

Distributed decision making: the anatomy of decisions-in-action

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Abstract Conceptualising the doctor-patient relationship has been a central project for both medicine and medical sociology. This paper seeks to show how an understanding of the *distributed* nature of medical practice can help us research the decision-making process in doctor-patient encounters. I draw on a range of empirical studies of medical interaction, knowledge, technology and work in primary and secondary care. I describe the ‘ethno-methods’ (Garfinkel 1967) of patient-orientated medical decision making in order to highlight some of the fundamental facets of distributed decision making. Initially, I outline how decision making is an ongoing event that often evolves over multiple encounters. I then show how decision making is never just a solo, cognitive activity but rather distributed over a range of people. Finally, I outline how decision making is initiated, sustained and transformed over a range of encounters with both people and technologies. I argue that recognising the distributed nature of decision making shifts the focus from overly prescriptive visions of decision making to more plausible, albeit, more mundane sets of ideals. Centrally, a focus on distribution offers new opportunities actively to engage with, support and research decision-making-in-action.

Keywords: doctor-patient interaction, distributed, shared decision making

Introduction

Foreshadowing contemporary debates on the limits of paternalism and the possibilities for some act of co-operation in decision making, Szasz and Hollander (1956: 586) offered ‘three basic models’ on the roles of the patient and practitioner in consultation. In relation to chronic illnesses they outlined a position of ‘mutual participation’ where.

‘the physician does not profess to know exactly what is best for the patient. The search for this becomes the essence of the therapeutic interaction. The patient’s own experiences furnish indispensable information for eventual agreement, under otherwise favourable circumstances, as to what “health” might be for him (*sic*)’ (1956: 589).

Since then, a range of models have been produced that seek to offer ways to include patients in consultations; the most successful of these has been the Charles, Gafni and Whelan (1997, 1999a) model of shared decision making (SDM)¹. They outline a theoretically and empirically informed model of practice in which

‘both patient and doctor have a legitimate investment in the treatment decision; hence both declare treatment preferences and their rationale while trying to build consensus on the appropriate treatment to apply’ (Charles *et al.* 1999b: 781).

SDM models are important as they seek to combine two dominant impulses in contemporary medical practice. They align the political movements to promote and recognise patient-centredness and ‘active’ forms of patienthood with the promotion of treatment decisions that explicitly refer to evidence or research-based knowledge. Importantly, the doctor is also shifted from a role of information provider, or paternalistic adjudicator, to a collaborative role which distributes rights and responsibility between the parties.

Various attempts have been made to transform SDM into actual guidelines or directives for consultation practice. The specific stages, competencies or skills have been identified, elaborated on and discussed (See Table 1). Notably, Elwyn has been involved in a range of studies that outline, through interviews, focus groups, conversation or discourse analysis, the potential problems that doctors and patients face when trying to enact SDM (*e.g.* Elwyn *et al.* 1999a, Elwyn, Edwards and Kinnersley 1999b, Gwyn and Elwyn 1999). However, SDM research, with the exception of Montori, Gafni and Charles (2006), discussed below, has routinely conceptualised decision making as occurring in one-off dyadic encounters within the space of consultation rooms. In this way, they have rarely engaged with research that focuses on the ongoing, everyday work that patients undertake to produce autonomy and expertise (*e.g.* Fox, Ward and O’Rourke 2005, Ohlen *et al.* 2006, Struhkamp 2005) or research that documents the ongoing work that practitioners undertake to co-ordinate extra-local evidence in clinical encounters (*e.g.* Gabbay and Le May 2004, Lipman, Murtagh and Thomson 2004, May *et al.* 2006). This research is important because it moves beyond a focus on individual consultations and instead begins to outline the ways that individuals’ decisions are shaped over time by knowledge and encounters *beyond* the immediate space of a single consultation.

