was an economist and adviser to the Bank of England):

> *Once a social indicator or other surrogate measure is made a target for the purpose of conducting social policy, then it will lose the information content that would qualify it to play that role*

<div align="right">(Goodhart 1975).</div>

This links with my statement above in §9.3.1.9. The problem is not just that care is potentially diverted from patient to record. That there are pre-specified targets is also problematic.

Mol argues (in her book *The Logic of Care*) that:

> *… identifying a suitable target value is not a condition for, but a part of, treatment [and that] instead of establishing it before you engage in action, you keep searching for it while you act*

(page 46) (Mol 2008).

### 9.3.2.3 Data cannot be generated 'once and for all'

Underpinning the vision of a technological utopia (Greenhalgh et al 2009) – in which the EPR is the solution to many of the challenges facing the NHS – is the assumption that data can be generated once and transferred seamlessly to many other settings. Not only does this fail to acknowledge the interpretive work and the context which is relevant at the point of generating the data, but it also assumes no need (and no wish) to know about this at the point of making use of the data.

The summarising clerks in Clover were reluctant to use GP2GP transfer as intended and preferred to start over with their summarising, because they did not know the people or the processes behind generating the data, and therefore could not trust the data (page 230). In Beech, summarisers were generally more content to accept summaries generated in other GP surgeries, but this was within an overall organisational context in which the Read coding of the EPR was perceived to be a complicated matter and one not easily amenable to a 'one size fits all' approach (i.e. there was a more general mistrust of the content of the EPR). Although the process of summarisation played out differently (§8.5.5), the recognition of the need for interpretive work – both in the generation of Read codes and in their uptake – was recognised in both practices.

The assumption that data can be generated once and for all rests on another assumption i.e. that clinicians and administrators are content to blindly accept the data that they see in the EPR. My research suggests that this is certainly not the case, but that clinicians and administrators have a much more sophisticated understanding of the crucial importance of context in making sense of the EPR.

## 9.4 Suggestions for future work

To conclude my thesis I offer some suggestions of how my work might be taken forward.

The method that I have used – of recording in parallel both the interaction and the EPR – shows promise for use in future projects on the EPR-in-use. The fact that it is technically low key, acceptable to research participants (both clinicians and patients) and can managed by a single researcher means that is readily applicable to future projects. I hope that future researchers will see merit in researching not only the computer but the 'EPR-in-use'. I will not repeat my justification for this other than to suggest it would no longer seem adequate to regard the computer as nothing other than a 'black box', not least because of the rapid evolution of the EPR and its growing complexity (as illustrated by my recent experience with ScriptSwitch §9.2).

Although I have studied the EPR and the surrounding social practices, the methods and methodological approach that I have adopted (including the use of video and screen capture software) could be used to study a specific module of the EPR in combination with a broader ethnographic approach to investigate one aspect of practice in more detail. For example, a detailed study of the social practices around prescribing (or specifically cost containment strategies in prescribing) might involve recording the use of ScriptSwitch and observing how it is used in the detail of the interaction in the consulting room, observing (and, if possible, recording) the work of receptionists and administrators in the back regions of practice as they engage in repeat prescribing activities, and an ethnographic study of the work carried out at the PCT (or clinical commissioning group) in effecting a 'medicines management strategy'.

It would be interesting to carry out a similar project with greater involvement of the clinicians themselves in the interpretation of their own consulting practices, especially the ways in which they use the EPR in the consulting room. My experience of playing back videos to clinicians was of limited benefit (page 88), but this was at least in part because I had yet to embark on detailed analysis of the data myself and was thus not able to offer any useful prompts for reflection.

It is possible that some of the observations I have included above (§9.3.1) could be developed as prompts for use in this way with greater effect.

Although there is much emphasis on consulting skills in the education and assessment of clinicians, the use of the EPR in the consulting room has received little attention. I hope that I may be able to develop some educational materials for clinicians based on my research findings. As I explained on page 268, I am not suggesting a 'how to' guide, but an approach which might prompt refection on practice and stimulate new ways of looking at consultations and the use of EPRs within consultations (§9.3.1.5 and §9.3.1.8).

One of the limitations of much previous work on the use of the computer in the consulting room is that both the EPR and the consultation are under-theorised. What tends to result is a focus on 'skills' or 'tasks' or the evaluation of clinicians against pre-defined criteria, or against constructs (such as patient-centredness) which are themselves ambiguous and under-developed. By taking a social constructionist approach to the EPR and to the consultation, and conceptualising the EPR as collection of voices, I have been able to bring a richer theoretical understanding. I hope that this may be a useful contribution to social theory and that my work may be further developed by scholars who wish to engage in the complexity of the sociotechnical network.

Finally, I have come to realise that much of the work of using EPRs is 'moral work' and many of the dilemmas that are faced in using them are moral dilemmas. This moral work is in action in organisational decision-making, in the work of the summariser or coder in the back office and in the small moment-by-moment occurrences of the clinical consultation. A more detailed consideration of the moral work of using the EPR is something I feel I could bring to my work with some re-analysis of my data.

## 9.5 And finally

I began this thesis with two quotes to which I will now return. The first was from a 1980 RCGP publication:

*When doctors start to receive computerized records from their colleagues for their newly registered patients, and these records are seen to be complete, comprehensive, presented in a standard format with clearly legible summaries, diagnoses, and treatments, we feel certain that the popularity of the electronic records will snowball.*

*We have one important reservation about this development. We do not know whether direct input to the computer during the consultation will have an effect on doctor/patient communication. Research on this problem is urgently required*

(page 9) Royal College of General Practitioners (RCGP 1980).

I hope my work has succeeded in demonstrating very convincingly that the computer does indeed have a profound effect on doctor / patient communication. This 'effect' is multifaceted, complex and extends not only into the heart of communication but reaches right to the core of what it means to be a clinician, a patient, an administrator or a manager in contemporary general practice.

The second quote was from the work of Marc Berg:

*The medical record is a tool…it does not "represent" the work, but it feeds into it, it structures it in complex ways: it structures communication between healthcare personnel, shapes medical decision-making, and frames relations between personnel and patients.*

(page 297) Marc Berg (Berg 1998)

This quote is one that fascinated me when I first came across it, not least because I did not quite believe it could be true. It is a quote to which I have returned on many occasions as I have done this research, and it has appeared in many presentations of my work. I hope that my research has done Berg justice, not only by confirming that these are indeed wise words, but by illuminating *how* the medical record does what he says it does (and more besides) and what the implications are of this for those of us who are engaged in medical work.

# References

Agar, M. 1985. Institutional discourse. *Text*, 5, (3) 147-168

Agar, M. H. 1980, "The Concept of Fieldwork," *In The Professional Stranger*, Orlando: Academic Press, Inc., pp. 1-20.

Als, A.B. 1997. The desk-top computer as a magic box: patterns of behaviour connected with the desk-top computer: GPs' and patients' perceptions. *Family Practice*, 14, (1) 17-23

Anon 2011. *Oxford Dictionaries. Available from* [http://oxforddictionaries.com/](http://oxforddictionaries.com/) Oxford University Press.

Arborelius, E. & Timpka, T. 1990. General Practitioners' Comments on Video Recorded Consultation as an Aid to Understanding the Doctor-Patient Relationship. *Family Practice*, 7, (2) 84-90

Atkinson, J. M. & Heritage, J. 1984, "Transcript notation," *In Structures of Social Action: Studies in Conversation Analysis*, J. M. Atkinson & J. Heritage, eds., Cambridge: Cambridge University Press, p. ix-xvi.

Bailey, J. 2008. First steps in qualitative data analysis: transcribing. *Family Practice*, 25, 127-131

Bakhtin, M. 1981a, "Discourse in the Novel," *In The Dialogic Imagination: four Essays by M.M.Bakhtin*, M. Holquist, ed., Austin: University of Texas Press, pp. 259-422.

Bakhtin, M. 1981b. *The Dialogic Imagination: Four Essays* Texas, University of Texas Press.

Bakhtin, M. 1986. *Speech genres and other Late Essays* Austin, University of Texas Press.

Balint, E. 1969. The possibilities of patient-centred medicine. *Journal of the Royal College of General Practitioners*, 17, 269-276

Balint, M. 1964. *The Doctor, His Patient and the Illness*, 2nd ed. Edinburgh, Churchill Livingstone.

Balint, M. 1973, "Research in Psychotherapy," *In Six Minutes for the Patient*, E. Balint & J. S. Norell, eds., London: Tavistock Publications Ltd., pp. 1-18.

Barley, S. & Tolbert, P. 1997. Institutionalization and structuration: studying the links between action and institution. *Organization Studies*, 18, (1) 93-117

Berg, M. 1997a, "Getting a Tool to Work," *In Rationalizing Medical Work*, Cambridge, MA: The MIT Press, pp. 79-102.

Berg, M. 1997b. Of Forms, Containers, and the Electronic Medical Record: Some Tools for a Sociology of the Formal. *Science, Technology & Human Values*, 22, (4) 403-433

Berg, M. 2004a, "Health care work and patient care information systems," *In Health Information Management - integrating information technology in health care work*, pp. 45-64.

Berg, M. & Harterink, P. 2004. Embodying the Patient: Records and Bodies in Early 20th-century US Medical Practice. *Body & Society*, 10, (2-3) 13-41

Berg, M. & Winthereik, B. R. 2004, "Waiting for Godot: Episodes from the history of patient records," *In Health Information Management - integrating information technology in health care work*, M. Berg et al., eds., London, New York: Routledge, pp. 11-44.

Berg, M. 1996. Practices of reading and writing: the constitutive role of the patient record in medical work. *Sociology of Health and Illness*, 18, (4) 499-524

Berg, M. 1998. Medical Work and the Computer Based Patient Record: a sociological perspective. *Methods of Information in Medicine*, 37, 294-301

Berg, M. 2004b, "Introduction," *In Health Information Management - Integrating information technology in health care work*, London, New York: Routledge, pp. 1-8.

Berger, J. & Mohr, J. 1967. *A Fortunate Man; the Story of a Country Doctor.* The Penguin Press.

Black, A.D., Car, J., Pagliari, C., Anandan, C., Cresswell, K., Bokun, T., McKinstry, B., Procter, R., Majeed, A., & Sheikh, A. 2011. The Impact of eHealth on the Quality & Safety of Health Care: A Systematic Overview. *PLoS Med*, 8, (1) e1000387

Blomberg, J., Suchman, L., & Trigg, R. 1996. Reflections on a Work-Oriented Design Project. *Human-computer Interaction*, 11, 237-265

Blommaert, J. 2005a, "Choice and Determination," *In Discourse: Key topics in sociolinguistics*, Cambridge: Cambridge University Press, pp. 98-124.

Blommaert, J. 2005b. *Discourse* Cambridge, Cambridge University Press.

Blommaert, J. 2005c, "Language and Inequality," *In Discourse*, Cambridge: Cambridge University Press, pp. 68-97.

Blommaert, J. 2005d, "Text and context," *In Discourse*, Cambridge: Cambridge University Press, pp. 39-67.

Blommaert, J. 2006, "Sociolinguistic scales," *In Working Papers in Urban Language & Literacies, Paper 37*, Institute of Education.

Blommaert, J., Collins, J., & Slembrouck, S. 2005. Polycentricity and interactional regimes in "global neighbourhoods". *Ethnography*, 6, (2) 205-235

Blumer, H. 1969. *Symbolic Interactionism* Berkeley, University of California Press.

Booth, N., Kohannejad, J., & Robinson, P. 2002a, *Information in the consulting room (iiCR). Final Project Report*.

Booth, N., Kohannejad, J., & Robinson, P. 2002b, *Information in the consulting room - training package*, Sowerby Centre for Health Informatics at Newcastle.

Booth, N., Robinson, P., & Kohannejad, J. 2004. Identification of high-quality consultation practice in primary care: the effects of computer use on doctor-patient rapport. *Informatics in Primary Care*, 12, (2) 75-83

Bourdieu, P. 1977. *Outline of a Theory of Practice* Cambridge, Polity.

Bourdieu, P. 1990. *The Logic of Practice* Cambridge, Polity.

Bradshaw-Smith, J.H. 1976. A computer record-keeping system for general practice. *British Medical Journal*, 1, 1395-1397

Brennan, S. 2005. *The NHS IT Project: The Biggest Computer Programme in the World... Ever!* Oxford, Radcliffe Publishing.

Brennan, S. 2007. The biggest computer programme in the world ever! How's it going? *J Inf technol*, 22, (3) 202-211

Bruni, A. 2005. Shadowing software and clinical records: on the ethnography of non-humans and heterogeneous contexts. *Organization*, 12, (3) 357-378

Cameron, D. 2001, "Transcribing spoken discourse," *In Working With Spoken Discourse*, London, Thousand Oaks, New Delhi, Singapore: pp. 31-44.

Campbell, L.M., Sullivan, F., & Murray, T.S. 1995. Videotaping of general practice consultations: effect on patient satisfaction. *British Medical Journal*, 311, 236

Chan, W., Stevenson, M., & McGlade, K. 2008. Do general practitioners change how they use the computer during consultations with a significant psychological component? *International Journal of Medical Informatics*, 77, 534-538

Charles-Jones, H., Latimer, J., & May, C. 2003. Transforming general practice: the redistribution of medical work in primary care. *Sociology of Health and Illness*, 25, (1) 71-92

Charon, R. 2001. Narrative Medicine: Form, Function, and Ethics. *Annals of Internal Medicine*, 134, (1) 83-87

Checkland, K. 2009. Being a good clinician is not enough: doctors as employers and practices as organisations. *British Journal of General Practice*, 59, 565-566

Checkland, K., McDonald, R., & Harrison, S. 2007. Ticking Boxes and Changing the Social World: Data Collection and the New UK General Practice Contract. *Social Policy & Administration*, 41, (7) 693-710

Checkland, K., Harrison, S., & Marshall, M. 2007. Is the metaphor of 'barriers to change' useful in understanding implementation? Evidence from general medical practice. *Journal of Health Services Research Policy*, 12, (2) 95-100

Cicourel, A. V. 1990, "The Integration of Distributed Knowledge in Collaborative Medical Diagnosis," J. Galegher, R. E. Kraut, & C. Egido, eds., Hillsdale, New Jersey: Lawrence Erlbaum Associates, pp. 221-242.

Clayman, S. E. 1992, "Footing in the achievement of neutrality: the case of news-interview discourse," *In Talk at Work: Interaction in institutional settings*, P. Drew & J. Heritage, eds., pp. 163-198.

Cochran, N., Gordon, A.C., & Krause, M.S. 1980. Proactive Records. *Knowledge: Creation, Diffusion, Utilization*, 2, (1) 5-18

Coiera, E. 2003, "The electronic medical record," *In Guide to Health Informatics*, 2nd ed. London: Arnold, pp. 111-123.

Coleman, T. 2000. Using video-recorded consultations for research in primary care: advantages and disadvantages. *Family Practice*, 17, 422-427

Coleman, T. & Manku-Scott, T. 1998. Comparison of video-recorded consultations with those in which patients' consent is withheld. *British Journal of General Practice*, 48, 971-974

Coleman, T. & Murphy, E. 1999. Combining qualitative interviews with video-recorded consultations: gaining insight into GPs' decision-making. *Family Practice*, 16, (2) 173-178

Collins, S., Drew, P., Watt, I., & Entwistle, V. 2005. 'Unilateral' and 'bilateral' practitioner approaches in decisoin-making about treatment. *Social Science & Medicine*, 61, 2611-2627

Connecting for Health 2005. *A guide to the national programme for information technology. Downloadable from http://www.connectingforhealth.nhs.uk/resources/archive/npfit_brochure_apr_05_final.pdf*.

Creese, A. 2008, "Linguistic Ethnography," *In Encyclopedia of Language and Education*, 2nd ed. K. A. King & N. H. Hornberger, eds., New York: Springer Science and Business Media LLC, pp. 229-241.

Czarniawska, B. 2008. *A Theory of Organizing* Cheltenham, Edward Elgar Publishing Limited.

Davidson, E. & Reardon, J. 2005, "Organizing visions for IT healthcare: analysis of discourse surrounding electronic health records," *In Academy of Management Conference*, Honolulu, Hawaii.

de Lusignan 2005. The barriers to clinical coding in general practice: A literature review. *Informatics for Health and Social Care*, 30, (2) 89-97

de Lusignan, S., Kumarapeli, P., Chan, T., Pflug, B., van Vlymen, J., Jones, B., & Freeman, G.K. 2008. The ALFA (Activity Log Files Aggregation) Toolkit: A Method for Precise Observation of the Consultation. *Journal of Medical Internet Research*, 10, (4)

de Lusignan, S., Kumarapeli, P., Debar, S., Kushniruk, A. W., & Pearce, C. Using an Open Source Observational Tool to Measure the Influence of the Doctor's Consulting Style and the Computer System on the Outcomes of the Clinical Consultation, K. P. Adlassnig et al., eds., pp. 1017-1021.

de Lusignan, S., Wells, S.E., Hague, N.J., & Thiru, K. 2003. Managers see the problems associated with coding clinical data as a technical issue whilst clinicians also see cultural barriers. *Methods Inf.Med*, 42, (4) 416-422

Department of Health 1997. *The New NHS: Modern, dependable. Downloadable from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4008869*.

Department of Health 2000. *The NHS Plan: a plan for investment, a plan for reform. Downloadable from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4002960*.

Department of Health 2002a. *Delivering 21st century IT support for the NHS: national strategic programme. Downloadable from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4008227*.

Department of Health 2002b. *Liberating the Talents: Helping primary care trusts and nurses to deliver the NHS Plan. Downloadable from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007473*.

Department of Health 2003. *Investing in general practice: the new general medical services contract. Downloadable from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4071966*.

Department of Health 2005a. *Creating a Patient-led NHS: Delivering the NHS Improvement Plan. Downloadable from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4106506*.

Department of Health 2005b. *Self care - a real choice: Self care support - a practical option. Downloadable from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4100717* London, Department of Health.

Department of Health 2006. *Our health, our care, our say: a new direction for community services. Downloadable from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4127602*.

Department of Health 2010a. *Equity and excellence: Liberating the NHS. Downloadable from http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_117353*.

Department of Health 2010b. *Liberating the NHS: An Information Revolution. Downloadable from http://www.dh.gov.uk/en/Consultations/Liveconsultations/DH_120080*.

Department of Health 2011. *Health and Social Care Bill 2010-2011. Available from http://services.parliament.uk/bills/2010-11/healthandsocialcare.html*.

Department of Health, RCGP, & BMA 2011. *The Good Practice Guidelines for GP electronic patient records v4. Downloadable from: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_125350.pdf*.

Department of Health NHS Executive 1998. *Information for health: an information strategy for the modern NHS 1998-2005. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4002944*.

Donnelly, W.J. 1997. The Language of Medical Case Histories. *Annals of Internal Medicine*, 127, (11) 1045-1048

Donnelly, W.J. & Brauner, D.J. 1992. Why SOAP Is Bad for the Medical Record. *Archives of Internal Medicine*, 152, (3) 481-484

Douglas, M. 1986, "Institutions Do the Classifying," *In How Institutions Think*, New York: Syracuse University Press, pp. 91-109.

Dreyfus, H. & Dreyfus, S.S. 1986. *Mind over Machine: The Power of Human Intuition and Expertise in the Era of the Computer* Blackwell.

Edelsky, C. 1981. Who's got the floor? *Language and Society*, 10, (3) 383-421

Edwards, A. & Elwyn, G. 2009, "Shared decision-making in health care: Achieving evidence-based patient choice," *In Shared decision-making in health care: Achieving evidence-based patient choice*, 2nd ed. A. Edwards & G. Elwyn, eds., Oxford: Oxford University Press, pp. 3-10.

Eliot, T. S. 1950, "Andrew Marvell," *In Selected Essays: New Edition*, New York: Harcourt, pp. 251-263.

Ellingsen, G. & Monteiro, E. 2006. Seamless integration: standardisation across multiple local settings. *Computer Supported Cooperative Work*, 15, (5-6) 443-466

Entwistle, V., Watt, I.S., Gilhooly, K., Bugge, C., Haites, N., & Walker, A. 2004. Assessing patients' participation and quality of decision-making: insights from a study of routine practice in diverse settings. *Patient Education and Counseling*, 55, (1) 105-113

Erickson, F. 1985. *Qualitative Methods in Research on Teaching. Occasional Paper No. 81* Michigan, The Institute for Research on Teaching.

Erickson, F. 2004. *Talk and Social Theory* Cambridge, Polity.

Erickson, F. 2010, "The neglected listener," *In New adventures in language and interaction*, J. Streeck, ed., John Benjamins Publishing Company, pp. 243-256.

Erickson, F. & Shultz, J. 1982a, "Aspects of Social Organisation in Communicative Performance," *In The Counselor as Gatekeeper*, New York, London: Academic Press, pp. 69-98.

Erickson, F. & Shultz, J. 1982b, "Cultural Organization and its Effects on the Social Organization of Performance," *In The Counselor as Gatekeeper*, New York, London: Academic Press, pp. 99-143.

Erickson, F. & Shultz, J. 1982c. *The Counselor as Gatekeeper* New York, London, Academic Press.

Feldman, M.S. 2003. A performative perspective on stability and change in organizational routines. *Industrial and Corporate Change*, 12, (4) 727-752

Feldman, M.S. & Pentland, B.T. 2003. Reconceptualizing Organizational Routines as a Source of Flexibility and Change. *Administrative Science Quarterly*, 48, (1) 94-118

Foucault, M. 1970. *The Order of Things* London, Tavistock/Routledge.

Foucault, M. 1973. *The Birth of the Clinic* London, Tavistock.

Foucault, M. 1975. *Discipline and Punish: The Birth of the Prison* New York, Random House.

Fox, N. 1998. *How to Use Observations in a Research Project* Trent Focus.

Frankel, R., Altschuler, A., George, S., Kinsman, J., Jimison, H., Robertson, N., & Hsu, J. 2005. Effects of Exam-Room Computing on Clinician-Patient Communication. *Journal of General Internal Medicine*, 20, (8) 677-682

Freidson, E. 1970. *Professional Dominance* New York, Atherton Press.

Gabbay, J. & le May, A. 2004. Evidence based guidelines or collectively constructed "mindlines?" Ethnographic study of knowledge management in primary care. *BMJ*, 329, 1013

Garfinkel, H. 1967a, ""Good" organizational reasons for "bad" clinic records," *In Studies in ethnomethodology*, Engelwood Cliffs, NJ: Prentice Hall, pp. 186-207.

Garfinkel, H. 1967b. *Studies in ethnomethodology* Engelwood Cliffs, NJ, Prentice Hall.

Garfinkel, H. 1967c, "What is ethnomethodology?," *In Studies in ethnomethodology*, Engelwood Cliffs, NJ: Prentice Hall, pp. 1-34.

Geertz, C. 1973, "Thick Description: Toward an Interpretive Theory of Culture," *In The Interpretation of Cultures*, New York: Basic Books, pp. 3-30.

General Practitioners Committee 2009. *Quality and Outcomes Framework. Guidance - Updated August 2004. Downloadable from http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4088693.pdf*.

Gibson, M., Jenkings, K.N., Wilson, R., & Purves, I. 2005. Multi-tasking in practice: Coordinated activities in the computer supported doctor-patient consultation. *International Journal of Medical Informatics*, 74, 425-436

Giddens, A. 1984. *The Constitution of Society: Outline of a Theory of Structuration* Cambridge UK, Polity Press.

GMC 2002. *Making and using visual and audio recordings of patients - guidance for doctors. Available from http://www.gmc-uk.org/guidance/ethical_guidance/making_audiovisual.asp#Recordings*.

GMC 2009. *Tomorrow's Doctors: Outcomes and standards for undergraduate medical education* London.

GMC 2011a. *Good Medical Practice. Available from http://www.gmc-uk.org/guidance/good_medical_practice.asp* http://www.gmc-uk.org/guidance/good_medical_practice.asp.

GMC 2011b. *Good Medical Practice: Duties of a doctor. Available from* [http://www.gmc-uk.org/guidance/good_medical_practice/duties_of_a_doctor.asp](http://www.gmc-uk.org/guidance/good_medical_practice/duties_of_a_doctor.asp).

Goffman, E. 1955. On face-work: an analysis of ritual elements in social interaction. *Psychiatry: Journal of Interpersonal Relations*, 18, (3) 213-231

Goffman, E. 1959a, "Regions and Region Behaviour," *In The Presentation of Self in Everyday Life,* London: Penguin Books, pp. 109-140.

Goffman, E. 1959b. *The Presentation of Self in Everyday Life* London, Penguin Books.

Goffman, E. 1966a, "Introductory Definitions," *In Behavior in Public Places*, New York: The Free Press, pp. 13-30.

Goffman, E. 1966b, "Involvement," *In Behavior in Public Places*, New York: The Free Press, pp. 33-42.

Goffman, E. 1967, "On Face-work," *In Interaction Ritual: essays on face-to-face behaviour*, New York: Pantheon Books, pp. 5-45.

Goffman, E. 1974. *Frame Analysis: An Essay on the Organization of Experience* York, Penns, Northeastern University Press.

Goffman, E. 1981a, "Footing," *In Forms of Talk*, Philadelphia: University of Pennsylvania Press, pp. 124-159.

Goffman, E. 1981b, "Replies and Responses," *In Forms of Talk*, Philadelphia: University of Pennsylvania Press, pp. 5-77.

Goffman, E. 1983. The Interaction Order. *American Sociological Review*, 48, (1) 1-17

Goodhart, C.A.E. 1975. Monetary Relationships: A View from Threadneedle Street. *Papers in Monetary Economics 1.Reserve Bank of Australia*

Goodwin, C. 1981. *Conversational Organization: Interaction between speakers and hearers* New York, London, Academic Press.

Goodwin, C. 1994. Professional Vision. *American Anthropologist*, 96, (3) 606-633

Goodwin, C. 2007, "Interactive Footing," *In Reporting Talk*, E. Holt & R. Clift, eds., Cambridge: Cambridge University Press, pp. 16-46.

Greatbatch, D. 1992, *System Use and Interpersonal Communication in the General Practice Consultation: Preliminary Observations*, Rank Xerox Research Centre, Cambridge.

Greatbatch, D. 2006, "Prescriptions and Prescribing: coordinating talk- and text-based activities," Cambridge, New York: Cambridge University Press, pp. 313-339.

Greatbatch, D., Heath, C., Campion, P., & Luff, P. 1995. How do desk-top computers affect the doctor-patient interaction? *Family Practice*, 12, 32-36

Greatbatch, D., Luff, P., Heath, C., & Campion, P. 1993. Interpersonal communication and human-computer interaction: an examination of the use of computers in medical consultations. *Interacting with Computers*, 5, (2) 193-216

Green, J. & Thorogood, N. 2004a, "Observational Methods," *In Qualitative Methods for Health Research*, London, Thousand Oaks, New Delhi: Sage Publications, pp. 131-154.