This paper seeks to show how an understanding of the *distributed* nature of medical practice can help us research the decision-making process in doctor-patient encounters. It will show how we might also choose to research how decision making is *distributed* across time, courses of actions, people, situations and technologies. As Salomon (1993) has highlighted:

Table 1 *Stages and competencies of involving patients in healthcare decisions*

1	<i>Implicit</i> or <i>explicit</i> involvement of patients in decision making process
2	Agree and define problem that needs a decision process
3	Explore ideas, fears and expectations of the problem and possible treatments
4	Portrayal of equipoise and options
5	Identify preferred format and provide tailor-made information
6	Checking process: understanding of information and reactions (<i>e.g.</i> ideas, fears and expectations of possible options)
7	Checking process: Check the patients accept the process and decision making role preference. <i>i.e.</i> involving the patient to the extent they desire to be involved.
8	Make, discuss or defer decisions
9	Arrange follow up

Source: [Emphasis in original] Elwyn and Charles (2001: 129).

People appear *to think in conjunction or partnership* with others and with the help of culturally provided tools and implements. . . . The thinking of these individuals might be considered to entail not just ‘solo’ cognitive activities but *distributed* ones [Authors’ emphasis] (1993 xii–xiii).

Thinking with the idea of distributed cognitions (see also Hutchins 1995), I want to suggest that we could also expand the idea of ‘decisions’ beyond the ‘solo’ cognitions and actions of individual, rational, autonomous human actors that occur in relatively atemporal and ahistorical consultations. Moving beyond our present static research focus on ‘orphan’ consultations, to a more distributed vision, may offer new opportunities to actively engage with, support and research decision-making-in-action.

Distributed decision making

In order to (re)describe and expand on our current concept of decision making, I offer a range of examples from a range of contexts. The examples are taken from ongoing and completed studies of medical interaction, knowledge, technology and work that I have contributed to (see Table 2). The studies included data on: chronic conditions (juvenile idiopathic arthritis, atrial fibrillation, alcohol dependence); acute conditions (acute arthritis, carotid endarterectomy, alcohol-related accidents) and preventative health (risky drinking). Observations or accounts of single ‘one-off’ encounters with health professionals, without reassessment or referral, were very rare. They only emerged in some of the accounts of preventative healthcare consultations about ‘risky’ and ‘binge’ drinking. As such, the data

Table 2 *Sources of data*

<i>Context</i>	<i>Main fieldwork</i>	<i>Main study focus</i>
Primary care ~ General practice	Interviews with GPs (n = 29); focus groups (n = 4) with GPs and allied health professionals.	Management of alcohol-related problems (see Kaner, Rapley and May 2006, May, Rapley and Kaner 2006, Rapley, May and Kaner 2006)
Primary care randomised Controlled trial ~ General practice	Interviews with patients (n = 30); videotapes of research consultations (n = 29); non-participant observation.	Doctor-patient encounters and patients’ experiences in a randomised controlled trial of decision support tool (see Heaven <i>et al.</i> 2006, Murtagh <i>et al.</i> 2006, Rapley <i>et al.</i> 2006)
Secondary care ~ Stroke medicine	Interviews with patients (n = 3); audiotapes of consultations (n = 5); non-participant observation.	Clinician and patient decision making in carotid endarterectomy
Secondary care ~ Paediatric Rheumatology	Interviews with health professionals (n = 11); videotapes of consultations (n = 62); non-participant observation.	Examination practices in paediatric rheumatology, physiotherapy and orthopaedic surgery.

have enabled a focus on the unfolding trajectory of patients' and professionals' decisions. The fragments of data given in this paper have been chosen as they provide the reader with relatively clear and concise examples of aspects of my thesis.

My central analytic concern is to describe the 'ethno-methods' (Garfinkel 1967) of patient-orientated medical decision making over the range of contexts in order briefly to highlight some of the fundamental facets of the distributed nature of decision making. Initially, I will outline how decision making is an ongoing event that often evolves over multiple encounters. I then show how decision making is never just a solo, cognitive activity but rather distributed over a range of people. Finally, I outline how decision making is initiated, sustained and transformed over a range of encounters with both people and technologies.

On multiple encounters

In order to introduce the idea that decision making evolves over multiple situations, involving different people, technologies and knowledges, I offer an outline of the illness trajectory of a single patient. The patient, Bob (a pseudonym), over the course of a series of encounters with medical and allied health professionals discovered he had 'carotid stenosis' – a partially blocked artery in his neck – and so an increased risk of stroke. His illness narrative is generated from drawing on both an interview with Bob, audio-recordings and observations of consultations he had with a stroke consultant and a vascular surgeon.

Fragment 1: Bob's journey

Initially, Bob tells us that 'a little dark shape came over . . . so I covered my eye completely and it's the bottom left-hand quadrant and it's just like frosted glass'. This led Bob to visit an optician, who then suggested that he visit the local casualty department. He went to casualty and was told that his visual problem could be a sign of a disruption of the blood supply to his eye, that this could be a warning sign for stroke, as there could also be a disruption of the blood supply to his brain. He was informed that his symptoms were potentially a sign of a transient ischaemic attack (TIA) and was then offered an appointment at a TIA clinic. He went for a carotid doppler scan, initially to discover the degree of stenosis, and then met a stroke consultant at the TIA clinic. She explained that his stenosis was borderline (between 50 and 70%) but this needed to be confirmed with another test. She outlined that they offered two types of treatment, surgery – carotid endarterectomy – and drug therapy. If the diagnosis was confirmed (over 70%), she thought he should see a vascular surgeon. Bob then had a CT scan which confirmed the result. Prior to visiting the vascular surgeon, Bob also visited his own GP to discuss the issue. He visited the vascular surgeon and they discussed his diagnosis and the risks and benefits of each treatment option. Bob outlined his decision to opt for drug therapy. He then revisited the stroke consultant at the TIA clinic and they agreed to offer him drug therapy.

The observation that care occurs over a series of consultations is hardly a novel observation, it is central to the design of the NHS Care Pathways. Clearly, Bob's journey echoes other accounts of illness trajectories (*e.g.* Bury 1982, Strauss *et al.* 1982). This ongoing aspect, however, is routinely sidelined in models of decision making. As noted above, SDM focuses on the sharing of decisions between individual actors within the bounded space of single consultations. Recently, Montori, Gafni and Charles (2006) have sought to modify the ideals of SDM, arguing that it was originally designed for acute secondary care and so needed to be altered for different contexts. They highlight how decisions in chronic conditions

are ongoing and are often revisited over time. As such, an ongoing partnership needs to be developed between the clinical team, the patient and the family. As the discussion of Bob's case above suggests, decision making in *acute care* is also ongoing, albeit over less time, and also occurs across clinical teams, albeit with a smaller cast of characters. Over a relatively brief period of time Bob developed some knowledge about his condition and potential treatments. He progressively discovered, discussed and learnt about his condition and learnt about possible treatment options. When he met the vascular surgeon, they reviewed his understanding and he (re)raised his questions and concerns, and he was then asked to 'pronounce' his decision. He tells the surgeon that

Fragment 2: Bob's decision (ConsultationBobVS)

I had more or less decided against having this done. I just wanted your, your, views, you know, your expert opinion because not knowing exactly what is involved, but my feeling is to just, just leave it and hope that the treatment is enough.

Bob's pronouncement, his decision to opt for drug therapy, emerged from interactions with a range of health professionals, interactions with a range of clinical specialities and interactions with a range of diagnostic technologies. In the interview he noted that he had 'talked it over' with his wife and his three children, and 'we've all agreed that it's the best thing'. Centrally, his decision was developed in, shaped by and then revisited in the unfolding trajectory of a series of medical and non-medical encounters.

With acute and chronic illnesses, each new visit to a health professional can also offer *another-decision-in-a-series*, where the past decisions are reviewed in the light of the patient's 'new' history, examination and test results. For patients with Juvenile Idiopathic Arthritis (JIA), each visit to a paediatric rheumatology team at a routine outpatient review clinic can bring new decision points; for example:

- to increase, reduce or stop a specific drug;
- to change drugs due to side-effects;
- to inject specific joints;
- to start seeing a physiotherapist for a specific exercise regime;
- to have an occupational therapist review and manage some aspect of home or school life;
- to keep everything as it is.