Green, J. & Thorogood, N. 2004b, "Qualitative Methodology and Health Research," *In Qualitative Methods for Health Research*, London, Thousand Oaks, Delhi: Sage Publications, pp. 3-26.

Greenhalgh, T., Potts, H.W.W., Wong, G., Bark, P., & Swinglehurst, D. 2009. Tensions and Paradoxes in Electronic Patient Record Research: A Systematic Literature Review Using the Meta-narrative Method. *The Milbank Quarterly*, 87, (4) 729-788

Greenhalgh, T. & Swinglehurst, D. 2011. Studying technology use as social practice: the untapped potential of ethnography. *BMC Medicine*, 9, 45

Greenhalgh, T. & Hurwitz, B. 1999. Why study narrative? *BMJ*, 318, 48-50

Gumperz, J. J. 1982, "Contextualising conventions," *In Discourse Strategies*, J. J. Gumperz, ed., Cambridge: Cambridge University Press, pp. 130-152.

Gumperz, J. J. 1992, "Contextualisation and understanding," *In Rethinking Context*, A. Duranti & C. Goodwin, eds., Cambridge University Press, pp. 229-252.

Gumperz, J. J. 1999, "On interactional sociolinguistic method," *In Talk, Work and Institutional Order*, S. Sarangi & C. Roberts, eds., Berlin: Mouton de Gruyter, pp. 453-471.

Guthrie, B., Saultz, J.W., Freeman, G.K., & Haggerty, L. 2008. Continuity of care matters. *BMJ*, 337, a867

Haggerty, J.L., Reid, R.J., Freeman, G.K., Starfield, B.H., Adair, C.E., & McKendry, R. 2003. Continuity of care: a multidisciplinary review. *BMJ*, 327, 1219-1221

Hak, T. 1994. The interactional form of professional dominance. *Sociology of Health and Illness*, 16, (4) 469-488

Hall, S. 2001, "Foucault: Power, Knowledge and Discourse," *In Discourse Theory and Practice*, M. Wetherell, S. Taylor, & S. Yates, eds., London: Sage Publications, pp. 72-81.

Ham, C. 2010. The ten characteristics of the high-performing chronic care system. *Health Economics, Policy and Law*, 5, 71-90

Hammersley, M. & Atkinson, P. 1995a, "Access," *In Ethnography: principles in practice*, 2nd ed. London, New York: Routledge, pp. 54-79.

Hammersley, M. & Atkinson, P. 1995b, "What is ethnography?," *In Ethnography: principles in practice* , 2nd ed. London, New York: Routledge, pp. 1-22.

Harré, R. 2002. Material Objects in Social Worlds. *Theory, Culture & Society*, 19, (5-6) 23-33

Harrison, S. 2002. New Labour, Modernisation and the Medical Labour Process. *Journal of Social Policy*, 31, (3) 465-485

Heath, C. 1982. Preserving the consultation: medical record cards and professional conduct. *Sociology of Health and Illness*, 4, (1) 56-74

Heath, C. 1984. Participation in the medical consultation: the coordination of verbal and nonverbal behaviour between the doctor and patient. *Sociology of Health and Illness*, 6, (3) 311-338

Heath, C. 1986, "Postscript: the use of medical records and computers during the consultation," *In Body movement and speech in medical interaction*, Cambridge: Cambridge University Press, pp. 153-173.

Heath, C. & Hindmarsh, J. 2002, "Analysing interaction: Video, ethnography and situated conduct," *In Qualitative Research in Action*, T. May, ed., London, Thousand Oaks, New Delhi: Sage Publications, pp. 99-121.

Heath, C. & Luff, P. 2000a, "Documents and professional practice: "bad" organisational reasons for "good" clinical records," *In Technology in Action*, Cambridge: Cambridge University Press, pp. 31-60.

Heath, C. & Luff, P. 2000b. Technology and social interaction: the emergence of 'workplace studies'. *British Journal of Sociology*, 51, (2) 299-320

Heath, C., Luff, P., & Sanchez Svensson, M. 2003. Technology and medical practice. *Sociology of Health and Illness*, 25, 75-96

Heath, C., Luff, P., & Sanchez Svensson, M. 2007. Video and qualitative research: analysing medical practice and interaction. *Medical Education*, 41, (1) 109-116

Heath, I. 1995. *The Mystery of General Practice* Nuffield Provincial Hospitals Trust, London.

Heeks, R., Mundy, D., & Salazar, A. 1999, *Why Health Care Information Systems Succeed or Fail*, Institute for Development Policy and Management, University of Manchester, 9.

Heller, M. 2007. Distributed knowledge, distributed power: A sociolinguistics of structuration. *Text and Talk*, 27, (5-6) 633-653

Heritage, J. 2001, "Goffman, Garfinkel and Conversation Analysis," *In Discourse Theory and Practice*, M. Wetherell, S. Taylor, & S. Yates, eds., London: Sage Publications, pp. 47-56.

Heritage, J. 2005, "Conversation Analysis and Institutional Talk," *In Handbook of Language and Social Interaction*, K. L. Fitch & R. E. Sanders, eds., Mahwah, New Jersey: Lawrence Erlbaum Associates, pp. 103-147.

Herzmark, G., Brownbridge, G., Fitter, M., & Evans, A. 1984. Consultation use of a computer by general practitioners. *Journal of the Royal College of General Practitioners*, 34, 649-654

Howe, A. 1997. Refusal of video recording: what factors may influence patient consent? *Family Practice*, 14, 233-237

Iedema, R. 2003. The medical record as organizing discourse. *Document Design*, 4, (1) 64-84

Jewitt, C. 2006, "Towards a multimodal analysis," *In Technology, literacy and learning: a multimodal approach*, Abingdon: Routledge, pp. 32-52.

Jewitt, C. 2008, "Multimodal discourses across the curriculum," *In Encyclopaedia of Language and Education*, 2nd ed. vol. 3 M. Martin-Jones, A. M. de Mejia, & N. H. Hornberger, eds., Springer Science + Business Media LLC.

Klein, H.K. & Myers, M.D. 1999. A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*, 23, (1) 67-93

Klein, R. 2011. Rationing in the fiscal ice age. *Health Economics, Policy and Law*, 5, (4) 389-396

Kress, G. 2001, "From Saussure to Critical Sociolinguistics: The Turn Towards a Social View of Language," *In Discourse Theory and Practice*, M. Wetherell, S. Taylor, & S. Yates, eds., London: Sage Publications, pp. 29-38.

Kress, G., Jewitt, C., Bourne, J., Franks, A., Hardcastle, J., Jones, K., & Reid, E. 2005, "Introduction," *In English in Urban Classrooms: A Multimodal Perspective on Teaching and Learning*, Abingdon, New York: RoutledgeFalmer, pp. 1-12.

Kress, G. & van Leeuwen, T. 2001, "Issues for the multimodal agenda," *In Multimodal Discourse: the modes and media of contemporary communication*, London: Hodder Arnold, pp. 111-133.

Kuhn, T.S. 1962. *The Structure of Scientific Revolutions* Chicago, University of Chicago Press.

Kurtz, S. & Silverman, J. 1996. The Calgary-Cambridge referenced observation guides: an aid to defining the curriculum and organising the teaching in communication training programmes. *Medical Education*, 30, 83-89

Latour, B. 1992. *Reassembling the social: an introduction to actor-network-theory* Oxford, Oxford University Press.

Lave, J. 1988. *Cognitions in practice: mind, mathematics, and culture in everyday life* Cambridge, New York, Cambridge University Press.

Lave, J. & Wenger, E. 1991. *Situated learning: Legitimate peripheral participation* Cambridge, Cambridge University Press.

Lee, D. 1987. The semantics of *Just*. *Journal of Pragmatics*, 11, (3) 377-398

Lévi-Strauss, C. 1962. *La Pensée Sauvage* Paris, Plon.

Linell, P. 1998. Discourse across boundaries: on recontextualisations and blending of voices in professional discourse. *Text*, 18, (2) 143-157

Luff, P., Heath, C., & Greatbatch, D. Tasks-in-interaction: paper and screen based documentation in collaborative activity, CSCW 92 Proceedings.

MacLure, M. 2003. *Discourse in educational and social research* London, Sage.

Majeed, A., Car, J., & Sheikh, A. 2008. Accuracy and completeness of electronic patient records in primary care. *Family Practice*, 25, (4) 213-214

Mangin, D. & Toop, L. 2007. The Quality and Outcomes Framework: what have you done to yourselves? *British Journal of General Practice*, 57, 435-437

Margalit, R.S., Roter, D., Dunevant, M.A., Larson, S., & Reis, S. 2006. Electronic medical record use and physician-patient communication: An observational study of Israeli primary care encounters. *Patient Education and Counseling*, 61, (1) 134-141

Maton, K. 2008, "Habitus," *In Pierre Bourdieu: Key Concepts*, M. Grenfell, ed., Durham: Acumen Publishing Limited, pp. 49-65.

May, C., Rapley, T., Moreira, T., Finch, T., & Heaven, B. 2006. Technogovernance: Evidence, subjectivity, and the clinical encounter in primary care medicine. *Social Science & Medicine*, 62, 1022-1030

Maybin, J. 2001, "Language, Struggle and Voice: The Bakhtin/Vološinov Writings," *In Discourse Theory and Practice*, M. Wetherell, S. Taylor, & S. Yates, eds., London: Sage Publications, pp. 64-71.

Maynard, D. 1991. Interaction and Asymmetry in Clinical Discourse. *American Journal of Sociology*, 97, 448-495

McDonald, R., Harrison, S., Checkland, K., Campbell, S.M., & Roland, M. 2007. Impact of financial incentives on clinical autonomy and internal motivation in primary care: ethnographic study. *BMJ*, 334, 1357

Mead, N. & Bower, P. 2000. Patient-centredness: a conceptual framework and review of the empirical literature. *Social Science & Medicine*, 51, (7) 1087-1110

Mishler, E.G. 1984. *The Discourse of Medicine: Dialectics of Medical Interviews* Norwood, NJ, Ablex.

Mitchell, J. 1984, "Producing data: Case studies," *In Ethnographic Research: A Guide to General Conduct*, R. Ellen, ed., London: Academic Press, pp. 237-241.

Mol, A. 2008. *The Logic of Care* London, New York, Routledge.

Monteiro, E. & Hepsø 2002. Purity and Danger of an Information Infrastructure. *Systemic Practice and Action Research*, 15, (2) 145-167

Morrow, J.B., Dobbie, A.E., Jenkins, C., Long, R., Mihalic, A., & Wagner, J. 2009. First-year Medical Students Can Demonstrate EHR-specific Communication Skills: A Control-group Study. *Family Medicine*, 41, (1) 28-33

National Institute for Clinical Excellence & Commission for Health Improvement 2002. *Principles for Best Practice in Clinical Audit* Abingdon, Radcliffe Medical Press.

NHS 2009. *NHS Choices - your health, your choices. Available at http://www.nhs.uk/Pages/HomePage.aspx*.

NHS - The Information Centre 2009. *Quality and Outcomes Framework: online GP practice results database. http://www.qof.ic.nhs.uk/*.

NHS Connecting for Health 2010a. *GP2GP. Available at http://www.connectingforhealth.nhs.uk/systemsandservices/gpsupport/gp2gp*.

NHS Connecting for Health 2010b. *What is QMAS? Available at http://www.connectingforhealth.nhs.uk/systemsandservices/gpsupport/qmas*.

NHS Employers & General Practitioners Committee 2008. *Quality and Outcomes Framework guidance for GMS contract 2008/09*.

Nolte, E., Knai, C., & McKee, M. 2008, "Managing chronic conditions: An introduction to the experience in eight countries," *In Managing chronic conditions*, E. Nolte, C. Knai, & M. McKee, eds., European Observatory on Health Systems and Policies, pp. 1-14.

Ochs, E. 1999, "Transcription as Theory," *In The Discourse Reader*, A. Jaworski & N. Coupland, eds., London, New York: Routledge, pp. 167-182.

Orlikowski, W.J. 2002. Knowing in Practice: Enacting a collective capability in distributed organizing. *Organization Science*, 13, (3) 249-273

Orlikowski, W.J. & Iacono, C.S. 2001. Research commentary: Desperately seeking the "IT" in IT research - A call to theorizing the IT artifact. *Information Systems Research*, 12, (2) 121-134

Ormrod, S. 2003. Organisational culture in health services policy and research: 'third way' political fad or policy development? *Policy & Politics*, 31, (2) 227-237

Østerlund, C. 2002. *Documenting Dreams: Patient-Centred Records versus Practice-Centred Records.* Doctor of Philosophy in Management Massachusetts Institute of Technology.

Østerlund, C. 2004. Mapping medical work: documenting practices across multiple medical settings. *Journal of the Center for Information Studies*, 5, 35-43

Pearce, C. 2007. *Doctors, Patients and Computers, the New Consultation. PhD Thesis.* Department of General Practice, The University of Melbourne.

Pearce, C., Dwan, K., Arnold, M., Phillips, C., & Trumble, S. 2009. Doctor, patient and computer - a framework for the new consultation. *International Journal of Medical Informatics*, 78, 32-38

Pearce, C., Walker, H., & O'Shea, C. 2008. A visual study of computers on doctors' desks. *Informatics in Primary Care*, 16, (2) 111-117

Pearce, C., Trumble, S., Arnold, M., Dwan, K., & Phillips, C. 2008. Computers in the new consultation: within the first minute. *Family Practice*, 25, (3) 202-208

Peedell, C. 2011. Further privatisation is inevitable under the proposed NHS reforms. *BMJ*, 342, d2996

Pentland, B.T. & Feldman, M.S. 2005. Organizational routines as a unit of analysis. *Industrial and Corporate Change*, 14, (5) 793-815

Peräkylä, A. 1998. Authority and Accountability: The Delivery of Diagnosis in Primary Health Care. *Social Psychology Quarterly*, 61, (4) 301-320

Peräkylä, A. 2002. Agency and Authority: Extended Responses to Diagnostic Statements in Primary Care Encounters. *Research on Language and Social Interaction*, 35, (2) 219-247

Philip, K. 2011. Seeing people in their own clothes. *Student BMJ*, 19, d3338

Pilnick, A. & Dingwall, R. 2011. On the remarkable persistence of asymmetry in doctor/patient interaction: A critical review. *Social Science & Medicine*, 72, 1374-1382

Pink, S. 2007a. *Doing Visual Ethnography*, 2nd ed. London, Thousand Oaks, New Delhi, Sage Publications.

Pink, S. 2007b, "Planning and Practising "Visual Methods"," *In Doing Visual Ethnography*, London, Thousand Oaks, New Delhi: Sage Publications, pp. 40-62.

Polanyi, M. 1958a. *Personal Knowledge* Chicago, University of Chicago Press.

Polanyi, M. 1958b, "Skills," *In Personal Knowledge*, Chicago: The University of Chicago Press, pp. 49-65.

Pollock, A. & Price, D. 2011a. *The abolition of the NHS. That's what is happening. Available at http://www.opendemocracy.net/ourkingdom/allyson-pollock-david-price/abolition-of-nhs-that%E2%80%99s-what-is-happening-0#disqus_thread*.

Pollock, A.M. & Price, D. 2011b. How the secretary of state for health proposes to abolish the NHS in England. *BMJ*, 342, d1695

Pope, C., Ziebland, S., & Mays, N. 2000. Analysing qualitative data. *BMJ*, 320, 114-116

Pope, C. 2005. Conducting ethnography in medical settings. *Medical Education*, 39, 1180-1187

Pope, C. & Mays, N. 2009. Critical reflections on the rise of qualitative research. *BMJ*, 339, b3425 available from: http://www.bmj.com

Pringle, M. & Stewart-Evans, C. 1990. Does awareness of being video recorded affect doctors' consultation behaviour? *British Journal of General Practice*, 40, 455-458

Rampton, B. 2007. *Linguistic ethnography and the study of identities. Downloadable from http://www.kcl.ac.uk/innovation/groups/ldc/publications/workingpapers/43.pdf* King's College London.

Rampton, B., Tusting, K., Maybin, J., Barwell, R., Creese, A., & Lytra, V. 2004. *UK Linguistic Ethnography: A discussion paper. Downloadable from* [http://www.ling-ethnog.org.uk/documents/papers/ramptonetal2004.pdf](http://www.ling-ethnog.org.uk/documents/papers/ramptonetal2004.pdf).

RCGP 1980. *Computers in Primary Care: Report of the Computer Working Party. Occasional Paper 13.* The Journal of the Royal College of General Practitioners.

RCGP 2005. *Information Management and Technology in General Practice: RCGP Information Sheet No.7*.

RCGP 2007. *Being a General Practitioner: curriculum statement 1. Version 1.2. Downloadable from* [http://www.rcgp-curriculum.org.uk/PDF/curr_1_Curriculum_Statement_Being_a_GP.pdf](http://www.rcgp-curriculum.org.uk/PDF/curr_1_Curriculum_Statement_Being_a_GP.pdf) London, RCGP.

RCGP 2011. *Information Management and Technology: Royal College of General Practitioners Curriculum Statement 4.2. Downloadable from* [http://www.rcgp-curriculum.org.uk/PDF/curr_4_2_IMT.pdf](http://www.rcgp-curriculum.org.uk/PDF/curr_4_2_IMT.pdf).

Researcher Development Initiative 2011. *Ethnography, Language and Communication. Available from* [http://elc.ioe.ac.uk/](http://elc.ioe.ac.uk/).

Rhodes, P., Langdon, M., Rowley, E., Wright, J., & Small, N. 2006. What Does the Use of a Computerized Checklist Mean for Patient-Centred Care? The Example of a Routine Diabetes Review. *Qualitative Health Research*, 16, (3) 353-376

Rhodes, P., Small, N., Rowley, E., Langdon, M., Ariss, S., & Wright, J. 2008. Electronic Medical Records in Diabetes Consultations: Participants' Gaze as an Interactional Resource. *Qualitative Health Research*, 18, (9) 1247-1263

Roberts, C. 1997. The Politics of Transcription. *TESOL Quarterly*, 31, (1) 167-172

Roberts, C. & Campbell, S. 2005. Fitting stories into boxes: rhetorical and textual constraints on candidates' performances in British job interviews. *Journal of Applied Linguistics*, 2, (1) 45-73

Roberts, C. & Sarangi, S. 2005. Theme-oriented discourse analysis of medical encounters. *Medical Education*, 39, 632-640

Roberts, C., Wass, V., Jones, R., Sarangi, S., & Gillett, A. 2003. A discourse analysis study of "good" and "poor" communication in an OSCE: a proposed new framework for teaching students. *Medical Education*, 37, (3) 192-201

Roberts, D., Sarangi, S., Southgate, L., Wakeford, R., & Wass, V. 2000. Oral examination - equal opportunities, ethnicity, and fairness in the MRCGP. *BMJ*, 320, 370-375

Robinson, J.D. 1998. Getting Down to Business: Talk, Gaze and Body Orientation during Openings of Doctor-Patient Consultations. *Human Communication Research*, 25, (1) 97-123

Rose, N. 1999. *Powers of Freedom: Reframing Political Thought* Cambridge, Cambridge University Press.

Roter, D. & Larson, S. 2002. The Roter interaction analysis system (RIAS): utility and flexibility for analysis of medical interactions. *Patient Education and Counseling*, 46, (4) 243-251

Ruusuvuori, J. 2001. Looking means listening: coordinating displays of engagement in doctor-patient interaction. *Social Science & Medicine*, 52, (7) 1093-1108

Ryle, G. 1949, "Knowing how and knowing that," *In The Concept of Mind*, New York: Barnes and Noble Inc., pp. 25-61.

Sacks, H., Schegloff, E.A., & Jefferson, G. 1974. A simplest systematics for the organization of turn-taking for conversation. *Language*, 50, 696-735

Safran, C. & Goldberg, H. 2000. Electronic patient records and the impact of the Internet. *International Journal of Medical Informatics*, 60, (2) 77-83

Sarangi, S. & Roberts, C. 1999, "The dynamics of interactional and institutional orders in work-related settings," *In Talk, Work and Institutional Order*, S. Sarangi & C. Roberts, eds., Berlin, New York: Mouton de Gruyter, pp. 1-57.

Sarangi, S. & Slembrouck, S. 1996, "The pragmatics of information exchange in bureaucratic discourse," *In Language, Bureaucracy & Social Control*, S. Sarangi & S. Slembrouck, eds., Harlow: Addison Wesley Longman Limited, pp. 17-35.

Savage, J. 2000. Ethnography and health care. *BMJ*, 321, 1400-1402

Scally, G. & Donaldson, L.J. 1998. Looking forward: Clinical governance and the drive for quality improvement in the new NHS in England. *BMJ*, 317, 61-65

Scambler, G. & Britten, N. 2001, "System, lifeworld, and doctor-patient interaction," *In Habermas, critical theory and health*, G. Scambler, ed., Routledge.

Schegloff, E. A. 1972, "Notes on a conversational practice: formulating place," D. Sudnow, ed., New York: Free Press.

Schegloff, E. A. 1992, "In another context," *In Rethinking Context*, A. Duranti & C. Goodwin, eds., Cambridge: Cambridge University Press.

Schön, D. A. 1983a, "From Technical Rationality to Reflection-in-Action,".

Schön, D.A. 1983b. *The Reflective Practitioner: How professionals think in action.* New York, Basic Books Inc.

Scott, D. & Purves, I. 1996. Triadic relationship between doctor, computer and patient. *Interacting with Computers*, 8, (4) 347-363

Shachak, A. & Reis, S. 2009. The impact of electronic medical records on patient-doctor communication during consultation: a narrative literature review. *Journal of Evaluation in Clinical Practice*, 15, (4) 641-649

Shaw, S. & Bailey, J. 2009. Discourse analysis: what is it and why is it relevant to family practice? *Family Practice*, 26, (5) 413-419

Sherzer, J. 1987. A Discourse-Centred Approach to Language and Culture. *American Anthropologist*, 89, (2) 295-309

Silverman, D. 1999, "Warriors or collaborators: Reworking methodological controversies in the study of institutional interaction," *In Talk, Work and Institutional Order*, S. Sarangi & C. Roberts, eds., Berlin, New York: Mouton de Gruyter, pp. 401-425.

Singh, D. & Ham, C. 2006. *Improving care for people with long term conditions A review of UK and international management frameworks* Birmingham, NHS Institute for Innovation and Improvement; University of Birmingham.

Stake, R. E. 2005, "Qualitative Case Studies," *In The Sage Handbook of Qualitative Research*, 3rd ed. N. K. Denzin & Y. S. Lincoln, eds., Sage Publications, Inc, pp. 443-466.

Star, S.L. 1995. *Ecologies of Knowledge* Albany, State University of New York Press.

Stewart, M. 2001. Towards a global definition of patient entred care. *BMJ*, 322, 444-445

Stones, R. 2005. *Structuration theory* Basingstoke, Palgrave Macmillan.

Stott, N.C.H. & Davis, R.H. 1979. The Exceptional Potential in each Primary Care Consultation. *Journal of the Royal College of General Practitioners*, 29, 201-205

Suchman, L. 1995. Making Work Visible. *Communications of the ACM*, 38, (9) 56-64

Sullivan, F. 1995. Intruders in the consultation. *Family Practice*, 12, (1) 66-69

Swinglehurst, D. 2003. *A portfolio of educational experience, using a multidisciplinary workshop on "Going Paperless?" as a case study. MSc Dissertation.*

Swinglehurst, D., Greenhalgh, T., Russell, J., & Myall, M. 2011. Receptionist input to quality and safety in repeat prescribing in UK general practice: ethnographic case study. *BMJ*, 343, bmj.d6788

Swinglehurst, D., Roberts, C., & Greenhalgh, T. 2011. Opening up the "black box" of the electronic patient record: A linguistic ethnographic study in general practice. *Communication and Medicine*, 8, (1) 3-15

Swinglehurst, D., Greenhalgh, T., Myall, M., & Russell, J. 2010. Ethnographic study of ICT-supported collaborative work routines in general practice. *BMC Health Serv Res*, 10, 348

Taylor, S. 2001, "Locating and Conducting Discourse Analytic Research," *In Discourse as Data*, M. Wetherell, S. Taylor, & S. Yates, eds., London: SAGE Publications, pp. 5-48.

ten Have, P. 1991, "Talk and Institution: A Reconsideration of the "Asymmetry" of Doctor-Patient Interaction," *In Talk and Social Structure: Studies in Ethnomethodology and Conversation Analysis*, D. Boden & D. H. Zimmerman, eds., Berkeley and Los Angeles: University of California Press, pp. 138-163.

Thiru, K., Hassey, A., & Sullivan, F. 2003. Systematic review of scope and quality of electronic patient record data in primary care. *BMJ*, 326, 1070

Thrift, N. 1996. *Spatial Formations* London, Sage.

Timmermans, S. & Berg, M. 2003. The practice of medical technology. *Sociology of Health and Illness*, 25, (3) 97-114

Towle, A., Godolphin, W., Grams, G., & LaMarre, A. 2006. Putting informed and shared decision making into practice. *Health Expectations*, 9, 321-332

Trace, C.B. 2002. What is Recorded is Never Simply "What Happened": Record Keeping in Modern Organizational Culture. *Archival Science*, 2, 139-159

Tsoukas, H. 1997. The Tyranny of Light. *Futures*, 29, (9) 827-843

UKLEF 2011. *UK Linguistic Ethnography Forum. Available from http://www.ling-ethnog.org.uk/index.html*.

UnitedHealth UK 2011. *ScriptSwitch, available at http://www.scriptswitch.com/*.

Ventres, W., Kooienga, S., & Marlin, R. 2006. EHRs in the Exam Room: Tips on Patient-Centred Care. *Family Practice Management*, 13, (3) 45-47

Ventres, W., Kooienga, S., Marlin, R., Vuckovic, N., & Stewart, V. 2005. Clinician Style and Examination Room Computers: A Video Ethnography. *Family Medicine*, 37, (4) 276-281

Ventres, W., Kooienga, S., Vuckovic, N., Marlin, R., Nygren, P., & Stewart, V. 2006. Physicians, Patients, and the Electronic Health Record: An Ethnographic Analysis. *Annals of Family Medicine*, 4, (2) 124-131

Vološinov V 1973. *Marxism and the Philosophy of Language* Cambridge MA, Harvard University Press.

Wagenaar, H. 2004. "Knowing" the Rules: Administrative Work as Practice. *Public Administration Review*, 64, (6) 643-655

Wagner, E., Austin, B., & Von Korff, M. 1996. Organising care for patients with chronic illness. *Milbank Quarterly*, 74, (4) 511-544

Warshawsky, S.S., Pliskin, J.S., Urkin, J., Cohen, N., Sharon, A., Binztok, M., & Margolis, C.Z. 1994. Physician use of a computerized medical record system during the patient encounter: a descriptive study. *Computer Methods and Programs in Biomedicine*, 43, 269-273

Weed, L. 1968. Medical Records that Guide and Teach. *New England Journal of Medicine*, 278, 593-600

Weed, L. 1969. *Medical Records, Medical Education and Patient Care: The Problem-Oriented Medical Record as a Basic Tool* Cleveland, OH, Case Western Reserve University Press.

Werner, O. & Schoepfle, G. 1989. *Systematic Field Work* Newbury Park, CA, Sage.

Wetherell, M. 2001, "Themes in Discourse Research: The Case of Diana," *In Discourse Theory and Practice*, M. Wetherell, S. Taylor, & S. Yates, eds., London: Sage Publications, pp. 14-28.

# Appendix 1

**BMC Medicine**

**DEBATE**                                                                      **Open Access**

# Studying technology use as social practice: the untapped potential of ethnography

Trisha Greenhalgh* and Deborah Swinglehurst

## Abstract

Information and communications technologies (ICTs) in healthcare are often introduced with expectations of higher-quality, more efficient, and safer care. Many fail to meet these expectations. We argue here that the well-documented failures of ICTs in healthcare are partly attributable to the philosophical foundations of much health informatics research. Positivistic assumptions underpinning the design, implementation and evaluation of ICTs (in particular the notion that technology X has an impact which can be measured and reproduced in new settings), and the deterministic experimental and quasi-experimental study designs which follow from these assumptions, have inherent limitations when ICTs are part of complex social practices involving multiple human actors. We suggest that while experimental and quasi-experimental studies have an important place in health informatics research overall, ethnography is the preferred methodological approach for studying ICTs introduced into complex social systems. But for ethnographic approaches to be accepted and used to their full potential, many in the health informatics community will need to revisit their philosophical assumptions about what counts as research rigor.

## Background

'The existence of the experimental method makes us think we have the means of solving the problems which trouble us, but problem and method pass one another by.'
- Ludwig Wittgenstein, Philosophical Investigations, para 230 [1].

Health informatics - the study of information and communications technologies (ICTs) in healthcare - is a rapidly expanding field of research strongly influenced by (though extending beyond) doctors with an interest in computers. It emerged at around the same time as evidence-based medicine (EBM) and overlapped with the latter in several areas of work, notably the development of ICT systems to support large-scale epidemiological surveys and clinical trials; routinization of the use of Medline and other electronic databases; standardization of clinical practice via guidelines and automated decision support; and innovations such as computerized physician order entry (CPOE) aimed at reducing medical error [2-4].

Overall, the health informatics literature is hopeful and technophilic [5]. In this literature, ICTs are typically portrayed as potentially able to [a] incorporate (and thereby drive uptake of) evidence-based protocols and decision support; [b] overcome human failures and idiosyncracies; [c] ensure that clinical information is more complete, accurate and accessible; and [d] improve efficiency of healthcare transactions [6]. Health informatics is built largely though not exclusively on a positivist philosophy, determinist assumptions (that is, that a particular technology can cause a particular outcome) and experimental methodology. As Kaplan has put it:

'Traditionally, medical information systems evaluations have been conducted according to an experimental or clinical trials model of research. These evaluations focus on technical, economic, or other factors believed to affect systems' impacts. Some areas of systems evaluation are well-recognized in the medical informatics literature: (1) technical and systems features that affect systems use, (2) cost-benefit analysis, (3) user acceptance, and (4) patient outcomes. The factors believed to cause impacts were identified and the impacts measured. This kind of research design takes a variance approach; i.e., the focus of study is on how a variable changes as a result of some intervention, in this case, the information system.' [[7], page 95]

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Controlled experimental and quasi-experimental studies oriented to determining the relationship between predefined variables such as completeness, accuracy, IT response times and morbidity (what Kaplan calls the variance approach) are commonly depicted as synonymous with robust health informatics research [8]. But these methodological approaches have been widely criticized in the social science literature for oversimplifying the social settings in which technologies are adopted and used (and also resisted and abandoned). Critics say they overlook issues such as meaning (is a computer a typewriter or a terminal?), power (who gets what access privileges and why?) and numerous other social and material influences on whether and how technologies are used (and whether they work) in particular contexts and settings leading to significant mismatches between the predicted and actual benefits of ICTs [9-11].

The limitations of experimental approaches to the social and organizational use of ICTs are beginning to be recognized within the health informatics discipline. Han *et al*, for example, set out to demonstrate in a large, quasi-experimental before-and-after study that mortality in a pediatric tertiary care center (dealing with very sick children, often transferred as emergencies from other centers) would be reduced by the introduction of a CPOE system to support 'safer' prescribing and dispensing of medication [12]. In fact, mortality increased significantly (from 2.80% to 6.57%) after the system was introduced. The authors, whose paper otherwise follows the experimental and quantitative style typical of biomedical papers, explained these unexpected findings thus:

> 'The usual chain of events that occurred when a patient was admitted through our transport system was altered after CPOE implementation. Before implementation of CPOE, after radio contact with the transport team, the ICU [intensive care unit] fellow was allowed to order critical medications/drips, which then were prepared by the bedside ICU nurse in anticipation of patient arrival. When needed, the ICU fellow could also make arrangements for the patient to receive an emergent diagnostic imaging study before coming into the ICU. A full set of admission orders could be written and ready before patient arrival. After CPOE implementation, order entry was not allowed until after the patient had physically arrived to the hospital and been fully registered into the system, leading to potential delays in new therapies and diagnostic testing (this policy later was rectified). The physical process of entering stabilization orders often required an average of ten clicks on the computer mouse per order, which translated to 1 to 2 minutes per single order as compared with a few seconds previously needed to place the same order by written form. Because the vast majority of computer terminals were linked to the hospital computer system via wireless signal, communication bandwidth was often exceeded during peak operational periods, which created additional delays between each click on the computer mouse. Sometimes the computer screen seemed frozen.' (page 1508-9)

This example offers some salient empirical and methodological lessons. Empirically, the commercial CPOE system (which had been extensively tested before release) did not perform as anticipated in real-world situations for three reasons. First, assumptions, constraints and access privileges which had been built into (or, to use the term preferred by sociologists, inscribed in) the technology as well-intentioned safety features could not be over-ridden to meet local contingencies, even when a child's life was at stake. Second, system designers missed critical elements of the collaborative work routine (input of key staff in a particular, time-dependent sequence) for emergency admission. Finally, electronic processes ran an order of magnitude more slowly than their written or spoken equivalent.

Methodologically, the above example shows that even relatively crude real-life observations presented in narrative form can convey much about the interaction between the material properties of technologies, time, place, space, and human action and interaction in the complex and fast-paced world of emergency healthcare. It suggests that richer insights could be generated by applying more sophisticated techniques of qualitative observation, for example, if detailed ethnographic field notes (what anthropologists call thick description [13]) were made; if these observational field notes were supplemented with video or screen-capture technologies; or if talk were recorded, transcribed and analyzed to facilitate study of the subtle complexities of interaction between humans and technologies.

Such methodological approaches could help health informatics researchers move beyond the determinist shackles of variance research and help them reconceptualize ICTs as what Harré has referred to as social substances, that is, in terms of their properties and meaning within a social world [14]. In this paper, we review how ethnography has been applied to study ICT use as social practice and propose that ethnographic approaches should be applied more widely in this field.

## Discussion
### What is ethnography?
The ethnographer immerses him or herself in a social situation and collects naturalistic data (that is, real-

world observations rather than under experimental conditions) in a pragmatic, reflexive and emergent way [13,15]. Ethnographic data are rich in qualitative description (and sometimes also in visual imagery), allowing the researcher to interpret, to a greater or lesser extent depending on the degree of rigor applied (see below), what is really going on.

An important ethnographic tradition in the study of computers in the workplace is workplace studies, which emerged in the 1990s as part of a wider interdisciplinary field called computer-supported cooperative work (CSCW) [10,16-18]. Careful ethnographic observation in work settings showed that many work tasks which were previously assumed to be individual were actually collaborative. ICT design tends to focus on tasks performed by an individual user or on the relatively rare situation of focused collaboration on a single task. This deficiency may be particularly significant in healthcare where work typically comprises multiple, continuously multi-tasking individuals who come together for brief periods. The challenge is managing interdependencies between activities performed to achieve a goal, including handling conflicts of perspective [19]. Individuals must be aware both of the work of others and of the limitations of technologies, and make subtle and continuous adjustments to their own actions (articulation) to align with this.

Workplace studies drew on seminal theoretical work by ethnographer Lucy Suchman, who emphasized the limits of machine behavior compared to the situated (that is, tied to a particular situation in a particular context) interpretation of human actors. She rejected a key tenet of traditional human-computer interaction - that human action is individual, goal-oriented and based on rational plans - in favor of the notion that activity is collaborative and grows directly and organically out of the fine-grained particularities of a given situation [20]. She called for researchers to 'turn away from the experimental, the cognitive and the deterministic, to the naturalistic, the social and the contingent' [17].

The various research approaches which favor ethnography as a study design all share the view that ICTs cannot be meaningfully studied in isolation from the social situation in which they are used (or in which people decide not to use them), and all assume that technologies, in a sense, both shape and are shaped by human action. Technologies shape human action because they make some actions possible (for example, searching, aggregating), some impossible (for example by providing a limited set of options in a pull-down menu) and some unimaginable or socially difficult (for example by requiring the user to hit an emergency override button). Technologies are shaped by human action because, for example, humans configure them, disable

certain functionality, decide who may be trained to use them, and allocate differential access privileges to different people.

In relation to electronic patient records, for example, the notion of the record as a passive and neutral container for data about the patient is rejected in favor of a more nuanced, dynamic and active conceptualization of its role:

> 'The medical record is a tool...its does not 'represent' the work, but it feeds into it, it structures it in complex ways: it structures communication between healthcare personnel, shapes medical decision-making, and frames relations between personnel and patients.' [[21], page 297]

The ethnographer is less interested in assessing intrinsic features of technology (such as its data fields, coding structure or completeness or accuracy of the data it holds) and more interested in exploring ICT-supported social practices, that is, in the 'coordinated activities and performances which bring new situations into being but which are constrained by, in interaction with, and sometimes in tension with, surrounding practices and with what has gone before' [22]. Ethnography focuses on how technologies and the humans who are meant to use them actually perform under real, particular conditions of use (indeed, it has been described as a performative methodology).

Studying how technologies are used in social practice moves us on from studying either people or technologies (just as the study of drumming moves us on from studying either the drummer or the drum). Health informatics researchers sometimes talk in what Berg called 'essentialist' terms of a gap between reality (the lived body of the patient, or the practical reality of clinical medicine - messy, heterogeneous and impossible to code or classify) and a formal model-of-reality (the representation of this body and this practice in the electronic record - symbolic, clean, abstract and hence may be unproblematically coded and classified) [23]. Ethnographic methods, he suggested, allow us to go beyond lamenting this model-reality gap (an ultimately negative and technology-averse standpoint) and consider from a more positive perspective the ways in which skilful and creative human work is able to bridge this gap.

> 'More and more,...authors are calling for the need to reconfigure this dichotomous opposition between the formal and the informal. The positions are too entrenched; the rhetorics, too outdated; the foundations, too essentialist. Several authors have argued that formal tools can indeed transform workplaces in various ways but that this generative power can

be attributed neither to the tool nor to the human workers. Rather, the generative power of this configuration lies in the interrelation of the formal with the informal. The distance between representation and represented, the existence of the gap, is here seen as the fruitful tension that can produce new worlds' [[23], page 406].

### Ethnographic research: philosophical foundations and quality criteria

Variables-centred (experimental and quasi-experimental) approaches and ethnographic approaches to the study of ICTs in healthcare have developed as distinct research traditions with remarkably little dialogue between them [5]. This is due in large part to differences in ontology (assumptions about the nature of reality), epistemology (how we can know that reality), methodology (what counts as robust study designs) and axiology (what is of value) [24].

For the positivist scientist (with whom most experimental ICT researchers would be happy to identify), there is a single reality which is knowable and probabilistic. Knowledge is seen as objective and dispassionate, and has a direct link to reality. The researcher is considered to be a detached observer of truth, and neither reflexivity nor relationship-building is given particular significance in the research process. Methodologically, the positivist researcher assumes a hierarchy of research designs, with quantitative experimental studies (for which the randomized controlled trial is the gold standard) seen as the most robust. The goal of positivist science is universal, transferable and predictive truth; hence models of reality achieved by statistical abstraction and generalization are valued very highly, and non-experimental approaches seen as necessarily less helpful [8].

Non-positivist research on ICTs span a range of philosophical positions, including interpretivist approaches such as sensemaking (which ask, for example, what meaning does this technology hold for different groups of actors in an organization? [25]), critical approaches (including feminist research on how technology may be used to further the interests of a dominant gender [26]) and recursive perspectives such as structuration theory and actor-network theory (which ask, for example, how micro-level phenomena such as the local understandings and actions of humans or the performance of technologies are shaped and constrained by wider influences and how, in turn, does micro-level action feed back into and change the wider socio-political context? [27,28]).

All these non-positivist traditions value immersion in uncontrolled real-world settings over conducting objective experiments. Such approaches are comfortable with multiple versions of reality. Indeed, ambiguity, paradox and conflict are viewed as valuable data and systematically analyzed for higher-order insights. Transferability of research findings is achieved not via statistical generalization (repeating the experiment or the observations across different settings) but via theoretical abstraction and generalization (that is, creating plausible and theoretically justifiable explanations, often based on the detailed study of the particular and the specific).

Ethnography is a very different kind of research from the controlled experiment. Rigorous ethnography is judged not in positivistic terms (for example how closely a predefined study protocol is adhered to, how tightly contextual variables are controlled, and so on) but in terms of three key interpretive criteria: authenticity (immersion in the case through extended fieldwork), plausibility (developing explanations of local phenomena which made sense to participants and drawing these together into a coherent overall narrative) and criticality (systematically questioning taken-for-granted assumptions, for example about who makes the decisions in a team) [29,30]. Whereas controlled experiments produce learning in terms of quantitative, predictive statements about the relationship between predefined variables, ethnographic studies produce a different kind of learning in terms of interpretive insights about actions and events placed in context [31].

### Some landmark ethnographic studies of ICT in healthcare

In a recent wide-ranging systematic literature review of electronic patient record research, we identified 12 purely ethnographic studies and a further 23 mixed-method studies which included an ethnographic element [5]. Some of these studies (those which we identified as rigorous according to the criteria above) are described below. This sparse sample contrasted with the 21 previous systematic reviews we identified which had been undertaken using Cochrane methodology and which covered more than 2,000 experimental and quasi-experimental studies on electronic patient records [5].

Drawing on Suchman's theoretical work (see above), Heath *et al* summarized a series of detailed ethnographic studies on what they called 'centres of coordination', data-dense and activity-rich areas where complex coordination of work was achieved by groups of people, such as air traffic control centers, financial trading centers and the nurses' desk in a busy emergency department [17]. Such centers typically relied on multiple sources of fast-changing information (paper, large electronic displays, digital print-outs, whiteboards, CCTV, verbal reports, and so on). A key finding from these studies was that there was no master overview but multiple diverse local perspectives, each constituted through the specific array of tasks, an ensemble of tools for

performing those tasks, and the physical activity of the workers (including such subtleties as momentary glances at display screens).

Using a similar approach, Reddy *et al* studied a surgical intensive care unit in the USA [32]. They found that different professional groups (doctors, nurses and pharmacists) each had a different set of work practices which reflected the different focus, values and goals of their professions. The particular electronic record used on this unit was flexible and customizable, allowing different views for different professionals. Looking at these different screens allowed staff to see trends in changing variables and also orient themselves to what other professionals were doing, thus supporting the ordering and coordination of activity in a fast-changing clinical context. Importantly, the different screen views allowed both retrospective activity (aggregation of data to get a handle on the patient's progress over time done mainly by the physicians) and prospective activity (planning and coordinating care and procedures over the next few hours done mainly by nurses). Physical co-location (for example, several staff crowding round and discussing a particular screen on a shared computer) appeared essential for co-ordination of diverse work practices suggesting that problems may arise when ICTs are used to co-ordinate the work of geographically distributed staff. Placelessness may be technically achievable but it is a potential threat to patient safety.

Hartswood and Procter conducted a multi-site ethnographic case study of six breast screening centers in the UK, all of which used a particular ICT software package for registering and recalling patients and recording clinical findings [33]. They found that the complex work sequence of breast screening was a practical, situated accomplishment characterized by numerous work-arounds and articulations, notably the use of handwritten notes on paper report forms, which served to augment the formally-recognized checks and performance audits. The authors comment: 'in practice, screening work is not so much organized to guarantee the flawless performance of each stage, but rather to support the safety and integrity of the overall process' (page 100).

Østerlund used a knowledge-in-action framework (in which knowledge was seen as something embodied and performed rather than merely possessed by individuals) to inform an 18-month ethnographic study of an emergency department in a US hospital and linked admission wards [34]. He showed how doctors and nurses use documents to organize their work practices that are distributed across teams. Members of staff recorded the same clinical data many times in different paper and electronic documents (a task he called 're-localization'). Each document served as a map and itinerary for a different constituency of people. The micro-detail of language use in medical records (in particular its indexicality, that is, the people and places implicitly or explicitly referred to in entries) provided a subtle but important structuring and ordering device for collaborative work [35,36]. Entries acquired new meaning when juxtaposed with other entries and/or re-entered by individuals with different roles.

Similarly, Ellingsen and Monteiro's ethnographic studies of electronic patient record systems in different departments in a Norwegian hospital [37,38] showed that seemingly redundant (repeated) or ambiguous (similar but not identical) entries served an important function: they created a space in which different teams could share information while maintaining different interpretations of it. They concluded that large, tightly integrated systems in which all data fields are rigidly standardized may be of less use in practice than smaller, more loosely coupled systems which make multiple, overlapping representations of knowledge possible [39,40].

## Summary
Whereas the dominant positivist paradigm in health informatics research tends to privilege the universal, the unified and the standardized (for example, the single, agreeable version of the electronic record in which each data item is entered only once and has a tightly-defined, non-negotiable meaning; common interoperability standards; shared protocols and guidelines, and so on), ethnographic studies have highlighted how collaborative work is achieved via multiple, iterative contributions to the emergent detail of particular situations. Each individual provides work fragments which acknowledge and respond to the input of others and to the here-and-now affordances and limitations of the technologies that are to hand. Collaborative healthcare work is thus not a formula to be followed or blueprint to be imposed but a vibrant, kaleidoscopic and unique patchwork quilt to be woven in real time from diverse inputs [37]. Inconsistencies and ambiguities between different staff perspectives (and different data fields and views in ICTs) provide scope for the local adjustments of emphasis and interpretation which help to achieve a more-or-less seamless experience for the patient. This was a critical missing element in the design of the CPOE system whose introduction was associated with an increase in mortality [12].

Philosophical differences between experimental and naturalistic approaches to health informatics research are profound and perhaps fundamentally incommensurable [41], though this incommensurability does not preclude useful mixed-method studies [42]. In recent years, qualitative methods in general and ethnography in

particular have become more popular in the healthcare community [15]. The research which informed this paper, for example, was funded by a new methodologies call from the UK Medical Research Council http://www.mrc.ac.uk. Ironically, ethnography as a method is as old as the discipline of anthropology. What makes it new is its application to traditionally positivist fields of inquiry (where deeply-held paradigmatic assumptions threaten to limit its application and credibility) and its application to health informatics.

We suggest that it is time for research sponsors, researchers, journal editors, trainers and practitioners to move beyond the assumption that whatever the research question, a large, controlled, technology-on-versus-technology-off experiment will necessarily provide better evidence than a small-scale, carefully conducted ethnographic case study. Where appropriate, we need to commission such studies, ground them theoretically, conduct them rigorously, review them critically, learn from them, build on them and take account of their insights when designing new systems. None of these things is currently happening to the extent that is needed, which is why health informatics research remains dominated by large-scale studies that privilege method over theory and abstraction over illumination.

To illustrate this point, the most recently published recommendations for a health informatics training syllabus for professionals at bachelor, masters and doctorate level refers to socio-technical issues and qualitative research once each (the former unelaborated and the latter in relation to triangulation against quantitative research); the extensive and detailed syllabus, which references 90 key texts, makes no mention of either ethnographic or socio-technical co-design methods [43]. These study designs (and the epistemological assumptions on which they are based) appear to have been deemed out of scope.

As the studies described in this article show, ethnography has much to offer health informatics research, but its contribution may remain in the shadows until the field acknowledges the need not merely for new methodologies but also new ontologies, new epistemologies and new definitions of what is of value. We offer this paper as a contribution to the urgent debate which we believe is needed on ways of knowing in eHealth research.

## Abbreviations

CCTV: Closed-circuit television; CPOE: Computerized physician order entry; CSCW: Computer-supported cooperative work; EBM: Evidence-based medicine; ICT: Information and communications technology; ICU: Intensive care unit; USA: United States of America;

## Authors' contributions

TG conceptualized the paper with input from DS. DS is conducting a PhD study based on ethnographic methods which inspired the ideas in this paper. TG and DS wrote the paper. All authors read and approved the final manuscript.

## Competing interests

The authors declare that they have no competing interests.

## References

1. Wittgenstein L: In *Philosophical Investigations.* Edited by: Anscombe GEM, Rhees R and translated by GEM Anscombe. Oxford: Blackwell; 1963:.
2. Timmermans S, Berg M: **The gold standard: The challenge of evidence-based medicine and standardization in health care.** Philadelphia: Temple University Press; 2003.
3. Pope C: **Resisting evidence: the study of evidence-based medicine as a contemporary social movement.** *Health* 2003, **7**:267-282.
4. Georgiou A: **Health informatics and evidence-based medicine - more than a marriage of convenience?** *Health Informatics J* 2001, **7**:127-130.
5. Greenhalgh T, Potts H, Wong G, Bark P, Swinglehurst D: **Tensions and paradoxes in electronic patient record research: A systematic literature review using the meta-narrative method.** *Milbank Quarterly* 2009, **87**:729-788.
6. Coiera E: *Guide to health informatics, medical information and the Internet.* 2 edition. Oxford: Oxford University Press; 2003.
7. Kaplan B: **Addressing Organizational Issues into the Evaluation of Medical Systems.** *J Am Med Inform Assoc* 1997, **4**:94-101.
8. Lilford RJ, Foster J, Pringle M: **Evaluating eHealth: how to make evaluation more methodologically robust.** *PLoS Med* 2009, **6**:e1000186.
9. Grudin J: **Why CSCW applications fail: problems in the design and evaluation of organisational interfaces.** *Proceedings of the 1988 ACM conference on Computer-supported cooperative work* ACM Press New York, NY, USA. pp.;85-93.
10. Pratt W, Reddy MC, McDonald DW, Tarczy-Hornoch P, Gennari JH: **Incorporating ideas from computer-supported cooperative work.** *J Biomed Inform* 2004, **37**:128-137.
11. Orlikowski WJ, Iacono CS: **Research commentary: Desperately seeking the "IT" in IT research - A call to theorizing the IT artifact.** *Information Systems Research* 2001, **12**:121-134.
12. Han YY, Carcillo JA, Venkataraman ST, Clark RSB, Watson RS, Nguyen TC, Bayir H, Orr RA: **Unexpected Increased Mortality After Implementation of a Commercially Sold Computerized Physician Order Entry System.** *Pediatrics* 2005, **116**:1506-1512.
13. Geertz C: **Thick Description: Toward an Interpretive Theory of Culture.** *The Interpretation of Cultures* New York: Basic Books; 1973, 3-30.
14. Harré R: **Material Objects in Social Worlds.** *Theory, Culture & Society* 2002, **19**:23-33.
15. Pope C: **Conducting ethnography in medical settings.** *Med Educ* 2005, **39**:1180-1187.
16. Heath C, Luff P: *Technology in action* Cambridge: Cambridge University Press; 2000.
17. Heath C, Knoblauch H, Luff P: **Technology and social interaction: the emergence of 'workplace studies'.** *Br J Sociol* 2000, **51**:299-320.
18. Luff P, Heath C, Greatbatch D: **Tasks-in-interaction: paper and screen based documentation in collaborative activity.** *Proceedings of Computer Supported Cooperative Work* 1992, **92**:163-170.
19. Symon G, Long K, Ellis J: **The coordination of work activities: cooperation and conflict in a hospital context.** *Computer Supported Cooperative Work* 1996, **5**:1-31.
20. Suchman L: *Plans and situated actions: The problem of human-machine communication* Cambridge: Cambridge University Press; 1987.

21. Berg M: **Medical work and the computer-based patient record: a sociological perspective.** *Methods Inf Med* 1998, **37**:294-301.
22. Davies C, Wetherell M, Barnett E: *Citizens at the Centre: Deliberative participation in healthcare decisions* Bristol: The Policy Press; 2006.
23. Berg M: **Of forms, containers, and the electronic medical record: some tools for a sociology of the formal.** *Science, Technology, & Human Values* 1997, **22**:403-433.
24. Orlikowski WJ, Baroudi JJ: **Studying information technology in organizations: research approaches and assumptions.** *Information Systems Research* 1991, **2**:1-28.
25. Weick KE: **Technology as equivoque: sensemaking in new technologies.** In *Technology and organizations.* Edited by: Goodman PS, Sproull LS. San Francisco, CA: Jossey-Bass; 1990:1-44.
26. Henwood F, Hart A: **Articulating gender in the context of ICTs in health care: the case of electronic patient records in maternity services.** *Critical Social Policy* 2003, **23**:249-267.
27. Berg M, Langenberg C, vd Berg I, Kwakkernaat J: **Considerations for sociotechnical design: experiences with an electronic patient record in a clinical context.** *Int J Med Inform* 1998, **52**:243-251.
28. Greenhalgh T, Stones R: **Theorising big IT programmes in healthcare: Strong structuration theory meets actor-network theory.** *Soc Sci Med* 2010, **70**:1285-1294.
29. Golden-Biddle K, Locke K: **Appealing work: An investigation of how ethnographic texts convince.** *Organization Science* 1993, **4**:595-616.
30. Prasad P: **Systems of meaning: Ethnography as a methodology for the study of information technologies.** In *Information Systems and Qualitative Research.* Edited by: Lee AS, Liebenau J, DeGross JI. New York: Chapman 1997:101-118.
31. Greenhalgh T, Russell J: **Why Do Evaluations of eHealth Programs Fail? An Alternative Set of Guiding Principles.** *PLoS Med* 2010, **7**:e1000360.
32. Reddy MC, Dourish P, Pratt W: **Coordinating heterogeneous work: information and representation in medical care.** *Proceedings of European Conference on Computer Supported Cooperative Work (ECSCCW'01)* 2001, 239-258.
33. Hartswood M, Procter R: **Design guidelines for dealing with breakdowns and repairs in collaborative work.** *International Journal of Human-Computer Studies* 2000, **53**:93-120.
34. Østerlund C: **Mapping medical work: documenting practices across multiple medical settings.** *Journal of the Center for Information Studies* 2004, **5**:35-43.
35. Østerlund C: **Documenting practices: The indexical centering of medical records.** *Outlines* 2003, **2**:43-68.
36. Østerlund C: **Two doctors' documenting practices: How the indexical centering of medical records integrates the encoding, communication and coordination of patient care.** *2nd Annual Meeting of the Document Academy* School of Information Management and Systems: University of California, Berkeley; 2004.
37. Ellingsen G, Monteiro E: **A patchwork planet: integration and cooperation in hospitals.** *2nd Annual Meeting of the Document Academy* 2003, **12**:71-95.
38. Ellingsen G, Monteiro E: **Mechanisms for producing a working knowledge: enacting, orchestrating and organizing.** *Information and Organization* 2003, **13**:203-229.
39. Monteiro E: **Integrating health information systems: a critical appraisal.** *Methods Inf Med* 2003, **42**:428-432.
40. Ellingsen G, Monteiro E: **Seamless integration: standardisation across multiple local settings.** *Computer Supported Cooperative Work* 2006, **15**:443-466.
41. Kuhn TS: *The structure of scientific revolutions* Chicago: University of Chicago Press; 1962.
42. Alberdi E, Povyakal A, Strigini L, Hartswood M, Procter R, Slack R: **The use of Computer Aided Detection tools in screening mammography: A multidisciplinary investigation.** *British Journal of Radiology, special issue on Computer-Aided Diagnosis* 2005, **78**:31-40.
43. Mantas J, Ammenwerth E, Demiris G, Hasman A, Haux R, Hersh W, Hovenga E, Lun KC, Marin H, Martin-Sanchez F, Wright G: **IMIA Recommendations on Education Task Force Recommendations of the International Medical Informatics Association (IMIA) on Education in Biomedical and Health Informatics. First Revision.** *Methods Inf Med* 2010, **49**:105-120.