Interestingly, in consultations with adolescents with JIA, it is taken as routine that decision making is distributed across, at the *very least*, three actors: a consultant rheumatologist, a patient and a parent or guardian. And it is to this issue, the distribution of decisions *across* people that we will now turn.

On multiple people

Clearly, my above discussions of Bob's journey and the general description of JIA patients, offer little technical access to some of the processes of distributed decision making. I have not discussed multiple conversations that patients routinely have with partners and friends, or outlined the multiple sources of knowledge that they can and do draw on. In this section I now want to describe two facets of distribution: first, I show how decision making is rarely just a 'solo cognitive' event and, secondly, I show how it is routinely distributed 'over' people.

Below is an excerpt from a consultation with a patient, Anne, who has an increased risk of stroke because she has atrial fibrillation (AF). Her daughter, Pam, was present. Anne is

taking part in a randomised controlled trial of decision support tools for AF. We join the consultations as Anne is being asked a series of hypothetical questions by the GP, the answers to these questions are put into a computerised-decision support tool².

Fragment 3: Seeking just Anne's view (TOADConsultation68)

- GP Would you, would you go
for option A which is staying with
a mild stroke or would you go
for option B?
(*Anne turns to Pam*)
What we're looking for is your, your
(*Anne turns to GP*)
views rather than your daughter's so=
Pam =I'm just trying to
GP Yeah.
(*Anne turns to Pam*)
Pam explain the odds to you so it's easier for you.
...
GP and I'll explain what we mean by that.
Pam It's a very bad stroke that.
GP ((*laughs*)) Yeah. Basically, and remember these are all hypothetical they're not to
do with you.
(*Anne laughs, puts hands to head and leans forward*)
Pam It's not going to happen to you mam, don't worry about that.
(*Anne lifts head*)
GP These are situations where we're saying if you were admitted to hospital with this
what would you decide to do.

The GP is clearly orientating to Anne's body movements – from looking at the screen to turning to look at her daughter, at just that moment – as demonstrating that she is 'seeking help' about what answer she should or could give to the hypothetical question. And the GP is seeking *just Anne's views* on the topic of whether she would prefer a mild stroke or a treatment that could potentially lead to death. In and through his directive – 'What we're looking for is your, your views rather than your daughter's so' – we can see how the GP (re)produces a classic Kantian liberal version of autonomy. This is a cognitive autonomy, where individuals are self-sufficient, with views, thoughts and decisions being generated 'from within', with the premise that we have a solo 'internal' state, that we 'own' our own thoughts, that we exist apart from our social relations.

Pam, Anne's daughter, through her various comments – her account ('I'm just trying to explain the odds so it's easier for you'), translation ('it's a very bad stroke that') and explanation of the GPs question ('It's not going to happen to you mam, don't worry about that.') – demonstrates how she works to help her mother *make sense* of the encounter. Pam offers us a glimpse of how decisions can and are 'thought about' in and through interactions. By that, I mean that it is a routine feature of everyday life that we talk to, listen to and ask advice from others. In this way, our decision making is deeply embedded in, shapes and is shaped by, interactions with others. Centrally, Pam enacts an alternative theory of autonomy, a *relational autonomy* (Keller 1997). Pam's explicit orientation to her mother's vulnerability – in this case by co-producing understanding – and her implicit orientation to her relationship, to their mutual interdependence, is not a denial of her

mother's autonomy but rather a resource through which, on a practical level, they achieve her mother's day-to-day autonomy (see Struhkamp 2005).

In an interview with Anne, undertaken a few days after the clinic, she nicely demonstrates the role of other people in how we can make sense of our own health and health-related decisions. We join the talk as the interviewer, Ben, has just asked Anne whether, during the consultation, she felt able to discuss the issue of having stomach bleeds. I should note that the AF patient has two drug-based options: warfarin and aspirin. One of the potential side effects of taking warfarin – the more effective drug at reducing risk of stroke – is that it can increase the risk of stomach bleeds.