# Appendix 2

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# Ethnographic study of ICT-supported collaborative work routines in general practice

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## Abstract

**Background:** Health informatics research has traditionally been dominated by experimental and quasi-experimental designs. An emerging area of study in organisational sociology is routinisation (how collaborative work practices become business-as-usual). There is growing interest in the use of ethnography and other in-depth qualitative approaches to explore how collaborative work routines are enacted and develop over time, and how electronic patient records (EPRs) are used to support collaborative work practices within organisations.

**Methods/design:** Following Feldman and Pentland, we will use 'the organisational routine' as our unit of analysis. In a sample of four UK general practices, we will collect narratives, ethnographic observations, multi-modal (video and screen capture) data, documents and other artefacts, and analyse these to map and compare the different understandings and enactments of three common routines (repeat prescribing, coding and summarising, and chronic disease surveillance) which span clinical and administrative spaces and which, though 'mundane', have an important bearing on quality and safety of care. In a detailed qualitative analysis informed by sociological theory, we aim to generate insights about how complex collaborative work is achieved through the process of routinisation in healthcare organisations.

**Discussion:** Our study offers the potential not only to identify potential quality failures (poor performance, errors, failures of coordination) in collaborative work routines but also to reveal the hidden work and workarounds by front-line staff which bridge the model-reality gap in EPR technologies and via which "automated" safety features have an impact in practice.

## Background

### The need for qualitative studies of organisational routines

The study of innovation and change in healthcare organisations is, arguably, under-theorised and in need of methodological enrichment. Research has focused predominantly on experimental, quantitative and (often) behaviourist study designs oriented to developing interventions, testing hypotheses and measuring the relationship between inputs (e.g. training), processes (e.g. following a guideline) and outcomes (e.g. morbidity). These empirically-driven ('positivist') approaches resonate strongly with medicine's methodological hierarchy of evidence in which the controlled experiment counts highly [1].

Important though such research is, there is also a need for in-depth qualitative research ('interpretivist' approaches) oriented to developing theories and explanations of *how* innovation and change happens - and in particular, how new ideas, practices and collective behaviours become *routinised* as business-as-usual. The need to research routinisation is particularly pressing given that as healthcare becomes ever more complex and multi-professional, the limited penetration of potentially effective innovations as well as a high and rising proportion of quality and safety failures are all attributed to poor communication and coordination between groups and teams [2,3].

Our study seeks to contribute to a body of knowledge which lies at the interface between health services research and organisational sociology. Our 2004 systematic review on diffusion of innovations in healthcare organisations identified numerous studies of individual adoption but highlighted a dearth of research on the

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process by which innovations become routinised at organisational level [4]. A later update of that systematic review identified an emerging literature on routinisation [5]; we explored its implications for healthcare in a further paper [6]. A recent systematic review on implementation of electronic patient records (EPRs) in organisations revealed a preponderance of experimental and quasi-experimental studies and a much smaller qualitative literature describing the social processes and contextual influences on EPR adoption and use [7].

### Tensions in organisational research

Scholars in organisational sociology tend to frame the study of innovation and change not in terms of interventions and outcomes but as the playing-out of tensions: between the general unwritten rules and forces which make up society ('social structures') and individual behaviour ('agency') [8]; between collective knowledge and individual knowledge [9]; and between continuity and change [10]. Sociological studies of information and communication technologies (ICTs) in organisations add a fourth tension: between standardisation and contingency [7,11-13]. Health informatics scholars have generally shown more interest in promoting standardisation (e.g. developing common codes and interoperability standards) than exploring contingency (e.g. a team's commitment to a stand-alone legacy system whose limitations and the workarounds for overcoming them are part of local business-as-usual), though in a companion paper we review some ethnographic studies on local EPR systems (Greenhalgh T, Swinglehurst D: Studying technology use as social practice: the untapped potential of ethnography, submitted). More generally, the researcher's challenge is usually seen as rising above ephemeral, situated detail in the search for abstracted, generalisable truths.

Harold Garfinkel, the father of ethnomethodology, bucked this trend, arguing that the organisational researcher's main focus should be the *non-generalisable* particularities of small-scale social situations [14]. He argued that each utterance, written comment or action occurs in a micro-sequence that takes detailed and tacit account of the utterances, comments or actions preceding it, and proposed that it is these subtle contingencies of work, not the abstract routines and patterns an observer might see 'sedimenting' from them, which are of greatest interest [15]. Both perspectives, of course, are important.

### Organisational routines

To routinise an innovation is to embed it into routines. Organisational routines have been defined as *"repetitive recognisable patterns of interdependent actions by multiple actors"* [16]. Routines (which include such things as

ward rounds, meetings, surgical operations and making telephone bookings) are the way organisational life is patterned [6]. A routine conveys complex, tacit knowledge and also serves to coordinate and control. Early theoretical work on organisational routines emphasised their abstracted qualities, especially the common characteristics of a particular routine across different enactments of it, and the contribution of routines to organisational stability [17]. But Feldman and Pentland drew attention to the situated (local, one-off) nature of every routine and its critical dependence on human actors who embody the routine, embrace it or resist it, and put greater or lesser creative effort into improving it and/or shaping it to the particularities of the here-and-now [18].

The production and reproduction of organisational routines by human actors is a specific example of the structure-agency tension described by Giddens in structuration theory [8]. Pentland and Feldman suggest a model of the routine which incorporates both ostensive (the abstract understanding or 'script' of the routine-in-general which actors might describe if asked) and performative (what particular people actually do in particular situations, paying attention to the actions of particular others and with a particular goal in mind) [19]. Artefacts (such as standard operating procedures, guidelines, protocols and so on) may codify the intended steps in a routine but should not be equated with what actually gets done (see Figure 1).

There is no one 'true' ostensive version of a particular organisational routine. Rather, there are multiple, overlapping typifications and understandings which guide and account for particular performances of it. The situated nature of the performative routine is important [20]. Individual work is an effortful accomplishment in which participants use their discretion as they select from a repertoire of possibilities, or 'organisational
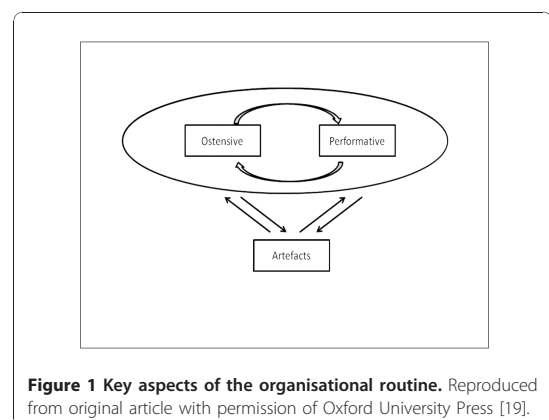


**Figure 1 Key aspects of the organisational routine.** Reproduced from original article with permission of Oxford University Press [19].

grammars' [21]. Organisational members learn from previous iterations of a routine and mindfully seek to make sense of actions-in-context by drawing on their understanding of the wider organisation [16,22]. This emphasis on human creativity and effort contrasts with earlier notions that routines are 'mindless' (i.e. repetitive and semi-automated) [23].

There is an ongoing tension between any individual's contribution to a routine and the routine as a whole. Interpretivist research has long emphasised the principle of the hermeneutic circle - that is, the need to analyse the parts in detail while maintaining awareness of the whole and relate micro-level findings to this wider picture [24]; this has been applied to ICT research [25] and to the study of routines [17]. The organisational ethnographer must shift between studying the work of individuals within a particular routine, the overall routine, and the wider organisational context, with reflexive awareness of the dynamic interplay between parts and wholes.

The development (or attrition) of routines over time reflects the more general tension between continuity and change in organisational life [10]. The routine (noun) is linked to efforts to routinise (verb) - a key step in introducing new ideas and service models [6]. But even once routinised, an innovation must adapt to a changing context and to a continuous stream of other innovations and changes. Routines are differently reproduced every time they are enacted, because different people bring different prior knowledge, expectations, priorities, assumptions, personalities and skills to their work and are enabled and constrained by different local influences, both social and technical. Herein lies the scope for organisations to learn and for particular routines to move flexibly with the times [18].

### Researching routines dynamically

Analysing the divergence between ostensive and performative aspects of routines and the artefacts through which members attempt to codify and capture these can reveal rich meanings in aspects of organisational life (data entry, telephone calls, administrative notes) which were previously considered mundane, uniform and offering little in the way of research insights [19]. Divergence between artefacts and ostensive routines (often overlooked since the artefact is assumed to *be* the routine), for example, may highlight failures of sensemaking, conflicts between management and staff, or conflicts between the organisation and a wider public. For example, a 'health and safety' poster may be displayed within a reception area as a legal requirement but have little or no impact on individual or organisational routines relating to health and safety. Divergence between artefacts and performative routines may reveal organisational power struggles - most commonly when

management introduce formal protocols in an effort to control behaviour, but these *representations* of recurrent action patterns fail to give rise to *actual* recurrent action patterns [26].

### The electronic patient record as 'actor'

Health informatics research conventionally portrays the EPR in terms of its essential, intrinsic properties as a 'container' for data about the patient (and perhaps, as a medicolegal record or source of secondary data). But research in fields such as sociology, actor-network theory and computer-supported cooperative work views the EPR in more dynamic terms - as an active player in an ever-changing (and often unstable) network of people and technologies [7]. This is not to suggest that the EPR has human-like agency. Rather, the focus of this alternative literature is to consider the EPR in *relational* terms - that is, in terms of what it *becomes* when part of a particular socio-technical network [27]. This dynamic view of the EPR links elegantly to the literature on organisational routines described above and offers exciting possibilities for studying change in healthcare organisations through a novel, socio-technically informed analytic lens.

The aims of this study are (at an empirical level) to explore the use of EPRs in collaborative work routines in general practice and (at a more abstract level) to develop theory and method which will inform a wider programme of qualitative research into ICT-supported collaborative work, innovation and change in healthcare organisations. At a theoretical level, we are interested in exploring how key organisational tensions (collective-individual, continuity-change, standardisation-contingency) play out over time and across settings via enactment of routines.

## Methods/design
### Research question

How are collaborative work routines enacted, and how do they develop and change over time in healthcare organisations? What is the role of information and communication technologies (specifically, the electronic patient record) in shaping, constraining and perpetuating this process?

### Study design and setting

Multi-centre case study in four UK general practices.

### Study objectives

1. To conduct detailed ethnographic observation of collaborative work involving the EPR in participating organisations over a period of time.

2. To map how selected collaborative routines are codified (artefactual or proxy routine), understood

(ostensive routine) and enacted (performative routine) by staff in those organisations.

3. To compare and contrast different versions of the routines within each organisation with a view to illuminating how key organisational tensions play out dynamically over time.

4. To compare findings across cases and through time with a view to making theoretically-informed generalisations about the routinisation process.

### Intended outputs

We hope to generate four main outputs:

1. Four detailed case studies describing EPR-supported collaborative work routines in general practice.

2. A transferable methodology for the detailed qualitative study of ICT-supported collaborative work in healthcare organisations.

3. Theoretical insights into how ICT-supported routines develop and evolve (or not) in healthcare organisations.

4. Hypotheses for further research on how to introduce and routinise ICT innovations intended to improve quality and/or safety of care.

### Management and governance

Research ethics approval has been granted by Thames Valley Multi-centre Research Ethics Committee (06/MRE12/81). An external steering group with a lay chair has been established and meets four-monthly throughout the 3-year research period. Core team meetings occur monthly.

### Selection of organisational cases

The selection criteria for the sample of four general practices are [a] *opportunity to learn* and [b] representativeness. Stake's approach to organisational case study views this as a fundamentally interpretive process in which generalisations are made by theoretical, not statistical, abstraction (i.e. a rigorous case study analysis is one in which events and actions are linked via a plausible and richly-theorised account) [28]. With this in mind, opportunity to generate learning is identified via features such as interest in the study, willingness of staff at all levels to participate in the research process, plausibility of planned data collection methods (e.g. adequate physical space), and evidence of the organisation's engagement with previous comparable studies. Practices meeting these criteria will be selected for diversity in terms of size, geographical setting, demographics of population served and sophistication of in-house ICT systems.

### Selection of routines to be studied

Contemporary general practice in the UK is characterised by low incidence of major emergencies; high level of computerisation oriented to both primary uses of data (patient care) and secondary uses (audit, research, surveillance, implementing quality incentives) [29]; an increasing focus on chronic disease management and risk assessment (which depend on registration, recall and regular review) [30,31]; a well-demarcated division of labour, with patient care tending to be divided into tasks and delegated to the cheapest individual able to complete each task [32]; and a growing patient safety agenda, especially in relation to medicines management (i.e. prevention of drug-related errors and adverse reactions) [33].

Because of the above characteristics, we are particularly interested in studying routines which [a] are oriented to 'everyday' general practice rather than emergencies; [b] span both clinical and administrative work; [c] involve both primary and secondary uses of the electronic record; [d] require collaboration between staff both synchronously and asynchronously in time and space; and [e] address the quality and/or safety agenda. We have chosen three such routines for further study, namely:

1. Issuing repeat prescriptions
2. Summarising and coding (e.g. of outpatient and discharge letters)
3. Surveillance of chronic disease

Identifying and exploring routines will not be an end in itself. Indeed, the detailed tasks, processes and interactions for (say) repeat prescribing are of limited intrinsic interest. They are, however, a way of opening up to scrutiny the interaction between the EPR, its users, the general practice organisation and wider influences (e.g. policy directives). By synthesising and comparing routines across a sample of practices, we aim to produce generic insights into the EPR as a technology-in-use [34] - and at a more abstract level, insights into how socio-technical micro-systems contribute to both perpetuating and changing collaborative routines in healthcare organisations.

### Data sources and collection methods

Figure 2 shows the key data sources for this study. These comprise:

• *Narrative accounts* of front-line staff in which they describe their work. Narrative accounts will be collected naturalistically (i.e. in the real environment of work rather than a formal interview situation) since it is well documented that people describe a work process better when they are actually doing it or close to someone who is doing it [35]. Between 15 and 30 such accounts (5-10 per routine) will be
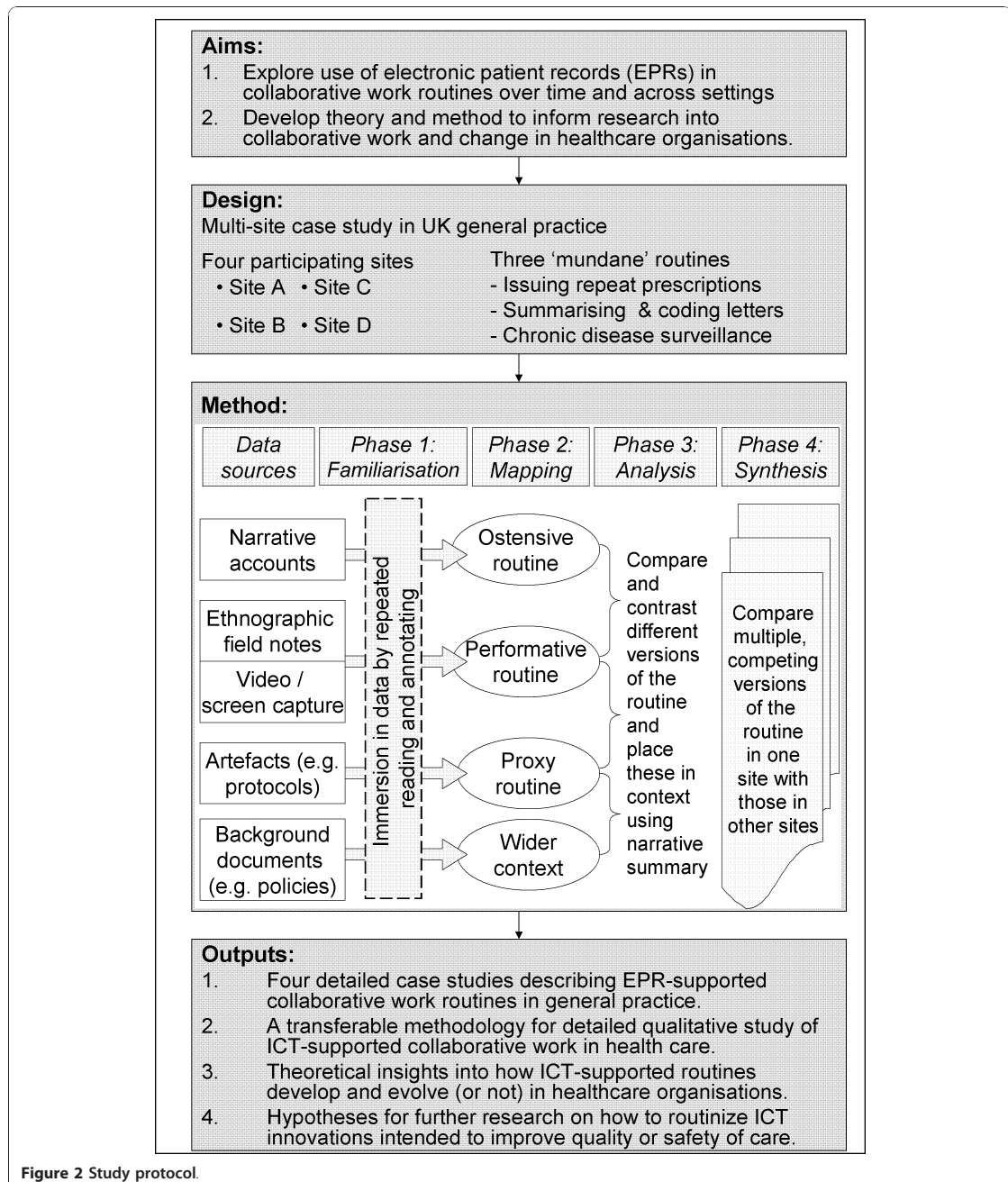
**Aims:**
1. Explore use of electronic patient records (EPRs) in collaborative work routines over time and across settings
2. Develop theory and method to inform research into collaborative work and change in healthcare organisations.

**Design:**
Multi-site case study in UK general practice

Four participating sites
- Site A  • Site C
- Site B  • Site D

Three 'mundane' routines
- Issuing repeat prescriptions
- Summarising  & coding letters
- Chronic disease surveillance

**Method:**

| Data sources | Phase 1: Familiarisation | Phase 2: Mapping | Phase 3: Analysis | Phase 4: Synthesis |
|---|---|---|---|---|

Narrative accounts

Ethnographic field notes

Video / screen capture

Artefacts (e.g. protocols)

Background documents (e.g. policies)

Immersion in data by repeated reading and annotating

Ostensive routine

Performative routine

Proxy routine

Wider context

Compare and contrast different versions of the routine and place these in context using narrative summary

Compare multiple, competing versions of the routine in one site with those in other sites

**Outputs:**
1. Four detailed case studies describing EPR-supported collaborative work routines in general practice.
2. A transferable methodology for detailed qualitative study of ICT-supported collaborative work in health care.
3. Theoretical insights into how ICT-supported routines develop and evolve (or not) in healthcare organisations.
4. Hypotheses for further research on how to routinize ICT innovations intended to improve quality or safety of care.

**Figure 2 Study protocol**.

collected in each organisation. As part of this dataset, we will ask staff to "talk us through" particular tasks and procedures and show us how (if at all) they draw on formal artefacts such as templates or protocols (or informal ones such as handwritten notes) when undertaking these. We will also explore their understanding of other members' contributions to the same routine.

• *Ethnographic observation* of staff undertaking the routine. Experienced researchers will sit in on both

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clinical and administrative work and make notes on the actions and talk of staff engaged in the real-time enactment of target routines. We anticipate spending between 100 and 150 hours in each organisation. Studying repeat prescribing, for example, will include observing administrative staff sorting requests, printing prescriptions, 'querying' requests and processing the signed prescriptions from clinicians, and also observing clinicians signing the prescriptions and responding to queries; messages exchanged between staff on post-it notes and via internal email will be part of this dataset.

• *Video and screen capture*. In order to supplement direct ethnographic observation of clinical consultations in relation to chronic disease surveillance, we will follow Jewitt's methodology for collecting multimodal data [36]. Subject to consent of both parties, we will use an unobtrusive video camera positioned so as to view the faces of clinician and patient. We will also use screen capture software to record what is entered in real time onto the EPR. We will aim to collect data on 10-15 such consultations in each practice (40-60 in total).

• *Artefacts*. We will collect from the general practices any documentation describing the target routines or parts of routines to staff, patients or other parties. In relation to repeat prescribing, for example, these may include: staff protocols, training or induction materials, internal memos, algorithms, and relevant sections of the practice leaflet and website.

• *Background documents*. We will also collect documentation relevant to the wider context such as practice annual reports, and relevant local and national guidelines and policies (e.g. on medicines management or chronic disease surveillance).

### Data mapping and analysis

In an initial familiarisation phase (see Figure 2), we will read, re-read and annotate field notes, transcripts and other texts and also view video data repeatedly to achieve immersion in the data [37]. This will feed into a mapping phase, in which we will identify and refine a picture of [a] the ostensive routine (i.e. the sometimes conflicting narrative accounts and typifications which members give when asked to describe what is done) including, where relevant, the use of space and time as structuring devices; [b] the performative routine as directly observed, paying close attention to practices, puzzles faced, dilemmas encountered, people involved and language used; and [c] the proxy routine as depicted in artefacts such as protocols, guidelines, templates, patient leaflets and so on. We will avoid trying to 'isolate out' the EPR but will study this inasmuch as it is integral to the routine we are mapping.

In the analysis phase, we will compare ostensive, performative and proxy routines, considering interfaces and divergence between these and using narrative to draw the analytic threads together and interpret the multiple, competing versions of the routine in context. In this way, we will generate preliminary explanations of how collaborative work occurs and how the target routines are perpetuated and shaped by both human agency and the functionality of the EPR. We will use narrative accounts, ethnographic notes and video and screen capture data to "zoom in" on the micro-detail of small-scale incidents and interactions, and also use our wider data sources within and beyond the organisation to "zoom out" and consider external influences, thus placing the routine in wider context (Swinglehurst D, Roberts C, Greenhalgh T: Opening up the "black box" of the electronic patient record: a linguistic ethnographic study in general practice, submitted). Finally, in a synthesis phase we will compare how routines vary both over time in a single organisation and across the different general practices in our sample.

### Discussion

We have piloted the data collection methods in two general practices and found them feasible and acceptable to staff. Focusing on organisational routines rather than individual performance or outputs has helped significantly in gaining access and establishing productive research relationships, especially amongst non-clinical staff. Participants understand that detailed observation of their work is essential for us to build a picture of the whole routine, and appear very willing to talk us through work practices, giving us access to the ostensive routine through naturally occurring talk [38]. We have confirmed Barley and Kunda's finding that knowledge of parts of routines held by individual actors is largely tacit and hard to articulate [35]. One administrator, for example, commented: *"I have been doing this so long, my fingers go faster than my brain. I don't really know what I am doing any more"*.

Our chosen research focus (the collaborative work which the EPR supports) was driven mainly by our theoretical position described above, and we rejected the more narrow and static focus on the technology itself preferred by some previous researchers. It is, however, worth noting that when piloting our methods, we have been struck by the impossibility of isolating out the EPR or its 'impact' when making ethnographic field notes. Staff roles cannot be described separately from their engagement with the EPR, and conversely, the EPR cannot be meaningfully described without constant reference to who is using it. For example, receptionists in one practice talked of being "on the computer" - which (in that setting) meant issuing repeat prescriptions.

Despite pertaining to what appear on the surface to be relatively simple tasks and processes, the routines we are seeking to explore do not 'fall out of the data'. Previous researchers have presented a somewhat reified picture of organisational routines as readily-discernible patterns of action and interaction which are 'out there' in the organisation, ready to be researched [23]. In reality, as the preliminary data fragments in Table 1 show, the ostensive, performative and proxy routines for scanning and coding incoming letters are social constructions which are differently perceived by different organisational members. This messiness is not unsurprising but will require careful attention to the 'immersion' and 'mapping' phases in Figure 2.

We have deliberately chosen to study routines which span what Goffman calls 'front-stage' work (e.g. carried out by clinicians in their consulting rooms) and the 'back-stage' activities which support and augment this work [39]. For example, in a pilot observation, an administrator referred to "doing the baby clinic". What she was actually referring to was her own specific role of entering vaccination batch numbers into a computer template in the electronic record, but this was part of a wider organisational routine known simply as "baby clinic" which also, at different times and in different spaces, included clinical staff (and, at some point, babies). Drawing out the routine as a whole across both clinical and administrative space, rather than simply focusing on one person's role in it, will allow us to depict how the EPR is not merely a 'container' onto which doctors and nurses enter data but a 'player' in complex collaborative working practices right across the organisation.

We have found that material artefacts - such as practice protocols, electronic templates for chronic disease management, and patient information (e.g. a practice leaflet about a new online appointment-booking system) - are readily gathered. More subtle artefacts which reflect how designers expect a routine to be enacted include the layout of a room (such as whether clinicians consult across a desk or obliquely so that the patient can see the computer screen) or seating arrangements (indeed, some routines seem to be defined as much by *where* they are undertaken as by *what* is being done by the staff member). As the data fragments in Box 1 show, artefacts sometimes reveal an expectation that a particular task (such as scanning and attaching documents to the electronic record) is uniform and mundane when in reality it is (to a greater or lesser extent) unpredictable and demanding.

As Table 1 shows, the subtle mismatches between the proxy routine depicted in the formal protocol (artefact), the mental models which staff carry in their heads (ostensive routine) and what actually gets done (performative routine) illustrate a fertile area for quality and safety research. However, it would be wrong to assume

**Table 1 Data fragments illustrating ostensive, performative and proxy routine for scanning and coding incoming letters**

| TYPE OF ROUTINE | EXAMPLE |
| --- | --- |
| Ostensive routine | **From researcher's summary based on narratives of practice staff** <br> *The 'old' system involves the doctors highlighting in pen on the letter the things they want READ coded (ring round) or added as free text (scored through with highlighter pen). With DOCMAN [a recent add-on to the EMIS electronic record software], a letter is received by the practice, stamped with a date stamp which also has other things on the stamp (Problem Title; Date; Active; Past; Minor; GP init; sum; s/c (meaning scanned)). X [receptionist] said that the person scanning the letter into this stamp are essentially not used. The letter is then scanned and added to DOCMAN. It is then sent electronically through DOCMAN for viewing/highlighting by the GP.* |
| Performative routine | **From field notes of direct observation of the routine** <br> *"I asked Z [secretary] if it was OK if I watched her sorting post next door and she was fine about that. Everything was date stamped. She explained that the stamp indicated that the letters had been scanned (but they hadn't - they had just come out of the envelopes). She explained that if a GP sees a letter without a date stamp on it they know that it is not scanned so it needs to be put back in the sec's tray. She said that X [fellow secretary] didn't stamp until after scanning - but that they both do things slightly differently. She had made a separate pile of letters which were printed on both sides and took those to the photocopier to photocopy the 'back' side of these letters which made it much easier to put them through the scanner. (again she pointed out X doesn't do this)."* |
| Proxy routine | **As depicted in formal protocol** <br> **Coding - a how to guide:** <br> All written correspondence and test results that the Practice receives is scanned into the records of the relevant patient. Certain types of correspondence are also read coded to enable the information to be found by running searches. Items that need to be coded are detailed below. <br> **Read codes** <br> These are unique codes made up of a combination of up to 4 letters and numbers. There are read codes relating to almost everything - being sucked into the jet of a space craft, being bitten by a crocodile whilst at home and drowning accidentally (as though people often drown on purpose) whilst pearl diving. Logging information under its specific read code means that it can be easily retrieved - eg a search for code 621 would bring up all women who are currently pregnant. In this way we can keep on top of all our patients with particular conditions. |

that the 'gold standard' is captured in the artefact and that any deviation from this should be classified as a potential threat to quality or safety, since as Hartswood and Procter have previously shown in relation to administrative work in breast cancer screening [40]) staff may develop workarounds and other 'protocol deviations' as deliberate or unconscious measures to *increase* quality and safety. For example, whilst the formal protocol for repeat prescribing is that a doctor checks and signs each prescription, receptionists may observe that in reality, doctors do not check each medication before signing, and hence add an informal safety measure (e.g. a post-it note asking "OK to give?").

We are particularly keen to explore how the informal workarounds and articulations introduced by front-line staff to improve quality or safety interface with the EPR's automated prompts and inbuilt design features. Pop-up decision support prompts, for example, may be 're-localised' by reception or administrative staff [41], who may (sometimes but perhaps not always) send an informal message to a clinician to say "computer is asking about...". These complex and subtle interactions between the EPR's standard prompts and situated human judgements will form a major focus of the analysis.

In summary, we have described an innovative study design and methodology for studying the micro-detail of EPR-supported collaborative work in general practice. In a sample of four UK general practices, we will collect narratives, ethnographic observations, multi-modal data, documents and other artefacts, and analyse these to map and compare the different understandings and enactments of selected organisational routines which span clinical and administrative spaces and which have an important bearing on quality and safety of care. In a detailed analysis informed by sociological theory, we aim to generate insights about how ICT-supported collaborative work is achieved in healthcare organisations. Our study offers the opportunity not only to identify potential quality failures (poor performance or error) but also to reveal the hidden work (and workarounds) by front-line administrative and clinical staff via which "automated" safety features of technology are adopted and have an impact in practice.

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### References
1. Guyatt GH, Sackett DL, Sinclair JC, Hayward R, Cook DJ, Cook RJ: **Users' guides to the medical literature. IX. A method for grading health care recommendations. Evidence-Based Medicine Working Group [published erratum appears in JAMA 1996 Apr 24;275(16):1232].** *JAMA: The Journal of the American Medical Association* 1995, **274**:1800-1804.
2. Hoffmarcher MM, Oxley H, Rusticelli E: *Improved health system performance through better care coordination. Health Working Paper No. 30* Paris: OECD; 2007.
3. Institute of Medicine: *Crossing the Quality Chasm: A New Health System for the 21st Century* Washington, DC: National Academic Press; 2003.
4. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O: **Diffusion of innovations in service organisations: systematic literature review and recommendations for future research.** *Milbank Q* 2004, **82**:581-629.
5. Robert G, Macfarlane F, Greenhalgh T: *Technology adoption in healthcare organisations, a systematic literature review* London: SDO Programme (SDO252); 2008.
6. Greenhalgh T: **Role of routines in collaborative work in healthcare organisations.** *BMJ* 2008, **337**:a2448.
7. Greenhalgh T, Potts H, Wong G, Bark P, Swinglehurst D: **Tensions and paradoxes in electronic patient record research: A systematic literature review using the meta-narrative method.** *Milbank Quarterly* 2009, **87**:729-788.
8. Giddens A: *The constitution of society: outline of the theory of structure* Berkeley, CA: University of California Press; 1984.
9. Tsoukas H, Vladimiros E: **Organizational knowledge.** *Journal of Management Studies* 2001, **38**:973-993.
10. March JC: **Continuity and change in theories of organizational action.** *Administrative Science Quarterly* 1996, **41**:278-287.
11. Kaplan B: **Addressing Organizational Issues into the Evaluation of Medical Systems.** *J Am Med Inform Assoc* 1997, **4**:94-101.
12. Orlikowski WJ: **Knowing in practice: Enacting a collective capability in distributed organizing.** *Organization Science* 2002, **13**:249-273.
13. Weick KE: **Technology as equivoque: sensemaking in new technologies.** In *Technology and organizations.* Edited by: Goodman PS, Sproull LS. San Francisco, CA: Jossey-Bass; 1990:1-44.
14. Garfinkel H: *Studies in ethnomethodology* Engelwood Cliffs, NJ: Prentice-Hall; 1967.
15. Rawls AW: **Harold Garfinkel, Ethnomethodology and Workplace Studies.** *Organization Studies* 2008, **29**:701-732.
16. Feldman M: **A performative perspective on stability and change in organizational routines.** *Industrial and Corporate Change* 2003, **12**:727-752.
17. Becker MC: **Organizational routines: A review of the literature.** *Industrial and Corporate Change* 2004, **13**:643-677.
18. Feldman MS: **Organizational routines as a source of continuous change.** *Organization Science* 2000, **11**:611-629.
19. Pentland BT, Feldman M: **Organizational routines as a unit of analysis.** *Industrial and Corporate Change* 2005, **14**:793-815.
20. Suchman L: *Plans and situated actions: The problem of human-machine communication* Cambridge: Cambridge University Press; 1987.
21. Pentland BT: **Grammatical Models of Organizational Processes.** *Organization Science* 1995, **6**:541-556.
22. Epstein RM: **Mindful practice.** *JAMA* 1999, **282**:833-839.
23. Ashforth BE, Fried Y: **The mindlessness of organizational behaviours.** *Human Relations* 1988, **41**:305-329.
24. Polanyi M: *Personal Knowledge: Towards a Post-Critical Philosophy* Chicago: University of Chicago Press; 1958.

25. Klein HK, Myers MD: **A set of principles for conducting and evaluating interpretive field studies in information systems.** *Mis Quarterly* 1999, **23**:67-93.
26. Becker MC: **The concept of routines: some clarifications.** *Cambridge Journal of Economics* 2005, **29**:249-262.
27. Berg M: **Medical work and the computer-based patient record: a sociological perspective.** *Methods Inf Med* 1998, **37**:294-301.
28. Stake R: **Qualitative case studies.** In *The Sage handbook of qualitative research.* Edited by: Denzin N, Lincoln Y. London: Sage; 2005:.
29. de Lusignan S, Chan T: **The development of primary care information technology in the United Kingdom Jul-Sep;31(3):201-10.** *J Ambul Care Manage* 2008, **31**:201-210.
30. Armstrong D: **The rise of surveillance medicine.** *Sociology of Health & Illness* 1995, **17**:393-404.
31. Wagner EH: **The role of patient care teams in chronic disease management.** *BMJ* 2000, **320**:569-572.
32. Charles-Jones H, Latimer J, May C: **Transforming general practice: the redistribution of medical work in primary care.** *Sociology of Health and Illness* 2003, **25**:71-92.
33. Smith J: *Building a safer NHS for patients: Improving medication safety* London: The Stationery Office; 2004.
34. Lincoln YS, Guba E: *Naturalistic enquiry* Beverley Hills, CA: Sage; 1985.
35. Barley SR, Kunda G: **Bringing work back in.** *Organization Science* 2001, **12**:76-95.
36. Jewitt C: **Towards a multimodal analysis.** *Technology, literacy and learning: a multimodal approach* Abingdon: Routledge; 2006, 32-52.
37. Rose G: *Deciphering Sociological Research* London: Palgrave Macmillan; 1982.
38. Feldman MS, Pentland BT: **Reconceptualizing organizational routines as a source of flexibility and change.** *Administrative Science Quarterly* 2003, **48**:94-118.
39. Goffman E: *The Presentation of Self in Everyday Life* Edinburgh: University of Edinburgh, Social Sciences Research Centre; 1958.
40. Hartswood M, Procter R: **Design guidelines for dealing with breakdowns and repairs in collaborative work.** *International Journal of Human-Computer Studies* 2000, **53**:93-120.
41. Østerlund C: **Mapping medical work: documenting practices across multiple medical settings.** *Journal of the Center for Information Studies* 2004, **5**:35-43.

**Appendix 3**

# BMJ

# RESEARCH

# Receptionist input to quality and safety in repeat prescribing in UK general practice: ethnographic case study

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## Abstract

**Objective** To describe, explore, and compare organisational routines for repeat prescribing in general practice to identify contributors and barriers to safety and quality.

**Design** Ethnographic case study.

**Setting** Four urban UK general practices with diverse organisational characteristics using electronic patient records that supported semi-automation of repeat prescribing.

**Participants** 395 hours of ethnographic observation of staff (25 doctors, 16 nurses, 4 healthcare assistants, 6 managers, and 56 reception or administrative staff), and 28 documents and other artefacts relating to repeat prescribing locally and nationally.

**Main outcome measures** Potential threats to patient safety and characteristics of good practice.

**Methods** Observation of how doctors, receptionists, and other administrative staff contributed to, and collaborated on, the repeat prescribing routine. Analysis included mapping prescribing routines, building a rich description of organisational practices, and drawing these together through narrative synthesis. This was informed by a sociological model of how organisational routines shape and are shaped by information and communications technologies.

**Results** Repeat prescribing was a complex, technology-supported social practice requiring collaboration between clinical and administrative staff, with important implications for patient safety. More than half of requests for repeat prescriptions were classed as "exceptions" by receptionists (most commonly because the drug, dose, or timing differed from what was on the electronic repeat list). They managed these exceptions by making situated judgments that enabled them (sometimes but not always) to bridge the gap between the idealised assumptions about tasks, roles, and interactions that were built into the electronic patient record and formal protocols, and the actual repeat prescribing routine as it played out in practice. This work was creative and demanded both explicit and

tacit knowledge. Clinicians were often unaware of this input and it did not feature in policy documents or previous research. Yet it was sometimes critical to getting the job done and contributed in subtle ways to safeguarding patients.

**Conclusion** Receptionists and administrative staff make important "hidden" contributions to quality and safety in repeat prescribing in general practice, regarding themselves accountable to patients for these contributions. Studying technology-supported work routines that seem mundane, standardised, and automated, but which in reality require a high degree of local tailoring and judgment from frontline staff, opens up a new agenda for the study of patient safety.

## Introduction

Repeat prescriptions are traditionally understood to be those issued without a consultation between clinician and patient.[1] With electronic records, the de facto definition became "prescriptions printed by a practice computer from its repeat prescribing program."[2] Repeat prescribing accounts for up to three quarters of all drugs prescribed and four fifths of drug costs in UK general practice; around half of all registered patients receive treatment by repeat prescription, and rates are rising.[2-4]

The quality and safety of repeat prescribing has long been recognised as an important concern.[5-8] Estimates on the scale of prescribing errors vary.[9] A recent systematic review based on UK research suggested an error rate of 7.5% across primary and secondary care. Repeat prescribing may allow errors to go undetected and contribute to polypharmacy, rising prescribing costs, and preventable drug related admissions to hospital.[10-13]

Research on repeat prescribing has been largely quantitative, comprising retrospective surveys of conditions, drugs, authorisation dates, clinicians' views,[2 14-17] and experimental or

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quasi-experimental studies of interventions aimed at improving efficiency or safety.[18-22] One small qualitative study explored general practitioners' perceptions of the causes of preventable drug related admissions to hospital.[11] Another reported that continuous quality improvement in one practice reduced the percentage of repeat prescriptions needing records to be checked by the doctor.[23] Repeat prescribing has been identified as a core element of the receptionist's role.[24] A small interview study documented receptionists' perceptions about causes of medication error.[25]

Electronic records are sometimes assumed to make prescribing safer by reducing human errors such as illegibility, inaccurate transcription, omissions, and use of dangerous abbreviations and arcane Latin.[8 26-28] The assumption is that by increasing the automation of generating, checking, authorising, and issuing repeat prescriptions, safety will be improved. However, although computerised prescribing reduces some kinds of human error, it may introduce ones related to the technology itself.[6 29-35] Healthcare is a complex business; exceptions are sometimes typical. Technology embedded protocols with tight coupling of stages, restricted menus, and non-negotiable access controls may produce rigidity in the system, frustrate staff, and make it difficult to adapt to contingencies. One study argued from a complex systems perspective that although technology-supported automation can strengthen individual steps in a process, the process as a whole may be weakened if assumptions built into technology do not take full account of the "ecology" of healthcare work—for example, its real life demands such as constraints on time, space, and resources and the way in which "appropriate" actions emerge from the detail of a particular situation.[29]

It is time to critically question the assumption that semi-automated, technology-supported protocols form an effective and sufficient safety net for the common and risky task of repeat prescribing. We carried out an ethnographic study of repeat prescribing in general practice; described how the sociotechnical system (electronic records and the humans who interact with them) operates to generate, check, issue, and authorise repeat prescriptions; identified human and technical contributions to quality and safety in repeat prescribing; and contributed to the theoretical and methodological knowledge base in the study of medicines management and patient safety.

## Methods

This study was part of the Healthcare Electronic Records in Organisations study, funded by the UK Medical Research Council under a new methodologies call, which highlighted the limitations of experimental studies for certain research questions. The background, protocol, and details of governance and ethical approval for the study have been published previously,[36] along with a literature review and theoretical justification of ethnography in the study of technologies-in-use in healthcare.[37] Figure 1⇓ summarises the study protocol.

We studied four urban UK general practices (pseudonymised as Elm, Dale, Beech, and Clover), favouring what one researcher called "opportunity to learn" over "typicality."[38] We gained access to two practices through general practitioners inside the organisations (a legitimate approach in ethnographic work).[39] The other two practices responded to a primary care trust-wide invitation. The practices served mixed patient populations of about 6000 (Elm), 12 000 (Dale), 12 600 (Beech), and 11 800 (Clover). Dale operated from modern purpose built premises in a retail park, the others from converted houses in residential areas. Dale used the Vision clinical IT system; the others used

EMIS-LV (the most widely used system in the United Kingdom).

DS and MM undertook 395 hours of ethnographic observation (about four months in each practice), during normal working hours spread throughout the working week, usually in half day sessions. We shadowed 25 doctors, 16 nurses, 4 healthcare assistants, 6 managers, and 56 reception or administrative staff. We made field notes and elicited narratives from staff as they worked ("talk me through what you are doing"). Workers are typically unable to describe what they do unless they are doing it[40] so this approach was flexible and more sensitive to local contingencies than formal interviews. We explained that our interest was to learn about working routines and not to assess individuals' performance against prespecified standards. We made field notes during observations. We also collected documents on repeat prescribing at local and national level.

Field notes were anonymised, annotated with observational and theoretical notes,[41] and shared between members of the research team whose disciplinary backgrounds include general practice (DS and TG), social sciences (JR), and history (MM). This provided an opportunity for multidisciplinary reflection and enriched inquiry.[42] We applied the principle of the hermeneutic circle—that is, the need to analyse the parts in detail while maintaining awareness of the whole, relating new findings at the micro-level to an emerging wider picture.[43] In a preliminary data management phase, we collated relevant background text and material relating to repeat prescribing into interim documents informing a process of mapping repeat prescribing routines.

We built a rich ethnographic picture of each practice before using narrative synthesis to describe how repeat prescribing occurred within it. As new empirical data were added, we amended the emerging summary descriptions. We adopted an interpretive perspective of organisation. From this perspective, organisation (and organisational culture) comes about through organisational processes, constructed through patterns of relationships and meaning—a way of life.[44 45] Our task was to experience how organisation was accomplished day by day.

We chose the organisational routine (repeat prescribing is one example) as our unit of analysis. Routines are "repetitive recognisable patterns of interdependent actions by multiple actors"[46] and are the way organisational life is patterned; they convey complex, tacit knowledge and serve to coordinate and control.[36 47] Every routine is enacted differently every time, since human actors embody the routine, embrace or resist it, and put more or less creative effort into improving it or shaping it to the particularities of the here and now.[48 49] The ethnographic study of mundane routines can illuminate how organisational change happens (or not).

In studying repeat prescribing routines we sought to identify and compare three things: local artefacts such as repeat prescribing protocols (the proxy routine); abstracted understandings held by staff of how a routine is enacted (the so called ostensive routine), arrived at by asking "what gets done, by whom, and how?"; and the range of ways in which the routine is actually enacted (the performative routine), arrived at by direct observation.

We analysed the convergence and divergence between ostensive, performative, and proxy routines within each practice. This enabled us to explore the tension between stability and change in routines and the scope for organisational learning and innovation.[36 47] We also explored organisational power struggles highlighted in tensions between the three versions of the routine. We then compared routines across the four practices to highlight

variation and to identify potential for error and characteristics of good practice.

## Results

The dataset comprised over 800 pages of ethnographic field notes (around 20% of which related to repeat prescribing); up to 14 prescribing related artefacts for each practice, such as patients' leaflets and protocols; and national level documents from policy and professional bodies such as the National Prescribing Centre (www.npc.co.uk) and General Medical Council.[50]

### The organisational context of repeat prescription processing in general practice

Practice ethos varied from that of the traditional family doctor, with emphasis on personal relationships, continuity of care, and informal knowledge sharing (Beech) to modern business, with emphasis on uniformity, standards, protocols, and customer care practices (Clover); the other two practices (Elm and Dale) lay in between. All reception areas were divided into front stage (facing patients) the centrepiece being the reception desk, and back stage (not facing patients), where staff could talk confidentially. Time pressure and constraints on space were near universal.

In three practices (Elm, Dale, and Beech), the processing of repeat prescriptions took place in reception, which was busy, unpredictable, and characterised by frequent interruptions. Reception work often involved moving between cramped physical spaces, making do with materials and space available, and using apparently spontaneous (although sometimes strategically planned) encounters with clinicians to seek advice. In Clover, repeat prescribing work was the role of a "prescription clerk"; it occurred in an administrative office and was relatively free of interruptions. In all practices a formal division existed between reception and administration work; the latter was viewed as higher status (in one practice it attracted significantly higher pay), yet it was also seen by staff as more predictable and less stressful than reception work.

All practices were near paperless: computers were used for prescribing, booking appointments, clinical record keeping, item of service claims, and many other tasks. All were operating near their maximum computing capacity. Clover had a protechnology ethos and upgraded the various computers and peripherals often; use of personal smart cards and passwords was strictly observed and prescriptions were bar coded. But even here we observed the IT manager removing smart cards from computers in reception (disconnecting users from the national spine) to increase capacity on days when the system was running slowly. In another practice, computer screens regularly froze, requiring receptionists to make extensive handwritten notes until the screens unfroze.

### Practice protocols: the proxy routine

All practices had written protocols for repeat prescribing intended primarily for non-clinical staff. In Beech this had been written by one of the doctors a few years previously when studying for a diploma in therapeutics. It emphasised standards such as "precision, accuracy, promptness [and] alertness for potential errors," set a 48 hour turnaround for routine requests, and divided drugs into three categories: green (unproblematic requests for an item on the patient's repeat list), yellow (for example, requests for a change of dose or restarting a past drug), and red (including "any aspect of the request that you are not

sure about"), for which a repeat alert (fig 2⇓) was to be completed and passed to a general practitioner. The other practices had similar protocols but placed more emphasis on technical tasks and less on how uncertainty would be managed.

### Descriptions of repeat prescribing: the ostensive routine

Staff in all four practices readily and consistently described what they understood to be the routine for repeat prescribing. Figure 3⇓ shows the ostensive routine for repeat prescribing in Beech. This flow chart is not the practice protocol but our own synthesis, derived from staff accounts of who did what and who interacted with whom. Although the staff did not refer explicitly to the colour coding in their practice protocol, they seemed to have internalised this simple taxonomy along with the important message to refer on anything that they were not sure about. Staff in the other three practices described similar (but in some cases less detailed) routines.

### Repeat prescribing as it happened: the performative routine

Repeat prescribing as actually enacted exhibited greater variability than was suggested by practice protocols or ostensive routines. In many such cases these mismatches were not simple lapses of protocol but mindful and creative efforts to achieve a high quality and safe repeat prescribing service (and deliver other services), despite contextual constraints and the model-reality gap between what was assumed to constitute a repeat prescription by the software designers or author of the practice protocol and what actually unfolded in the here and now of real requests for repeat prescribing. Colleagues at adjacent computers often monitored each others' activity and helped to troubleshoot: "we bounce off each other for information and answering questions" (receptionist, Elm).

### Making requests for repeat prescriptions

The usual trigger for issuing a repeat prescription was a request from the patient or carer. Patients who discontinued a regular drug rarely came to the attention of staff. Although their electronic record would be automatically tagged to indicate underuse, there was no prompt for anyone to open that record and assimilate the information.

Most requests for repeat prescriptions in Beech (family doctor ethos) were submitted in person or by post using a tear-off attachment from a previous prescription, with relevant boxes ticked, but requests on scraps of paper were accepted and were processed almost as easily as the official artefact. Telephone requests were not accepted and this was made clear (in bold print) in the practice newsletter. Emailed requests, described by staff as part of the ostensive routine (fig 3) and promoted on the practice leaflet along with a dedicated email address, were little used. Such requests were unpopular with receptionists, who described them as "horrible" and a "waste of paper and time" and did not encourage patients to use them. This antipathy seemed to be explained by three things. Firstly, the email system in use (Microsoft Outlook) was not integrated with the clinical system, so staff had to move constantly between screens, which they found cumbersome. A function within the EMIS clinical system (EMIS Access) that could have integrated email prescription requests had been disabled because it was "just one more thing to check." Secondly, patients who requested their repeat drugs by email were perceived as expecting a faster turnaround than the 48 hour standard. But since receptionists simply printed off email requests (on the grounds that this made

them "easier to deal with"), the practice actually incurred a modest time penalty. Thirdly, the pace of activity in the reception area and the immediacy of many demands on receptionists (patients at the reception desk, telephone ringing, doctors' requests) meant that checking email regularly was difficult to achieve in practice.

In contrast, Clover (business ethos) viewed technology as underpinning a quality service for repeat prescribing. Staff actively encouraged telephone requests; the practice leaflet presented this as a selling point over other local practices, and there was a dedicated telephone line for them. The person who staffed this line sat at a specific desk and (when undertaking this role but not at other times) was referred to as the prescription clerk. The enactment of this part of the routine was actively monitored. For example, we observed doctors being upbraided by the practice manager for making outgoing calls on the this line during the advertised time slot, and patients who phoned reception to make prescription requests were asked to redial using the correct line. Clover also encouraged electronic requests through EMIS Access (fig 4⇓), and staff considered them easy to process—perhaps because this work was separated in both time and space from reception duties.

Dale did not formally permit receptionists to accept telephone requests from patients. This was explained on the practice website on the grounds of safety (because, it was believed, requests might be misheard or mistranscribed). We regularly observed staff instructing patients on this aspect of the routine. However, we also observed exceptions to this rule (for example, telephone requests accepted from care home staff, requests for oral contraceptives accepted provided an appointment was booked for a blood pressure check, and elderly patients asking for elastic stockings).

In Elm, the protocol stipulated that requests were to be in writing but acknowledged that there may be "rare exceptions" to this. We did not witness any telephone requests but did observe patients appearing at the front desk with "urgent" requests for medicines or devices needed that day. Nursing homes often faxed requests and the practice was preparing to go live with emailed requests.

## Issuing repeat prescriptions

Over half of the requests for repeat prescriptions, the processing of which we observed directly, were for items that either were not listed as repeats on the patient's electronic record or were listed by a different name, at a different dose, or as due earlier or later than the date they were requested. Issuing repeat prescriptions without first passing them to a general practitioner for special attention required explicit and tacit knowledge, which was keenly sought by receptionists. For example, many were adept at using a formulary to match brand names with generic equivalents; they often telephoned patients to clarify ambiguous requests; and many kept (individual or shared) notebooks containing knowledge they had gleaned on the job. The box shows examples of receptionists' use of initiative and judgment and the way in which they drew on local knowledge in dealing with problem scripts. The official repeat prescribing protocol in Clover had been written by a doctor, based on a (much longer) folder of informal notes, which had been collected on the job by the administrative staff. The doctor's version served to confer legitimacy on the staff folder (which one clerk referred to as the idiot's guide), but the staff folder remained the working artefact.

## Communicating with clinicians about problem scripts

Communication between administrative staff and doctors was crucial to the routine for repeat prescribing. The physical environment and relatively informal organisational culture of Beech afforded numerous opportunities for communication—for example, doctors almost always passed through the reception area on their way to and from their rooms. The doctors appeared to tolerate and even welcome such requests; receptionists were never told they were inappropriate. The repeat alert artefact in Beech incorporated three common contingencies (items requested early; overdue drug review; item listed in past drugs but not on the repeat list). Its incorporation into the ostensive routine meant that identifying such contingencies was the receptionist's role, but resolving them remained the doctor's role. It also meant that receptionists could process many exceptions promptly, allowing the routine to be completed within the 48 hour standard. This aspect of the routine also embodied an understanding in Beech that many prescription requests are (one way or another) not straightforward. The relatively high degree of autonomy afforded to reception staff meant that they often used the repeat alert to suggest a possible course of action for the general practitioner to endorse.

The other three practices tackled this need for close communication in different ways. Clover made extensive use of electronic messaging within the prescribing module in EMIS. The administrators shared an in-box for the prescription clerk role (general practitioners each had individual accounts). The clerk sent an electronic query (known as an "RI") for any problem scripts to the patient's usual doctor and stored a printed copy of the request form in a pending box next to the dedicated computer used for this work. Staff had learnt to include enough information in their original query to make this (and the doctor's reply) meaningful to whoever was on the rota. They assimilated the information they deemed relevant, typing detailed accounts in their messages to doctors, and were mindful that electronic notes became part of the patient's electronic record and thus were open to scrutiny.

This system in Clover seemed to serve a similar function to the repeat alert at Beech, but the ostensive routine was narrower and more rigidly defined. We did not observe a single instance of a prescription clerk issuing a prescription that was not on the electronic repeat list. All exceptions (about 50% of requests) were referred to the relevant doctor using the "RI" messaging system, and the reply was seen as an instruction pertaining to that specific request rather than to requests of this general type. Although staff found it frustrating that the ostensive routine did not incorporate common contingencies, the electronic messaging function allowed them to draw attention to problems, display their own knowledge of patients and prescriptions, and make doctors at least partially aware of the active and creative work they were doing to uphold quality and safety.

In Elm and Dale the ostensive routine was less well established and lines of communication (whether face to face or electronic) less clearly articulated. This resulted in much greater diversity in the performative routine and sometimes significant investment of time and effort by receptionists as they tried to resolve problems before issuing scripts for doctors to sign. Elm was characterised by a strongly hierarchical organisational culture. Receptionists in this practice referred to their repeat prescribing role as being "on the computer," thus emphasising its technical aspects. Most were unaware of the existence of the practice protocol. No officially endorsed system was in place for seeking help from clinicians before issuing a prescription, and we never saw this happen. A perception among receptionists, born of

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**Examples of initiative and judgment by receptionists and administrators when issuing automated repeat prescriptions**

*Beech practice*

One patient requested cetirizine, which the receptionist recognised immediately as an antihistamine. This prompted her to take two actions. Firstly, she noticed as she got part way through issuing the prescription that it was cheaper to prescribe a single pack of 30 tablets than three packs of seven tablets, which was currently listed on the repeat list (the electronic record displays information on cost, which enabled her to make this judgment). She altered the prescription to a pack of 30 tablets. She also appended to the prescription a standardised letter advising the patient that these tablets could be purchased as an over the counter drug more cheaply than the cost of a prescription charge, but commented that it was always possible that the patient might qualify for free prescriptions.

*Clover practice*

The prescription clerk took a telephone call from a patient whose address she recognised as the local unit for homeless families. The patient was requesting co-codamol from the repeat list. When the prescription clerk looked at the prescribing screen there was an on-screen message below the repeat prescription list reading "?over-using co-codamol." She spoke to the patient, saying that she recalled talking to her about it recently and remembered discussing the previous request with the doctor, who had increased the number of tablets available on her repeat list from 100 to 200. The prescription clerk said she would need to ask the doctor about it again. She put the phone down and started typing an electronic message to the doctor. However, this conversation had been overheard by an administrator, who was coding patient records at a nearby desk. The administrator called across the room, "Before you issue anything, check whether there is something from the local out of hours service. She had an urgent medication request with the out of hours service at the weekend." The prescription clerk checked the consultation screen but found nothing relevant and concluded (in discussion with the administrator) that the letter from the local out of hours service had not yet been scanned in. She left a note to herself to revisit this query later that day.

*Dale practice*

A receptionist was dealing with a repeat prescription request for tamoxifen. The patient had submitted a written request using one of the surgery's request forms and had stapled it to an empty tamoxifen box. The receptionist explained to me that this was a drug for breast cancer and had been prescribed by the hospital so was not on the patient's repeat list. She looked back at the patient's past drugs to see if tamoxifen had been previously prescribed, but it was not listed. She looked again at the empty box and pointed out that it had been issued by the hospital pharmacy. She issued the script and placed it in a pile with other prescriptions awaiting the doctor's signature, adding "I know they will."

*Elm practice*

The current request was for citalopram [antidepressant]. This was not listed on the repeat list but the receptionist found it in the patient's list of past drugs showing that it had been prescribed previously. She said she would issue it but attached a post-it note to the script and wrote "ok to give?" before placing it in the pile ready for signing by the general practitioner.

Next was a request for olanzapine [antipsychotic used in schizophrenia]. An alert popped up indicating that the patient was under-using this drug. Another receptionist said that they don't do anything with under-use and entered "aware" at the prompt. She went on to say that over-use was more important and that often you just had to use your judgment about whether or not to issue the drug. I asked how she made such decisions and she explained that she looked at the type of drug and when the last prescription had been issued.

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experience, was that some doctors did not like being approached, and opportunities for raising queries were limited—for example, doctors did not generally pass through reception. Receptionists made extensive use of post-it notes attached to scripts, with the brief message "OK to give?": a question that not only conveyed their uncertainty but concealed that they had typically made efforts to solve a problem before passing the script to the general practitioner for signing. The combination of culture, physical environment, tradition, and the absence of any endorsed feedback loop seemed to explain the more limited opportunities for individual and organisational learning in Elm and the high proportion of requests for repeat prescriptions, which played out as perplexing or problematic.

## Drug due dates and reviews

Attempts to issue prescriptions often resulted in an electronic message "patient over- (or under-) using [drug name], enter reason." The record also showed percentage overuse (for example, "200%" suggested twice the prescribed amount) in red. In Beech, the prompt for overuse was usually bypassed by receptionists (by hitting the return key). All independently asserted that they would only act on overuse if the percentage exceeded 175%, and considered that if a patient were regularly overusing drugs the percentage figure showing in red would creep up with time. In Clover, making judgments about the percentages in the drug usage column was not seen as part of the clerk's role, and some were unsure what these figures meant. Elm and Dale lay between these extremes, with receptionists showing some flexibility with due dates and using post-it notes to flag (for example) "O/D [overdue for review]."

When we observed clinical consultations, we often encountered patients attending in response to an invitation for drug review prompted by the electronic record. Clinicians sometimes described these appointments as unnecessary, assigning

responsibility to the technology (as if the computer had recalled the patient). Most tended to enter the code for drug review with patient whether drugs were actively discussed or not—a practice that perhaps suggests they saw the review as a request to confirm that the patient was in an ongoing care relationship, rather than as a prompt to undertake a formal audit of drugs. In Clover, it was considered outside the role of the prescribing clerk to check when a drug review was due or to prompt the doctor (or patient) to take action. Administrative staff found this frustrating.

## Requests for non-repeat items

Not uncommonly patients sought to influence what was widely perceived to be an entirely doctor controlled and non-negotiable process—for example, by writing additional drugs beneath the ticked repeat boxes on the right hand side of their prescription. When this occurred in Beech, the receptionist consulted the list of current and past drugs on the electronic record to check whether it had been prescribed previously. If the drug had been prescribed in the past, the receptionist restarted the drugs (by keying "R" for restart), issued the prescription along with a completed repeat alert (fig 2), and placed it in the relevant doctor's in-box. This action may or may not be reversed by the doctor later in the routine.

In Clover, prescription clerks used the electronic messaging function to contact the patient's usual doctor whenever a non-repeat item was requested. They tried to include all relevant information to allow the general practitioner to make a judgment but were allowed minimal autonomy and did not seem to second guess the response; the prescription was not issued until the reply was received. Receptionists in Dale and Elm used post-it notes with the question "OK to give?" or "OK to go on repeat?" Thus, in all four practices, staff used a locally accepted artefact (the repeat alert, the "RI" messaging function, the post-it note)

along with their initiative and judgment to manage the issuing of non-repeat drugs through the repeat prescribing routine.

### Getting prescriptions signed

As one receptionist put it, the worst part of repeat prescribing work was "getting the things signed." Some general practitioners were described as "really good" because they signed their prescriptions every day. Others were seen as needing coaxing or a special subroutine: "Dr M doesn't like signing scripts in the afternoon so they have to try and make sure she gets hers in the morning" (field notes, Elm). Staff in all practices tried to process requests quickly, as they found it difficult and stressful when patients arrived to collect scripts that remained unsigned. When scripts went unsigned past the 48 hour deadline, a delicate act of brokering was needed, balancing the immediacy of a patient waiting at the front desk, the reluctance to interrupt consultations, and face-saving work on behalf of the doctor and organisation.[51] Urgent requests (for example, when the patient had run out of drugs) were not mentioned in the practice protocols or leaflets, but all practices had an established ostensive routine for them. For example, administrators in Clover printed these scripts and left them on the table in the doctors' coffee room; such short-circuiting was tacitly accepted. Returning signed prescriptions to patients was generally straightforward: they were sent by post, picked up in person, or collected by a designated pharmacy. If a prescription request had been refused, receptionists felt a sense of responsibility to notify the patient and, as one put it, "soften the blow."

### Responsibilities and training needs

Receptionists in some practices expressed concern that doctors did not check prescriptions thoroughly before signing. They believed that because of this they had a heavy responsibility to undertake safety checks themselves, although these were not recognised or remunerated. Examples of these (perceived) hidden responsibilities that we witnessed included checking when a patient who received antihypertensive drugs had last had a blood pressure check and confirming that the reading was acceptable; deciding whether a patient taking antidepressants needed to be seen; and whether to alert a doctor to under-use of antipsychotic drugs (box).

Several receptionists commented that the training they had received on repeat prescribing was oriented predominantly to learning the official protocol and how to use the technology. It did not cover the complex judgments that needed to be made in real time or the associated emotional pressure. As shown by the examples in the box, the day to day judgments being made by administrative staff presuppose at least a lay understanding of basic pharmacology. Many believed this was something "you pick up as you go along." One clerk in Clover had been on a repeat prescribing course where she had learnt that, in general, drugs with addictive potential such as benzodiazepines and certain antidepressants should not be on the repeat list. She said this happened often in her practice but did not feel able to raise the matter with the doctors.

### Convergence and divergence between types of routine

In organisational life, divergences between what people say they do, what they actually do, and the official protocol are inevitable. We were struck in some practices by the broad convergence between ostensive, performative, and proxy routines, and in others by their noticeable divergence.

Beech was an example of relative convergence. The repeat prescribing protocol not only encouraged "alertness" in reception staff but also acknowledged the uncertainty inherent in many requests for repeat prescribing, and identified this uncertainty ("anything you're not sure about") as a reason to refer the request to a doctor. Staff described a working system for passing problem scripts to the doctor, and we observed this process working relatively smoothly and informally as doctors passed through the cramped but congenial reception space. An artefact (the repeat alert, fig 2) had been designed, which formalised and supported the "alertness" expectation, helped to achieve consistency between reception staff when applying judgment in uncertain situations, and formally designated the management of uncertainty as doctors' work. We speculate that this low tech but organisationally sophisticated artefact explains why problem scripts in this practice were dealt with in a relatively unproblematic way.

Elm, in contrast, was an example of relative divergence between the different types of routine. Receptionists were unaware of the repeat prescribing protocol and often could not make sense of what they were supposed to do. They put in much emotionally laden work oriented to assuring quality and safety (as exemplified by the ubiquitous but largely ad hoc post-it notes). But importantly, no effective mechanism was in place for this work to be rendered visible to clinicians, who remained largely unaware of its existence—a source of stress and frustration among the receptionists.

### Evolving routines and organisational learning

Organisational life is never static: routines are always waxing or waning (that is, they are being actively shaped, refined, and improved by staff and patients, or they are slowly falling into disuse—and sometimes these opposing trends are operating in different parts of the organisation).[47] In Beech we were struck by the many examples of active shaping of the routine by staff (and, to a lesser extent, patients). Contingencies or problems likely to arise within the routine were planned for in the formal protocol and had become incorporated into the ostensive and performative routines in a way that created space for both individuals and the organisation as a whole to learn and change every time the routine was enacted. The repeat alert closed a learning loop almost every time a query was raised, since it structured a process whereby the receptionist received an instruction or comment from the doctor that might help solve future instances of similar problems. Seeking the informal advice of a doctor was also an expected and inevitable part of the routine; we observed many small scale instances in which receptionists gained explicit or tacit knowledge and (as they did so) their part in the routine evolved and sharpened.

In the other practices we observed some evolution of the routine over the observation period, but individual and organisational learning was less evident. During our observation in Dale, for example, the senior partner issued a request that when alerting the doctors to overdue drug reviews receptionists should also include the date and value of a patient's last test or blood pressure reading. Although this may have increased efficiency by saving doctors' time, the change was not accompanied by a feedback loop whereby receptionists would be advised whether their additional effort reduced the need for doctors to consult patients' records.

### Discussion

Our study reveals the social complexity inherent in the task of repeat prescribing and the extent to which the quality and safety

of repeat prescribing depends not only on formal protocols and standard operating procedures but on collaboration between doctors, receptionists, and technology. This includes important "hidden" creative work by front line reception staff. Our findings raise some important areas for critical reflection that are relevant to practitioners and researchers.

The particular strength of ethnographic methods lies in the capacity for illuminating the details of real life practice as it actually happens. We explored the interplay and tension between strangeness and familiarity in an effort to make sense of everyday practices, and hope that this prompts new ways of looking at, and thinking about, repeat prescribing and issues of quality and safety for both practitioners and researchers. This study has taken us into areas of practice that are typically difficult to access and under-researched, despite being integral to prescribing practices in primary care.

With the exception of Elm practice, our study sites were larger (and potentially more complex) than the average UK practice, and the willingness of staff to be observed may reflect characteristics of practice that are atypical. If electronic health records become more widely integrated with pharmacy systems, then repeat prescribing routines will look different again. We make no claim that a detailed study across four practices yields generalisable truths about how repeat prescribing should be done in all practices. However, our study reflects daily realities that are likely to resonate with the experience of many practitioners in the United Kingdom and, by bringing new perspectives on what is often taken for granted, we believe that it can prompt critical reflection on research and practice, which is widely relevant and important, regardless of differences in local context.

### "Hidden" work bridges the model-reality gap

Our study found a substantial model-reality gap between, on the one hand, formal repeat prescribing protocols and the assumptions about roles and responsibilities that are built into the electronic patient record and, on the other hand, the real time activity and collaboration that actually unfolds around repeat prescribing, which is typically messy and unpredictable. Managing the demands of doctors and patients (which sometimes compete) alongside the tension between following a protocol and getting a job done is emotionally laden work. Receptionists and administrators assume responsibilities and make judgments (usually about when and how to prompt general practitioners to check particular items or make decisions) which are, on the whole, neither officially recognised nor remunerated. Despite not having formal accountability for certain aspects of quality and safety, reception staff consider themselves informally accountable to the patient, not least because in this regard they perceive deficiencies in the performance of clinicians.[52] Similar hidden work by relatively low status, mostly female staff has been described in relation to other aspects of healthcare[53][54] and the collaborative use of technologies[55] but not in relation to administrative input to repeat prescribing.

### Repeat prescribing is a fluid and negotiated category

Our findings challenge the notion of the repeat prescription as a definitive and unambiguous category defined in technological terms ("prescriptions printed by a practice computer from its repeat prescribing program," as illustrated by Clover) and sometimes support a more traditional and pragmatic definition ("prescriptions issued without contact with a clinician," as illustrated by Elm, Dale, and Beech). Our findings also challenge

the concept of the electronic patient record as a simple and reliable data container that faithfully records and assures past decisions made by doctors about who may receive a repeat prescription. The key finding here is not that the various categories on the electronic record (repeat, current, past) are being violated (which would prompt the conclusion that they should be more tightly defined and policed), but that these categories are more fluid and negotiated than the technology implies or previous research has suggested and that they evolve over time. A repeat drug may not be a repeat at all if the patient does not request it (or take it). Conversely, using the repeat prescribing routine to ask for a past drug opens up the opportunity for the drug to become a repeat.

### The protocol is only one aspect of safe organisational practice

Our study shows how routines are embedded in three types of organisational structure: technological or artefactual (for example, the electronic record, the repeat alert, and even the post-it note), cultural (for example, social hierarchies, practice ethos, and values as they are understood by staff), and coordination and control (infrastructures and ways of working that aim to achieve interdependence of different individuals and routines).[56] These structures exist in a dynamic interplay; they shape and are shaped by repeated iterations of routines.[57] Much potential to improve quality and safety in repeat prescribing seems to lie in the cultural and coordination and control structures. In particular, safety seems to be assured not merely by the protocols themselves but by an environment of effective, two way, and blame free communication, preferably with feedback loops that encourage and enable learning by all parties and that acknowledge what kinds of uncertainty may arise and whose responsibility it is to deal with these. In a noticeably hierarchical practice (Elm) in which lines of communication were not well established and were largely one way, the routine prescribing played out as perplexing and stressful for receptionists, and appeared vulnerable to error.

In the examples we witnessed the final decision about whether a drug became a repeat one was always made by the general practitioners, although they sometimes had actively to undo an action if they disagreed with the receptionist's decision. The implications for patient safety here are more subtle than first appears. On the one hand the practice of a general practitioner being asked to endorse actions initiated by a receptionist (which seems common although not universal) contains potential for serious errors. On the other hand receptionists' active rather than passive engagement with the repeat prescribing routine, and especially their ability to adjust it to the local contingencies they meet on a daily basis, is likely to contribute significantly to what Weick and Roberts have called "collective mind," defined as "a pattern of heedful interrelations of actions in a social system" in which actors "construct their actions (contributions), understanding that the system consists of connected actions by themselves and others (representation), and inter-relate their actions within the system (subordination)"—a crucial component of a safety critical system.[58] As our findings from Clover illustrate, even in a well defined routine with clear lines of two way communication, prescribing clerks who are afforded relatively little autonomy may (understandably) fail to raise alerts when they see what they regard as undesirable practice.

This study has affirmed a previous observation that the use of computers to support individual tasks in the workplace is often a highly social process in which co-located staff help troubleshoot both the technology and the problem it is being

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used to solve.[59] The design of new safety features for repeat prescribing needs somehow to embrace the reality of administrative staff discussing ambiguous cases in a crowded room while multi-tasking other activities.

We have also illustrated the ecological flexibility of paper and the contribution of mundane, low technology artefacts to assuring the quality and safety of the automated repeat prescribing routine. Other research has shown the value of paper in augmenting electronic formats in complex collaborative work, especially in a context where computing capacity and physical space are stretched almost to their limits and hot desking is the norm.[60 61] Although the electronic record seems to offer secure access, unambiguous categories and evidence based decision support, paper can be shifted physically to follow people or processes (for example, placed in a box designated as urgent or positioned strategically next to the coffee), annotated with free text, and used as interim material when the system is down. Paper is also free of the (perceived) constraints that electronic surveillance places on staff. In one nursing home study, a paperless system was introduced with the goal of improving safety around handovers, but paper records and artefacts (especially post-it notes) were subsequently reintroduced after a series of critical events.[62]

## One size does not fit all

The variability between the four practices in our sample (and the fact that certain components of the routine worked in one practice but not in another) suggests that there is no best way of running repeat prescribing. Telephone and online requests worked in Clover not because these methods were inherently safe and effective (indeed, telephone requests have been identified as particularly vulnerable to error[63]) but because the organisational context, physical layout, staffing structure, and accepted ways of working supported a technology dominant prescription request process. In Beech, all these factors played out differently and combined to make a technology-light process safer and more efficient in this organisational context.

The literature on patient safety suggests that inflexible safety features built into electronic records may actually threaten safety for several reasons, including creating over-reliance on the technology, over-simplifying complex processes, altering workflow practices, and reducing redundancy—that is, two separate individuals checking a process at different stages in a pathway.[29 64 65] This was illustrated in Clover with respect to drug review, where a tightly automated repeat prescribing routine was linked to the assumption that it is solely the doctor's job to check overdue drug review dates before signing (and that this is inherently safer) and to a wider organisational culture where technology and inflexible standards were highly valued.

## The importance of resourcing the routine

The literature on organisational sociology suggests that routines must be adequately and proactively resourced, not only with traditional allocative resources, such as money or knowledge, but also relational resources, such as trust, respect for skills, and complementarity.[47] The sophisticated repeat prescribing routine in Beech provides evidence that attention has been paid to this resourcing, and that the routine incorporates a balance of stability and yet scope for organisational learning (and therefore change). In Elm, it would seem that the routine has not benefited from the same resourcing, resulting in wide variation in performances, much additional demand on receptionists to draw on their own resourcefulness, less scope for wider organisational learning, and potential vulnerability to

error. Our research highlights the importance of ensuring that training for repeat prescribing goes beyond the technology and the protocol and embraces its inherent complexities, especially the management of uncertainty and the need for what one researcher has described as "practical judgment."[66]

## Conclusion

In conclusion, reception and administrative staff make important "hidden" contributions to repeat prescribing in general practice. Although not formally accountable for prescriptions signed by doctors, these staff consider themselves informally accountable to patients for the quality and safety of these contributions. This research suggests that studying technology-supported work routines that appear mundane, standardised, and automated, but which in reality are socially complex requiring a high degree of local tailoring and judgment from frontline staff, opens up a relatively unexplored agenda for research in patient safety.

1  Audit Commission. A prescription for improvement: towards more rational prescribing in general practice. Stationery Office, 1994.
2  Harris CM, Dajda R. The scale of repeat prescribing. *Br J Gen Pract* 1996;46:649-53.
3  De Smet PA, Dautzenberg M. Repeat prescribing: scale, problems and quality management in ambulatory care patients. *Drugs* 2004;64:1779-800.
4  National Audit Office. Prescribing costs in primary care. Stationery Office, 2007.
5  Taylor RJ. Repeat prescribing—still our Achilles' heel? *Br J Gen Pract* 1996;46:640-1.
6  Spencer R, Avery A, Serumaga B, Crowe S. Prescribing errors in general practice and how to avoid them. *Clin Risk* 2011;17:39-42.
7  Garfield S, Barber N, Walley P, Willson A, Eliasson L. Quality of medication use in primary care—mapping the problem, working to a solution: a systematic review of the literature. *BMC Med* 2009;7:50.
8  Smith J. Building a safer NHS for patients: improving medication safety. Stationery Office, 2004.
9  Avery T. Avoidable prescribing errors: incidence and the causes. *Prescriber* 2010;21:52-5.
10  Payne RA, Avery AJ. Polypharmacy: one of the greatest prescribing challenges in general practice. *Br J Gen Pract* 2011;6:83-4.
11  Howard R, Avery A, Bissell P. Causes of preventable drug-related hospital admissions: a qualitative study. *Qual Saf Health Care* 2008;17:109-16.
12  Avery AJ, Rodgers S, Heron T, Crombie R, Whynes D, Pringle M, et al. A prescription for improvement? An observational study to identify how general practices vary in their growth in prescribing costs. *BMJ* 2000;321:276-81.
13  Saastamoinen L, Enlund H, Klaukka T. Repeat prescribing in primary care: a prescription study. *Pharm World Sci* 2008;30:605-9.
14  Zermansky AG. Who controls repeats? *Br J Gen Pract* 1996;46:643-7.

**What is already known on this topic**

The quality and safety of repeat prescribing are well recognised important concerns

Electronic patient records and formal protocols are sometimes assumed to make prescribing safer by reducing human error

**What this study adds**

Repeat prescribing is a complex technology-supported social practice, requiring collaboration between clinicians and reception staff

A model-reality gap exists between formal prescribing protocols and the real time activity of repeat prescribing

Bridging the model-reality gap requires creative work by receptionists, of which clinicians may be unaware

15  Whitelaw FG, Nevin SL, Milne RM, Taylor RJ, Taylor MW, Watt AH. Completeness and accuracy of morbidity and repeat prescribing records held on general practice computers in Scotland. Br J Gen Pract 1996;46:181-6.

16  Howard RL, Avery AJ, Slavenburg S, Royal S, Pipe G, Lucassen P, et al. Which drugs cause preventable admissions to hospital? A systematic review. Br J Clin Pharmacol 2007;63:136-47.

17  Avery AJ, Savelyich BS, Sheikh A, Cantrill J, Morris CJ, Fernando B, et al. Identifying and establishing consensus on the most important safety features of GP computer systems: e-Delphi study. Inform Prim Care 2005;13:3-12.

18  Zermansky AG, Petty DR, Raynor DK, Freemantle N, Vail A, Lowe CJ. Randomised controlled trial of clinical medication review by a pharmacist of elderly patients receiving repeat prescriptions in general practice. BMJ 2001;323:1340.

19  Saastamoinen LK, Klaukka TJ, Ilomaki J, Enlund H. An intervention to develop repeat prescribing in community pharmacy. J Clin Pharm Ther 2009;34:261-5.

20  Newby DA, Robertson J. Computerised prescribing: assessing the impact on prescription repeats and on generic substitution of some commonly used antibiotics. Med J Aust 2010;192:192-5.

21  Wessell AM, Nietert PJ, Jenkins RG, Nemeth LS, Ornstein SM. Inappropriate medication use in the elderly: results from a quality improvement project in 99 primary care practices. Am J Geriatr Pharmacother 2008;6:21-7.

22  Avery AJ, Rodgers S, Cantrill JA, Armstrong S, Elliott R, Howard R, et al. Protocol for the PINCER trial: a cluster randomised trial comparing the effectiveness of a pharmacist-led IT-based intervention with simple feedback in reducing rates of clinically important errors in medicines management in general practices. Trials 2009;10:28.

23  Cox S, Wilcock P, Young J. Improving the repeat prescribing process in a busy general practice. A study using continuous quality improvement methodology. Qual Health Care 1999;8:119-25.

24  Hewitt H, McCloughlan L, McKinstry B. Front desk talk: a discourse analysis of receptionist-patient interaction. Br JGen Pract 2009;59:571-7.

25  Hesselgreaves H, Lough M, Power A. The perceptions of reception staff in general practice about the factors influencing specific medication errors. Educat Primary Care 2009;20:21-7.

26  Wolf ZR. Pursuing safe medication use and the promise of technology. Medsurg Nurs 2007;16:92-100.

27  Benjamin DM. Reducing medication errors and increasing patient safety: case studies in clinical pharmacology. J Clin Pharmacol 2003;43:768-83.

28  Hidle U. Implementing technology to improve medication safety in healthcare facilities: a literature review. J NY State Nurses Assoc 2007;38:4-9.

29  Ash JS, Berg M, Coiera E. Some unintended consequences of information technology in health care: the nature of patient care information system-related errors. J Am Med Inform Assoc 2004;11:104-12.

30  Grimsmo A. [Electronic prescriptions—without side-effects?]. Tidsskr Nor Laegeforen 2006;126:1740-3.

31  O'Malley P. Think bar-code medication administration eliminates adverse drug events? Think again! Clin Nurse Spec 2008;22:269-70.

32  Chuo J, Hicks RW. Computer-related medication errors in neonatal intensive care units. Clin Perinatol 2008;35:119-39, ix.

33  Han YY, Carcillo JA, Venkataraman ST, Clark RSB, Watson RS, Nguyen TC, et al. Unexpected increased mortality after implementation of a commercially sold computerized physician order entry system. Pediatrics 2005;116:1506-12.

34  Savage I, Cornford T, Klecun E, Barber N, Clifford S, Franklin BD. Medication errors with electronic prescribing (eP): two views of the same picture. BMC Health Serv Res 2010;10:135.

35  Redwood S, Rajakumar A, Hodson J, Coleman J. Does the implementation of an electronic prescribing system create unintended medication errors? A study of the sociotechnical context through the analysis of reported medication incidents. BMC Med Inform Decis Mak 2011;11:29.

36  Swinglehurst D, Greenhalgh T, Myall M, Russell J. Ethnographic study of ICT-supported collaborative work routines in general practice. BMC Health Serv Res 2010;10:348.

37  Greenhalgh T, Swinglehurst D. Studying technology use as social practice: the untapped potential of ethnography. BioMed Central Med 2011;9:45.

38  Stake RE. Qualitative case studies. In: Denzin NK, Lincoln YS, eds. The Sage handbook of qualitative research. Sage, 2005:443-66.

39  Pope C. Conducting ethnography in medical settings. Med Educ 2005;39:1180-7.

40  Barley SR, Tolbert PS. Institutionalization and structuration: studying the links between action and institution. Organ Stud 1997;18:93-117.

41  Rose G. Deciphering sociological research. Sage, 1982.

42  Lee BK, Gregory D. Not alone in the field: distance collaboration via the internet in a focused ethnography. Int J Qual Methods 2008;7:30-46.

43  Klein HK, Myers MD. A set of principles for conducting and evaluating interpretive field studies in information systems. Mis Quarterly 1999;23:67-93.

44  Ormrod S. Organisational culture in health services policy and research: 'third way' political fad or policy development? Policy Polit 2003;31:227-37.

45  Czarniawska B. A theory of organizing. Edward Elgar Publishing, 2008.

46  Feldman M. A performative perspective on stability and change in organizational routines. Ind Corp Change 2003;12:727-52.

47  Greenhalgh T. Role of routines in collaborative work in healthcare organisations. BMJ 2008;337:a2448.

48  Feldman MS. Organizational routines as a source of continuous change. Organ Sci 2000;11:611-29.

49  Pentland BT, Feldman M. Organizational routines as a unit of analysis. Ind Corp Change 2005;14:793-815.

50  Anon. Procedures to simplify the work involved in issuing repeat prescriptions. Good medical practice. General Medical Council, 2008.

51  Goffman E. On face-work. Interaction ritual: essays on face-to-face behaviour. Pantheon Books, 1967:5-45.

52  Hor S, Iedema R, Williams K, White L, Kennedy P, Day AS. Multiple accountabilities in incident reporting and management. Qual Health Res 2010;20:1091-100.

53  Henwood F, Hart A. Articulating gender in the context of ICTs in health care: the case of electronic patient records in maternity services. Crit Soc Policy 2003;23:249-67.

54  Lee-Treweek G. Bedroom abuse: the hidden work in a nursing home. In: Johnson J, De Souza C, eds. Understanding health and social care. Sage, 1998.

55  Schwarz H. The hidden work in virtual work. Working paper 30. Program in Science, Technology and Society. Massacheusetts Institute of Technology, 2002. Available at http://web.mit.edu/sts/pubs/pdfs/MIT_STS_WorkingPaper_30_Schwarz.pdf.

56  Howard-Grenville JA. The persistence of flexible organizational routines: the role of agency and organizational context. Organ Sci 2005;16:618-36.

57  Giddens A. The constitution of society: outline of the theory of structure. University of California Press, 1984.

58  Weick KE, Roberts KH. Collective mind in organizations: heedful interrelating on flight decks. Admin Sci Quart 1993;38:357-81.

59  Brown JS, Duguid P. The social life of information. Harvard Business School Press, 2002.

60  Luff P, Heath C, Greatbatch D. Tasks-in-interaction: paper and screen based documentation in collaborative activity. Proc Comput Support Coop Work 1992;92:163-70.

61  Berg M, Toussaint P. The mantra of modelling and the forgotten powers of paper: a sociotechnical view on the development of process-oriented ICT in health care. Int J Med Inform 2003;69:223-34.

62  Obstfelder A, Moen A. The electronic patient record in community health services—paradoxes and adjustments in clinical work. Stud Health Technol Inform 2006;122:626-31.

63  Green S, Goodwin H, Moss J. Problems in general practice—medication errors. Medical Defence Union, 1996.

64  Koppel R, Metlay JP, Cohen A, Abaluck B, Localio AR, Kimmel SE, et al. Role of computerized physician order entry systems in facilitating medication errors. JAMA 2006;293:1197-203.

65  Sittig DF, Ash JS, Zhang J, Osheroff JA, Shabot MM. Lessons from "Unexpected increased mortality after implementation of a commercially sold computerized physician order entry system." Pediatrics 2006;118:797-801.

66  Wagenaar H. "Knowing" the rules: administrative work as practice. Public Admin Rev 2004;64:643-55.

# Figures



**Aims:**
1 Explore use of electronic patient records in repeat prescribing
2 Describe dynamics of the socio-technical system
3 Identify human and technical influences on quality and safety
4 Develop theory and method to inform further research

**Design:**
Multi-site case study in UK general practice
Four participating practices
• Dale    • Elm
• Beech   • Clover

Focus on collaborative work routines for generating, checking, authorising, and issuing repeat prescriptions

**Method:**

| Data sources | Phase 1: familiarisation | Phase 2: mapping | Phase 3: analysis | Phase 4: synthesis |
|---|---|---|---|---|
| Narrative accounts | Immersion in data by repeated reading and annotating | Ostensive routine | Compare and contrast different versions of the routine and place these in context using narrative summary | Compare multiple competing versions of the routine in one site with those in other sites |
| Ethnographic field notes | | Performative routine | | |
| Artefacts (for example, protocols) | | Proxy routine | | |
| Background documents (for example, policies) | | Wider context | | |

**Outputs:**
1 Rich descriptions of the repeat prescribing routine in four contrasting settings in UK general practice
2 Insights into how the socio-technical system operates dynamically and assures quality and safety (or not)
3 Specific aspects of the socio-technical system that offer potential to improve quality and safety
4 A transferable methodology for detailed qualitative study of technology supported work routines in healthcare

**Fig 1** Study protocol



**BG   JH   GJ   BT   LY   VR** [initials of doctors]
**Name:**
**Date of birth:**

| | |
|---|---|
| Due for review | |
| Item over-requested | |
| Computer warning | |
| Patient requested | |
| Change to repeat | |
| See doctor next time | |
| See nurse next time | |
| Change review date | |
| Other | |

**Fig 2** Prescribing alert slip from Beech practice. This artefact, a photocopied slip of paper, had been developed by practice staff to manage requests for repeat prescriptions that were in some way problematic
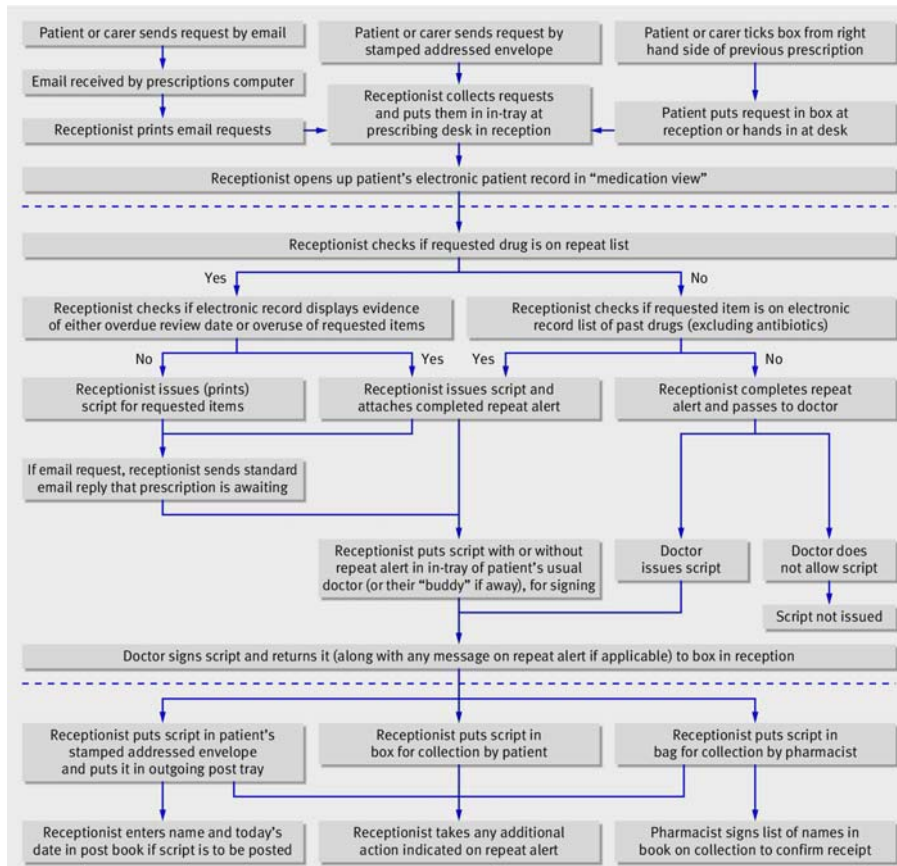
**Fig 3** Ostensive routine for repeat prescribing in Beech practice. Area between horizontal broken lines represents the core part of the routine



**Your repeat medication**

Select the medicines you want to request, then click the "make request" button

| Medicine | Details | Last issued |
|---|---|---|
| Paracetamol tablets 500 mg | One to be taken twice a day, 28 tablets | 11.06.2008 |
| Calcipotriol scalp solution 50 µg/mL | bd, 40 mL | 11.06.2008 |
| Ciprofloxacin tablets 500 mg | Two to be taken twice a day, 30 tablets | 03.07.2008 |
| Salbutamol Cfc-free inhaler 100 µg/puff | As required, 1 inhaler | 03.07.2008 |
| Beclometasone inhaler 250 µg/actuation | Two sprays twice a day, 2 x 1 inhaler | 03.07.2008 |

If you would like to include a message relating to your request, please do so below:

If your doctor works at more than one place PLEASE remember to say where you usually collect your repeat prescriptions

**Fig 4** Repeat prescription request screen in electronic patient record in EMIS Access, accessible online by patient

# Appendix 4

## Opening up the 'black box' of the electronic patient record: A linguistic ethnographic study in general practice

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*Abstract*

*One of the most pervasive changes in general practice is the introduction of the electronic patient record (EPR). The EPR supports both immediate clinical and anticipatory care (e.g. management of risk factors). Incorporating the EPR into social interaction is a complex task which is achieved discursively, clinician and patient responding to interactional contingencies as the consultation unfolds. Clinicians are presented with a 'dilemma of attention' as they seek to deal with the immediacy ('here and now') of the interpersonal interaction and the institutional demands ('there and then') of the EPR.*

*We present data analysis which illuminates the EPR as an important presence in the clinic consultation context, one which places material and textual demands. Developing previous work on the triadic (three party) consultation, our novel multimodal analysis of the EPR-in-use suggests there is value in considering the EPR as a collection of silent but consequential voices. Micro-analytic attention to the way in which these different voices are managed, combined with understandings drawn from ethnographic observation of the primary care context, reveals the EPR as exhibiting a previously under-explored kind of 'agency' within the consultation.*

*Keywords: electronic patient record, primary health care, discourse analysis, clinician-patient communication, linguistic ethnography*

## 1.    Introduction

Electronic Patient Records (EPRs) are used extensively in UK primary healthcare. Their use has grown significantly in recent years in the UK, partly reflecting the Quality and Outcomes Framework (QOF), introduced with a new General Practitioner (GP) contract in 2004. The EPR facilitates recording of coded (hence transportable) searchable data to support patient care and to generate clinical and organizational performance indicators for QOF (Department of Health 2009). QOF financially rewards GPs who meet defined targets.

Coiera (2003), working within a health informatics tradition, regards the EPR as a technology which supports a range of clinical activities that use and communicate information. Beyond the predominantly positivist biomedical informatics tradition lies a vast and heterogeneous literature which we have recently drawn together in a qualitative systematic review, highlighting the tensions and paradoxes in EPR research (Greenhalgh *et al*. 2009). Researchers from different disciplines make sense of the EPR in different ways, reflecting different underlying philosophical assumptions about the nature of reality (ontology) and how that reality might be known (epistemology).

For example, in positivist traditions the EPR represents a single knowable reality. In actor network theory (ANT) the interest is in an inherently unstable and dynamic network comprising human and non-human actors (or *actants*) and in the relationships between them – in what people and artefacts *become* through their inter-relationships (Berg 1998; Bruni 2005). Scholars of computer-supported co-operative work (CSCW) have identified technology as *inseparable* from social practice and have developed the concept of 'artful' integration into new forms of practices (Suchman *et al*. 1999). The EPR may be one of many artefacts relevant to a practice, a point Bruni (2005) makes in an account of methodological aspects of shadowing software and clinical records. It is what Harré (2002) (writing from a semiotic-

discursive perspective) describes as a 'social substance' – defined in terms of the properties of a social world, or embedded in a narrative.

Research on communication in the consultation has tended to focus on the dyadic interaction between clinician and patient. In the 1960s, Balint (1964) described the therapeutic potential of this relationship built through interaction. But the situation is becoming more complex. In the 1990s, Greatbatch *et al.* (1993) identified ways in which patients recurrently coordinate their actions with visible and audible aspects of the doctor's use of a computer. The computer has been characterized as a 'magic box' – to which the clinician might nod or point whilst presenting his or her own abstractions (Als 1997), or as intruder or interloper (Sullivan 1995; Booth *et al.* 2004; Pearce *et al.* 2008a).

There is growing interest in the notion of the 'triadic' consultation, in which the computer is regarded as a third party (Scott and Purves 1996; Ventres *et al.* 2006; Margalit *et al.* 2006; Pearce 2007). Scott and Purves (1996) introduced a 'three way interactive model' in which each component is regarded as having an effect on relationships between the other two, arguing that it is essential to pay attention to the third ubiquitous component. Time spent gazing at the computer screen is inversely related to measures of engagement in psychosocial questioning and emotional responsiveness (Margalit *et al.* 2006). When a doctor's attention turns to the computer, subtle but important communication difficulties occur for patients as they describe their presenting complaints (Ruusuvuori 2001). Doctors are unable simultaneously to attend to the demands of both patient and computer, and adopt various strategies – 'controlling', 'opportunistic' or 'ignoring' – to manage the transition between the two (Booth *et al.* 2004). Clinicians may show different styles ('informational', 'managerial' or 'interpersonal') for involving the computer in the consultation (Ventres *et al.* 2006).

Pearce has drawn on Goffman's (1959) dramaturgical framework in a video study of what he calls the 'new' consultation, describing different 'keys' adopted by doctor, patient and computer (Pearce 2007; Pearce et al. 2008b). Doctors are described as 'unipolar' (lower body remains fixed on computer) or 'bipolar' (lower body rotates between patient and computer); patients are 'triadic' (inclusive of the computer) or 'dyadic' (focussed on the doctor) and the computer is 'passive' or 'active'. The opening of the consultation is a time for negotiation of roles with 'doctor-openings', 'patient-openings' or 'computer-openings'. The consultation does not begin, says Pearce, until all three actors are 'on the stage' (Pearce 2007).

In most of these studies, interest has focussed on what we would regard as the *material* aspect of the EPR ('the computer') – the conduct involved in engaging with it and how doctors and (less frequently) patients manage this in the consultation; the EPR itself remains something of a 'black box'. Studies tend to be underpinned by approaches to doctor-patient communication which assume universal modes of conduct, or which regard the consultation as being clearly defined into discrete phases. Typically, certain kinds of doctor behaviours are aligned with institutionally defined descriptive categories, such as patient-centredness, an ambiguous construct fraught by lack of theoretical clarity (Mead and Bower 2000). Integrating a technology like the EPR always requires human work to recontextualize knowledge for different uses within complex social settings (Greenhalgh *et al.* 2009). To date there has been little research published on the situated micro-practices that constitute this work. We seek to extend understanding of this area and open up the 'black box' of the EPR and have developed a novel methodological approach to facilitate this.

## 2.    Developing a theoretical framework for analysis

We approached the triadic consultation from a perspective that the consultation is not only a social encounter, but is *constituted through* communication. Goffman (1966) introduced the notions of *engagement* and *involvement* which he defined as follows:

> To be engaged in an occasioned activity means to sustain some kind of cognitive and affective engrossment in it, some mobilization of one's psychobiological resources; in short it means to be *involved* in it. (Goffman 1966: 36)

Goffman (1981) distinguished between 'ratified' (official) and 'non ratified' (unofficial) participants, 'addressed' and 'unaddressed' recipients within a social gathering or 'participation framework'. He expanded the notion of speaker to distinguish between the 'animator' (person who speaks), the 'author' (person whose beliefs/sentiments are being expressed) and the 'principal' (person whose position

is established by the words, or socially responsible for the action done by the talk) in what he called the 'production format' of an utterance (Goffman 1981).

Goodwin (1981), in his work on engagement frameworks, argued for the importance of gaze in interaction – for example, the role of gaze of the non-speaking party in displaying 'hearership' and in establishing (and dissolving) engagement frameworks. He was critical of Goffman's failure to expand the role of the recipient to the same extent as that of the speaker, and suggested that participation be analysed as a temporally unfolding process, with a focus on *embodied activity*, which not only 'recovers the cognitive life of the hearer' but also reveals interaction as a 'multi-modal, multi-party field of activity', in which participants build relevant action together (Goodwin 2007: 25). In particular, he drew attention to the importance of expanding analysis to include the actions of silent (though consequential) participants, such as the party whose talk is being quoted. Combining the insights of (Vološinov V 1973)[1] regarding the dialogic nature of language, and the word as a 'two-sided act… the product of the reciprocal relationship between speaker and listener' (1973: 86) with his commitment to a multimodal analysis, Goodwin (2007) offered a more comprehensive notion of participation and communication.

The insights of Goffman and Goodwin (which preceded the arrival of technologies such as the EPR) are a useful point of departure for microanalysis. However, in the 'triadic' consultation, voices and identities (such as 'doctor' and 'patient') emerge as being distributed between persons and technologies in complex ways. The EPR is a source of absent or silent voices; identifying such voices is of particular interest to the notion of 'agency' in the EPR.

### 3.   Method

We have adopted a linguistic ethnographic approach. The starting point of linguistic ethnography is that 'language and the social world are mutually shaping, and that close analysis of situated language use can provide both fundamental and distinctive insights into the mechanisms and dynamics of social and cultural production in everyday activity' (Rampton *et al.* 2004). Two methodological tenets help to define its remit:

- The context for communication should be investigated rather than assumed
- Analysis of the internal organization of verbal (and other kinds of semiotic) data is essential to understanding its significance and position in the world. Meaning is more than just 'expression of ideas' (Rampton 2007).

This approach suggests a need to pay close attention not only to the moment-by-moment contingencies which arise when the EPR is incorporated into the consultation, but also to the broader social context – the ways in which the 'triadic' consultation shapes and is shaped by wider institutional concerns. By opening up the EPR to scrutiny and studying not only its *material* dimension ('the computer') but the *textual* dimension which it displays, we can begin to explore the *nature* of its presence, and its reach within and beyond the consultation.

The first author spent approximately four months in each of two study sites conducting ethnographic observations in both clinical and non-clinical areas exploring the 'communicative ecology' – the communicative practices and wider organizational discourses within which particular interactions are situated (Gumperz 1999). Both study sites are urban group practices, delivering care to approximately 12,000 patients. Clinicians had been using electronic records (without paper notes) for several years. The clinical system in use was EMIS-LV, the most widely used system in UK general practice at the time of the study. Research ethics approval for the study was granted by Thames Valley Multi-centre Research Ethics Committee (06/MRE12/81 and subsequent amendments).

We undertook a combination of video-recording and screen capture of 54 consultations. Video offers particular advantages in the study of the EPR in the consulting room. Heath *et al.* (2007) have described its potential for illuminating the multi-modal character of medical work and giving access to the interplay of talk, the visual and the material.

Participants included 19 clinicians (12 GPs; 5 nurses; 1 nurse practitioner; 1 health care assistant) and 54 patients (of 85 who were invited). We recorded consultations using a small digital camcorder[2] with a wide angle lens. Space constraints in consulting rooms meant that an ideal camera position was
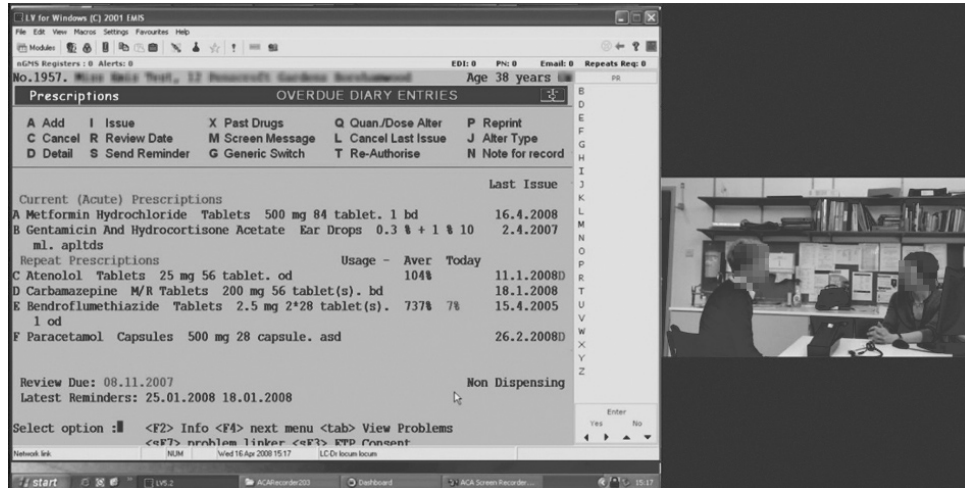
Figure 1. *A screen shot taken from a pilot video.*

sometimes impossible to achieve; as a methodological principle, discretion in placement of the camera was prioritized over fine-tuning the camera position.[3] A screen capture software tool was used to record EPR screen images as a video file.[4] Each consultation resulted in two digital video files which were synchronized and merged using video editing software (Adobe Premier Elements 4) such that the interaction between clinician and patient (the camcorder view) could be replayed alongside the view of the EPR (the screen capture view). This opens up the 'EPR-in-use' for analysis. A screen capture shot of a pilot video is shown in Figure 1. For reasons of patient confidentiality we are unable to reproduce screen shots of the interaction or the screen capture but incorporate as much detail as possible in transcripts.

## 4.    Early analytic insights

The first author familiarized herself with the dataset, playing and replaying each video and making brief viewing notes, highlighting contrasting uses of the EPR within consultations. Twelve consultations were transcribed in full, using conversation analytic conventions for talk (Atkinson and Heritage 1984), with detailed notes on bodily conduct and the

EPR screen. Different modes were documented in columns, using time as an anchor, a method suggested by Jewitt for managing multimodal data (Jewitt 2006).

Early in our analysis we noted difficulty in 'pinning down' the EPR. Despite being a pervasive presence in many consultations, it exhibited a curious tendency to 'slip away' from the analytic gaze. The recursive nature of the relationship between EPR and clinician was evident as we found ourselves repeatedly asking the question: 'Who is shaping whom?' In line with previous studies of the EPR (Als 1997; Pearce 2007), we observed the EPR displaying a *kind of agency* in the consultation. The agency is not simply a property or attribute of the EPR (something the EPR *has*) but something which may come into being (or not) in the interaction and which demands a focus not on the EPR *per se* but on the social practices in which it is incorporated.

We identified a complex relationship between what we call the *material* and the *textual* properties of the EPR. By *material* properties we refer to the monitor, keyboard, mouse and the effect these have on bodily conduct. By *textual* properties we refer to the information contained – including medical notes, electronic forms, prompts and alerts. We mapped sequences of interaction, specifically highlighting the

material and textual roles of the EPR as the interaction unfolds.

## 5.    Data analysis

A key finding in our data is the extent to which clinicians must attend not only to the 'here and now' of the interpersonal interaction, but also to wider institutional concerns. The EPR is an important 'agent' in this, but its agency is often partial and highly contingent on the immediate social context of its use. We present our analysis of a short data extract which illustrates this.

The transcript below contains an important *crux,* or key moment of the consultation (Roberts *et al.* 2003) – the revelation that the patient had not fasted before the blood test. Transcribing conventions are in the appendix.

In this extract there is only one complete utterance, at 4.29, when the GP says '*oh weren't they?*', when the GP and the patient are focussing their visual attention on each other. The arrangements are more complex at all other points.

At 3.30, the GP's posture and gaze are towards the EPR, whilst the patient gazes towards the GP. Here the EPR is the 'object' of the GP's engagement and the material fact of the computer is rendered important. Robinson (1998) has suggested that patients have a *distributed existence,* such that a shift of attention from the *patient embodied* to the *patient in bureaucracy* (Ruusovuori [2001] prefers *patient inscribed*) does not map in any simple way to notions of engagement espoused by Goffman and Goodwin (Robinson 1998; Ruusuvuori 2001). Here, the patient remains the focus of the wider activity in the situation

if not the focus of the GP's gaze. Her continuing gaze at the GP suggests that this is acceptable within the activity framework of 'giving results'.

Through this turn we see the unfolding formulation of the GP's opinion. The patient cannot see the EPR, so she relies on the GP's recontextualization of it. The screen capture shows that her serum cholesterol is 10, LDL cholesterol > 7 and the GP has recorded a message for receptionists to convey to the patient if she phones requesting results ('*see doc please*'). A small 'alert box' displays throughout the entire consultation indicating that the patient is on a QOF register for hypertension, and that there are two outstanding QOF items which have not been attended to (namely 'notes summarization' and 'medication review'). The GP does not deal with these in this consultation but chooses to keep the 'alert' function enabled. It thus serves as a constant reminder of the QOF incentive scheme, whether or not the outstanding items are immediately relevant. The voice of QOF as important social context is one which the EPR delivers effectively into the 'here and now', whether or not the clinician responds. The EPR automatically runs daily background searches of the patient database, seeking specific coded items and comparing it with QOF standards.

The GP proceeds with a statement about cholesterol levels:

D:    uh well your l:ow density cholesterol is is quite high um::(.) over seven so::

This acts to present the GP in an expert role as interpreter of these results – the technical terms may well be unfamiliar to the patient, but it is precisely the potential for unfamiliarity that contributes to his positioning as expert, enhanced through the use of technology in establishing the 'fact' of the matter.

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**Scenario**

Follow up consultation between a male GP and a female patient. Patient has recently started treatment for newly diagnosed hypertension (high blood pressure). Six days earlier she visited the practice nurse for a blood test to measure her cholesterol.

The EPR is visible to the patient, but the seating arrangements are such that the patient cannot see the details of the EPR screen.

The GP has just explained that the cholesterol result is high and both GP and patient have expressed some surprise at this:

GP:    '*they turn out you've got quite ↑high cholesterol*'

P:    '*which seems really bizarre…cos I can't think of anything that I have*'

The patient explains that she eats '*loads of fruit, loads of veg*' then the GP enquires about family history of high cholesterol or heart problems (patient reports none).

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| T | D/P | Talk | Bodily conduct | Notes on EPR screen |
|---|---|---|---|---|
| 3.30 | D | uh well yo:ur low density cholesterol | D -> EPR; P -> D | EPR showing recent previous consultations. Two entries dated 6 days ago. 1) Nurse entry. *Blood sample taken. Biochemical screening test (fasting cholesterol). Text note: will make app in a week to see Dr X* |
| | | is is quite high um::(.) over seven so:: | D sits back in chair -> EPR | 2) "Path Lab" entry displaying blood test results. Includes: *Cholesterol 10, Serum LDL cholesterol >7 see doc please.* |
| | | ((sniff)) | D scratches nose, raises eyebrows | An "alert" is displayed throughout the consultation in a small box at the bottom right of the screen. It shows that the patient is on a QOF register for hypertension and that there are two QOF items outstanding (notes summarised; recent medication review) |
| | | although ju:st because you've got high blood pressure you don't necessarily | | |
| | | need anything to lower the cholesterol (.) | D turns gaze partially -> P | |
| | | .hh > even though you've got hypertension< | D returns gaze -> EPR | |
| | | I think you'll probably be well advised to have something t- to lower it↑= | D frowns throughout | |
| 3.49 | P | =°°yeah°° mean as a child I couldn't take (.) milk and I still don't like milk | P -> forwards; D -> EPR | |
| | D | no↓ | | |
| | | (1) | | |
| 3.54 | P | ehm (.) I can take (0.4) sort of hot milk in custard (0.4) but someone gave me a glass of hot milk and I would really be ill. | | |
| 4.01 | P | ha | P -> D; D -> EPR | |
| 4.02 | D | right (.) yeah | | |
| 4.03 | | so maybe there was an intolerance right from a baby | | |
| | | ha | P smiles | |
| | | (0.2) | | |
| 4.07 | D | we↑↓ll | | |
| 4.08 | P | who kno↑ws °°ha ha°° | P shakes head slightly, smiling | |
| 4.09 | D | °°ha°° | D smiles, looking at EPR and leans forward towards screen, placing R hand on keyboard | |

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| | | | Key stroke | |
|---|---|---|---|---|
| | | ((click)) (1) | | Returns to today's consultation screen. "Problem Title" is automatically highlighted |
| 4.10 | D | °u::::hm° | | |
| 4.12 | | ((typing for 4.5 seconds)) | D -> EPR, typing / P looking ahead | "Problem title" selected, then enters keystrokes "*Framing*" – at which point EPR displays a pick list of 9 choices about cardiovascular risk (Framingham risk scores codes) |
| | | (0.5) | P - > keyboard | |
| 4.16 | P | I noticed when I was having my blood test | P -> forwards; D typing | D selects first choice, "*10 yr CHD risk (Estimate, Fram)*" from pick list |
| | | (1.0) | D looking at screen / P ->forwards, raises finger in air | A box appears on screen saying "Estimated 10 year CHD risk is 15% The system has calculated that: Average of last 2 systolic BPs is 145 The Total/HDL cholesterol ratio is 6.10 Stopped smoking for over a year, no ECG LVH, No diabetes Is the above information correct? (Y/N): |
| 4.20 | P | mm Nurse B*** | D -> EPR; P-> forwards and points with finger | Still showing the box above |
| | | was showing me (0.4) .hhh on the screen cos she was trying to work out what you wanted it said a <u>fasting</u> blood test (.) | P-> forwards / P points again on fasting | |
| | | but I didn't (.) ↑ <u>neither</u> of mine (.) were fasting blood tests | P shaking head; D turns to gaze at P | |
| 4.29 | D | oh weren't they? | D <-> P | |
| | P | no | | |
| 4.31 | D | oh right↓ | D looks back to screen; P -> D | |
| | | (1) | | |
| 4.33 | D | ((cough)) | D -> EPR; types keystroke | Consultation screen displays: "Additional: Est 10 yr CHD 15%" indicating that GP responded affirmatively to the question above |
| | | o:kay, well we'll do it again: (0.5) [then] in that case  [(( C)) | D sits more upright, keystroke, then rotates chair left away from P, reaching for something on desk with left hand | |
| | | [before] panicking or worrying too much about it↑  [(( C)) | | |

The GP softens the impact of the message through use of the words '*quite high*' and selection of the lowest (numerically speaking) of the two cholesterol results displayed in the EPR. The adjective *low* modifies the noun (cholesterol) and has a habitual sense; it relates to the *type* of cholesterol (low density cholesterol). The adjective *high* acts as a complement of the copular verb 'be' and is less permanent – the cholesterol has *become high*. The onus is on the patient to work out how something that is low could *also* be high. The GP is animator of these words, though we might consider authorship to be distributed, the GP and EPR being part of an interconnected technical apparatus linked electronically to a remote laboratory site.

The GP adds:

D:    '*al:though* just because you've got high blood pressure you don't nece*ssarily* need anything to lower the cholesterol(.) .hh >even though you've got hypertension< I think you'll probably be well advised t- to have something to lower it'

Here he is indexing a body of expert knowledge (the multi-factorial nature of cardiovascular risk) and although this culminates in the statement '*you'll probably be well advised t- to have something to lower it*', he leaves open some space for alternative possibilities, through the use of the words '*I think*' and '*probably*' and by prefacing this with a suggestion that '*you don't necessarily need anything*'. His close visual attention to the EPR, and his frown which begins at '*I think*' construct a sense of giving the result careful consideration, of active decision making (he *becomes* the 'principal' in Goffman's terms). He stops short of giving definitive advice to take medication.

Having already described the high cholesterol as '*bizarre*' in the context that she eats '*loads of fruit, loads of veg*', the patient latches in (at 3.49) to embark on a narrative which seeks to build an alternative explanation, one which is independent of her dietary habits. The GP remains oriented towards the EPR and through displaying a lack of hearership may contribute to the dissolution of the engagement framework as the patient responds by withdrawing her gaze and looking forwards to tell her story. We see a mutual display of visual inattention, the patient appearing to address an 'absent other'. This is a pattern we have observed across several consultations, which contrasts with Pearce's observation that patients tend to engage in 'screen watching' behaviour when the GP focusses on the computer (Pearce 2007; Pearce *et al.* 2008b). The patient uses escalating and increasingly

medical language as she progresses from a *dislike* of milk to being *really ill* to a suggestion of *intolerance* but the GP does not take up the narrative. Her final offering at 4.08 ('*who knows °°ha ha°°*') partly serves to diffuse the situation, but also suggests these results may not be open to the usual explanations.

This sequence ends definitively when the GP re-orients his body, leans forward towards the EPR, intensifying his attention towards it (hence away from the patient), and starts typing. The patient looks forwards again. Here we see the materiality of the EPR, and the GP's engagement with it as contributing to a closing down of the patient's narrative, as the GP 'holds the floor' (Edelsky 1981) with a 4.5 seconds period of typing. In line with observations of Greatbatch *et al.*, the patient remains sensitive to the material details of the interaction and anticipates the end of his typing, her next utterance occurring immediately after the GP hits the return key (Greatbatch *et al.* 1993).

In the section from 4.17–4.29, the patient offers some insight into the way in which voices travel beyond the consulting room via the EPR, in this instance conveying a message between the GP and the nurse. At 4.20, she hesitates as she recalls her previous appointment with the nurse:

P:    '*mm Nurse B\*\*\* was showing me (0.4) .hhh on the screen cos she was trying to work out what you wanted it said a fasting blood test (.) but I didn't (.) neither of mine (.) were fasting blood tests*'

In the current consultation, the GP has not shared 'the screen' (which Pearce [2007] calls the 'face' of the EPR) with the patient, so this is a delicate situation which she handles with care, since it draws attention to potentially different practices relating to screen-sharing. She explains that the blood test was not a fasting sample. The repair she makes (*but I didn't (.) neither of mine*) deflects the agency for this error away from herself. The patient then draws the EPR into a face-saving strategy (Goffman 1955). Firstly, she explains that the screen was only shared when the nurse was trying to work out what the GP wanted – thus legitimizing this activity within a framework of 'nurse carrying out GP's instructions' and saving the nurse's face. She then invokes the screen (i.e. the EPR) as the agent of the error – '*it said a fasting blood test*'. This contributes to saving the face of the GP (who may not have made his intentions clear). In the statement '*it said a fasting blood test*' although the patient is the animator, the author and principal

are unclear. By packaging her utterance in this way the patient politely succeeds in reframing a human error as a technical one. The patient attributes agency to the EPR, thereby lessening the awkwardness of a social situation.

Referring back to the screen capture data at 3.30, we see that a code has been entered into the EPR by the nurse: *Blood sample taken. Biochemical screening test (fasting cholesterol)* and as such the EPR offers a conflicting account of the situation. The EPR is not a simple representation of what went on but a recontextualization of the consultation which is further re-contextualized as the situation of its use changes over time (Linell 1998). It is possible that the patient has chosen this moment to reveal that she had not fasted because the immediate context suggests a decision about medication may rest on the result of this blood test and she is displaying doubt in its accuracy. The mismatch between the reality presented in the EPR and the reality being currently constructed is clear.

From 4.12 to the end, the screen capture data reveals that the GP, in attending to the EPR, is dealing with a concern which is not explicitly articulated in this interaction, but which he anticipated in his opening utterance when he said '*al:though just because you've got high blood pressure you don't necessarily need anything to lower the cholesterol*' – namely the relevance of interpreting the cholesterol result as one of numerous potential 'risk factors' for cardiovascular disease. By getting 'inside' the EPR we can see that in the consultation the GP is simultaneously attending to the 'here and now' of the immediate interpersonal interaction and the 'there and then' of negotiating the discourse of risk, a different framing of the patient.

This 'dilemma of attention' is most noticeable at 4.12 when the GP begins a period of typing, but can be traced back to earlier stages of the sequence, especially at 4.09 when he leans towards the EPR, rather than pursuing the patient's suggestion that milk intolerance may be relevant. This is an example of the recursive relationship between the EPR and the clinician. It is the GP who initiates the cardiovascular risk calculation; the EPR is *not* prescriptive in insisting this be done now (or indeed, at all). However the EPR then shapes the unfolding interaction. The calculation cannot be progressed (or even abandoned) without further interaction with the EPR. The GP hears what the patient says (as his utterance later at 4.29 shows) but is unable to make an appropriate

display of hearership. As Ruusuvuori has shown, the direction of the GP's gaze and attention at 4.16 may contribute to the lack of fluency in the patient's story as she starts to describe her previous consultation (Ruusuvuori 2001).

Again the agency of the EPR is partly dependent on the GP's actions. It presents the GP with a series of questions needed for the estimation of cardiovascular risk. In doing so, it brings a different voice into the consultation – one which represents the patient as one of a population, a series of numerical variables, and contributes to making sense of her cholesterol within a biomedical frame. This is a silent (but consequential) voice which sits uncomfortably alongside the patient's attempts at sense-making in terms of personal diet and possible milk intolerance. This 'silent' voice is effective in contributing to a silencing of the patient's voiced concerns, enacted through both the material and textual properties of the EPR.

The sequence ends:

D:  *O::K* ↓ *well we'll do it again: (0.5) [then] in that case*
                    *[(( C ))]*

    *[before] panicking or worrying too much about it* ↑
    *[(( C ))]*

The timing of the first keystroke after a pause accentuates the statement and contributes to a sense of awkwardness – the GP is thwarted in moving the patient's care forward. Our screen capture shows that with this keystroke the GP accepts the cardiovascular risk estimate as 15% as a coded entry. This occurs precisely as he suggests a need to repeat the test. At one level these actions are not necessarily contradictory; a non-fasting sample may be adequate for cardiovascular risk calculations. In the current context, however, it is a response to the patient's display of doubt; it would involve considerable loss of face to proceed without repeating the test. However, the '15% risk' becomes inscribed in the EPR before the test is repeated, and once again we see a mismatch between the reality constructed in the EPR and the reality constructed between the GP and the patient through their interaction.

## 6.   Discussion

Detailed multimodal analysis of this short extract highlights the interactional work which goes on as participants incorporate the EPR. The EPR displays a

pervasive material authority and contributes voices in its text which may remain silent but which are consequential to the interaction, both within and beyond the 'here and now'. It places significant demands upon the interaction and although it creates new opportunities (in this example for risk calculation and inter-professional messaging) it also places constraints (e.g. on the immediate communicative environment). The clinician may thus face a dilemma of attention, and in particular there may be a tension between different ways of framing the patient – in this example a tension between the patient's personal quest to make sense of the test result by reflecting on possible dietary influences and a more institutional framing of the patient within a risk discourse. The EPR emerges as inherently heteroglossic or multi-voiced – its 'sense' is governed as much by context as by text on any particular occasion of use (Bakhtin 1981). In this example, the meaning or 'sense' of the EPR changed on the discovery that the patient had not fasted before the blood test. Multiple and contradictory voices come into play.

To our knowledge this is the first study to report on combining video footage and contemporaneous screen capture within a discourse analysis of the EPR-in-use within contemporary primary care consultations. The technique opens up the possibility of a detailed view of what the clinician may see or do when s/he interacts with the EPR. The equipment we have used is technically low key, discrete, inexpensive, and available to any researcher without the need for special training. A video recording is always a partial view of the complex social world that is the focus of our research. As researchers we must consider the trade-off between the use of multiple cameras, which are more intrusive but may offer a more 'complete' view (de Lusignan *et al.* 2008) and our desire to observe the consultation relatively undisturbed by our technical interference. As a methodological principle we favoured the latter.

Our ethnographic observation, multimodal transcription and mapping of the consultation is a productive way of sensitizing us to the material and textual properties of the EPR and how they interact in complex ways, enabling a sophisticated and nuanced understanding of the 'new' consultation (Pearce 2007) and its 'new' recording practices.

The EPR occupies a critical and important place in contemporary primary care practices. It contributes to – and is incorporated into – the moment-by-moment unfolding of the interpersonal interaction; it also hosts and circulates institutional voices which reach within and beyond the consultation. Working with the EPR involves negotiating this hinterland of potentially contradictory voices, a struggle to attend to the material and textual presence of the EPR within an already complex social encounter.

Recent work on the use of electronic templates in the context of diabetic care in general practice lends support to the concern that the use of such templates may privilege 'hard' biomedical data over 'softer' more personal information (Rhodes *et al.* 2006; Checkland *et al.* 2007). Our data suggests that it is not only in the context of electronic templates that such tensions are played out. This tension also manifests itself in consultations which fall outside of the deliberately structured 'template-driven' approach to care.

Returning to Goffman's definition of 'involvement', our micro-analysis gives some insight into the way in which 'sustaining… cognitive and affective engrossment' (Goffman 1966: 36) is becoming distributed between people and technologies, between the local 'here and now' and the distal 'there and then'. The EPR is not prescriptive in this – its 'agency' is often partial in that it is at least partly tied to immediate local practices, and yet it is pervasive.

The EPR has now become taken-for-granted in the general practice setting. By 'slowing down' the consultation and opening up the 'black box' as we have, our analysis offers important insights into the complexities and challenges of the contemporary consultation.

## Acknowledgements

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**Appendix: Transcribing conventions**

| | |
|---|---|
| [ onset of overlapping speech | **.hhh** inbreath |
| ] end of spate of overlapping talk | **Hhh** outbreath |
| [[ speakers start a turn simultaneously | = no pause between speakers; contiguous utterances |
| **:** preceding sound is lengthened or drawn out (more : means greater prolongation) | (( )) a non verbal activity (e.g. **C** = keystroke in this example) |
| <u>Underlining</u> emphasis | ( ) unclear fragment |
| **(.)** pause of less than 0.2 seconds | . falling tone (not necessarily end of sentence) |
| **(0.4)** pause, in tenths of a second | **?** rising inflection (not necessarily a question) |
| ↑↓ marked rising / falling intonation | **CAPITALS** louder than surrounding talk |
| > < the talk they surround is quicker than surrounding talk | °° talk they surround is quieter than surrounding talk |

**Notes**

1. The authorship of some of the Bakhtin/Vološinov writings is controversial, with some critics believing that work attributed to Volosinov may actually have been written by Bakhtin.
2. The camera used was a Sony Handycam DCR-SR72. Good quality voice recordings were achieved using the camera's in-built microphone.
3. In all but one consulting room, the camera was mounted on a mini tripod and several patients commented when they left the consulting room that they had not noticed a camera at all. It took one researcher approximately 10 minutes to set up the technical equipment.
4. An inexpensive commercially available screen capture tool was purchased from ACA Systems, and was run directly from a USB memory stick. The resulting .avi files were saved to the clinician's computer desktop in the first instance, then transferred to an encrypted USB memory stick after the recording session was complete – a process taking less than five minutes for three consultations.

**References**

Als, A. B. (1997). The desk-top computer as a magic box: patterns of behaviour connected with the desk-top computer: GPs' and patients' perceptions. *Family Practice* 14 (1): 17–23. http://dx.doi.org/10.1093/fampra/14.1.17

Atkinson, J. M. and Heritage, J. (1984). Transcript notation. In J. M. Atkinson and J. Heritage (eds) *Structures of Social Action: Studies in Conversation Analysis*, ix–xvi. Cambridge: Cambridge University Press.

Bakhtin, M. (1981). *The Dialogic Imagination: Four Essays*. Austin, TX: University of Texas Press.

Balint, M. (1964). *The Doctor, His Patient and the Illness*, 2nd ed. Edinburgh: Churchill Livingstone.

Berg, M. (1998). Medical work and the computer-based patient record: a sociological perspective. *Methods of Information in Medicine* 37 (3): 294–301.

Booth, N., Robinson, P. and Kohannejad, J. (2004). Identification of high-quality consultation practice in primary care: The effects of computer use on doctor-patient rapport. *Informatics in Primary Care* 12 (2): 75–83.

Bruni, A. (2005). Shadowing software and clinical records: On the ethnography of non-humans and heterogeneous contexts. *Organization* 12 (3): 357–378. http://dx.doi.org/10.1177/1350508405051272

Checkland, K., McDonald, R. and Harrison, S. (2007). Ticking boxes and changing the social world: data collection and the new UK general practice contract. *Social Policy & Administration* 41 (7): 693–710. http://dx.doi.org/10.1111/j.1467-9515.2007.00580.x

Coiera, E. (2003). The electronic medical record. In *Guide to Health Informatics*, 2nd ed, 111–123. London: Arnold.

de Lusignan, S., Kumarapeli, P., Chan, T., Pflug, B., van Vlymen, J., Jones, B. and Freeman, G. K. (2008). The ALFA (Activity Log Files Aggregation) toolkit: A method for precise observation of the consultation. *Journal of Medical Internet Research* 10 (4) available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2629369 http://dx.doi.org/10.2196/jmir.1080

Department of Health (2009). Quality and Outcomes Framework: Guidance. Available from: http://www.dh.gov.uk/en/Healthcare/Primarycare/Primarycarecontracting/QOF/DH_4125653

Edelsky, C. (1981). Who's got the floor? *Language and Society* 10 (3): 383–421.
http://dx.doi.org/10.1017/S004740450000885X

Goffman, E. (1955). On face-work: An analysis of ritual elements in social interaction. *Psychiatry: Journal of Interpersonal Relations* 18 (3): 213–231

Goffman, E. (1959). *The Presentation of Self in Everyday Life*. New York: Anchor Books.

Goffman, E. (1966). Involvement. In *Behavior in Public Places*, 33–42. New York: The Free Press.

Goffman, E. (1981). Footing. In *Forms of Talk*, 124–159. Pennsylvania: University of Pennsylvania Press.

Goodwin, C. (1981). *Conversational Organization: Interaction between Speakers and Hearers.* New York: Academic Press.

Goodwin, C. (2007). Interactive Footing. In E. Holt and R. Clift (eds) *Reporting Talk*, 16–46. Cambridge: Cambridge University Press.

Greatbatch, D., Luff, P., Heath, C. and Campion, P. (1993). Interpersonal communication and human-computer interaction: An examination of the use of computers in medical consultations. *Interacting with Computers* 5 (2): 193–216.
http://dx.doi.org/10.1016/0953-5438(93)90018-O

Greenhalgh, T., Potts, H. W. W., Wong, G., Bark, P. and Swinglehurst, D. (2009). Tensions and paradoxes in electronic patient record research: A systematic review using the meta-narrative method. *The Milbank Quarterly* 87 (4): 729–788.
http://dx.doi.org/10.1111/j.1468-0009.2009.00578.x

Gumperz, J. (1999). On interactional sociolinguistic method. In S. Sarangi and C. Roberts (eds) *Talk, Work and Institutional Order: Discourse in Medical, Mediation and Management Settings*, 453–471. Berlin: Mouton de Gruyter.

Harré, R. (2002). Material objects in social worlds. *Theory, Culture & Society* 19 (5-6): 23–33.
http://dx.doi.org/10.1177/026327640201900502

Heath, C., Luff, P. and Sanchez Svenson, M. (2007). Video and qualitative research: Analysing medical practice and interaction. *Medical Education* 41 (1): 109–116.
http://dx.doi.org/10.1111/j.1365-2929.2006.02641.x

Jewitt, C. (2006). Towards a multimodal analysis. In *Technology, Literacy and Learning: A Multimodal Approach*, 32–52. Abingdon: Routledge.

Linell, P. (1998). Discourse across boundaries: On recontextualisations and blending of voices in professional discourse. *Text* 18 (2): 143–157.
http://dx.doi.org/10.1515/text.1.1998.18.2.143

Margalit, R. S., Roter, D., Dunevant, M. A., Larson, S. and Reis, S. (2006). Electronic medical record use and physician-patient communication: An observational study of Israeli primary care encounters. *Patient Education and Counseling* 61 (1): 134–141.
http://dx.doi.org/10.1016/j.pec.2005.03.004

Mead, N. and Bower, P. (2000). Patient-centredness: A conceptual framework and review of the empirical literature. *Social Science & Medicine* 51 (7): 1087–1110.
http://dx.doi.org/10.1016/S0277-9536(00)00098-8

Pearce, C. (2007). *Doctors, Patients and Computers: The new consultation.* Unpublished doctoral thesis, University of Melbourne, Melbourne.

Pearce, C., Walker, H. and O'Shea, C. (2008a). A visual study of computers on doctors' desks. *Informatics in Primary Care* 16 (2): 111–117.

Pearce, C., Trumble, S., Arnold, M., Dwan, K. and Phillips, C. (2008b). Computers in the new consultation: Within the first minute. *Family Practice* 25 (3): 202–208.
http://dx.doi.org/10.1093/fampra/cmn018

Rampton, B. (2007). *Linguistic Ethnography and the Study of Identities.* Paper 43 *http://www.kcl.ac.uk/content/1/c6/04/20/06/RamptonrevisedLingethnidentitiesWP43.pdf* King's College, London.

Rampton, B., Tusting, K., Maybin, J., Barwell, R., Creese, A. and Lytra, V. (2004). *UK Linguistic Ethnography: A Discussion Paper. http://www.ling-ethnog.org.uk/documents/papers/ramptonetal2004.pdf.*

Rhodes, P., Langdon, M., Rowley, E., Wright, J. and Small, N. (2006). What does the use of a computerized checklist mean for patient-centred care? The example of a routine diabetes review. *Qualitative Health Research* 16 (3): 353–376.
http://dx.doi.org/10.1177/1049732305282396

Roberts, C., Wass, V., Jones, R., Sarangi, S. and Gillett, A. (2003). A discourse analysis study of "good" and "poor" communication in an OSCE: A proposed new framework for teaching students. *Medical Education* 37 (3): 192–201.
http://dx.doi.org/10.1046/j.1365-2923.2003.01443.x

Robinson, J. D. (1998). Getting down to business: Talk, gaze and body orientation during openings of doctor-patient consultations. *Human Communication Research* 25 (1): 97–123.
http://dx.doi.org/10.1111/j.1468-2958.1998.tb00438.x

Ruusuvuori, J. (2001). Looking means listening: Coordinating displays of engagement in doctor-patient interaction. *Social Science & Medicine* 52 (7): 1093–1108.
http://dx.doi.org/10.1016/S0277-9536(00)00227-6

Scott, D. and Purves, I. (1996). Triadic relationship between doctor, computer and patient. *Interacting with Computers* 8 (4): 347–363.
http://dx.doi.org/10.1016/S0953-5438(97)83778-2

Suchman, L., Blomberg, J., Orr, J. E. and Trigg, R. (1999). Reconstructing technologies as social practice. *The American Behavioral Scientist* 43 (3): 392–408.
http://dx.doi.org/10.1177/00027649921955335

Sullivan, F. (1995). Intruders in the consultation. *Family Practice* 12 (1): 66–69.
http://dx.doi.org/10.1093/fampra/12.1.66

Ventres, W., Kooienga, S., Vuckovic, N., Marlin, R., Nygren, P. and Stewart, V. (2006). Physicians, patients, and the electronic health record: An ethnographic analysis. *Annals of Family Medicine* 4 (2): 124–131.
http://dx.doi.org/10.1370/afm.425

Vološinov, V. (1973). *Marxism and the Philosophy of Language*. Cambridge, MA: Harvard University Press.

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# Appendix 5

**Conference Presentations**

**November 2011.** *Hidden work: Ethnographic analysis of receptionist input to quality and safety in repeat prescribing routines in general practice.* North American Primary Care Research Group. Banff, Canada.

**October 2011.** *Hidden work: Ethnographic analysis of receptionist input to quality and safety in repeat prescribing routines in general practice.* William Harvey Day. Queen Mary, University of London, UK.

**September 2011.** *The electronic patient record (EPR): its contribution to the construction and circulation of authority in the primary care consultation.* British Association for Applied Linguistics. Bristol, UK.

**June 2011**. *The contribution of the electronic patient record (EPR) to new constructions of chronic disease.* Communication, Medicine and Ethics (COMET) conference. Nottingham, UK.

**November 2010**. *The electronic patient record (EPR) as a participant in the primary care consultation.* NIHR Fellows conference. Manchester, UK.

**September 2010.** *Voices, footing and the electronic patient record.* International Symposium in Sociolinguistics. Southampton, UK.

**June 2010**. *Voice and authority in the electronic patient record.* Communication, Medicine and Ethics (COMET) conference, Boston MA, USA.

**November 2009**. *The multiple voices of the electronic patient record.* Voice in Talk and Text. Centre for Language, Discourse and Communication Research Day at King's College, London, UK.

**September 2009**. *The electronic patient record as a participant in the primary care consultation.* Ethnography Language and Communication conference, Aston University, UK.

**June 2009**. *The role of the electronic patient record (EPR) in the primary healthcare consultation.* Communication, Medicine and Ethics conference (COMET). Cardiff, UK.

**September 2008**. *The electronic patient record as discourse.* Ethnography Language and Communication conference, Aston University, UK.

**August 2008**. *The electronic patient record as discourse.*4S/EASST 2008 Annual Meeting. Rotterdam, Netherlands.

**February 2008.** *HERO – Healthcare Electronic Records in Organisations.* Society for Academic Primary Care. Madingley Hall, Cambridge, UK.