Fragment 4: Anne's friend's advice (TOADInterview68)

Ben Did you feel you got to discuss that with the doctor when you went to see him at the clinic with the computer, about having stomach bleeds and

...

Anne No, no I didn't. No I didn't. I'm just er, wondering. Me friend said 'have you never been on aspirin Anne'. I says, 'no I haven't'. She says, 'eeh well I take aspirin every day', she says, 'because that thins your blood and everything and that'. I says, 'no, I've never been on'. I says, 'they said to go on warfarin' and she says, 'probably that's the same' but she says, 'I've been on aspirin'. I says, 'I know', I says, 'I heard once that aspirin can make you bleed', you know.

Ben Right.

Anne And I says, 'well () well he says warfarin'. She says, 'well watch it doesn't upset your stomach'. I says, 'well all I can do is try it and if it does, well I'll just stop it, you know'. So we'll just wait and see what happens. But er, I mean me daughter's husband, he was on aspirin, the coated ones, coated aspirin

Ben Oh right.

Anne what doesn't, it doesn't upset your stomach or something

Anne shows us, in and through her quite detailed discussion of her conversation with her friend, how we can and do learn about possible healthcare options from others. In this case, Anne reports on two exemplars of potential knowledge, her friend's and her son-in-law's practical experience of taking aspirin, and relates this to her memory of the consultation.

As Struhkamp (2005) argues through an ethnographic story about 'Mrs Verhagen',

[She] is able to live in her own apartment and in the town she prefers most, because others *actually* and *actively* take care of her. . . . Important for Mrs Verhagen's autonomy is not only respect of her decisions and life style but also the assistance and care provision that help to realise it [Author's emphasis] (2005: 110).

And in looking at the video and two interviews with Anne, it is not simply that Anne learnt from others but that she is dependent on the care and support of others, not least to help her make sense of and facilitate her choices and decisions. John, another participant in the same study as Anne, offers us a different example of the role and potential impact of his relationship with others.

Fragment 5: The wisdom of allotments (TOADInterview170)

Ben How did you, how do you think it compared with say seeing your normal GP?
(long pause)

John Seeing the, your [GP at the RCT clinic] up here?

Ben Yeah.

John Yep. (pause) Well in my case you see it was (pause) it was okay because it was a, he was a neutral, you know, kind of on neutral ground you see. It's very difficult to tell your own GP he's wrong [Right], very difficult to say 'you're wrong', you see, you have to believe everything they say, you know. You go down the allotment and compare notes, 'who's on warfarin, who's on aspirin, what heart pill are you on, what are you on for your (), what are you on for this, what are you on for your blood pressure, what are you on for this', this is what happens, that's how it happens, you know. It's very hard, although people go in and beat the, you know, the table and say 'I want to be on this or I want to be on that, I want a second opinion'.

John highlights one aspect of the social life of medical talk, that interactions with family, friends, relatives can have implications on actual encounters with medical professionals or people's reflections on them. In his case, the allotment is a space in which knowledge about conditions and treatment regimes is generated, discussed and questioned. In this way John also describes something like relational autonomy, where his agency emerges in and through a web of intersubjectivity and relationality.

Both Anne's and John's reports echo the findings of a recent Canadian study (Ohlen *et al.* 2006) on the role of 'significant others' in cancer patients' decision making about complementary and alternative medicine. They outline that significant others – and by this they mean someone's social network, family members and friends – are involved in four related areas:

- encouraging the patient to discuss the decision;
- collaborating in the decision with the patient;
- persuading the patient to make a decision;
- making the decision for the patient.

Their spectrum of involvement captures some of the possibilities of the work of non-medical others. Interestingly, it echoes Charles, Gafni and Whelan' (1999) spectrum of doctor-patient involvement in decision making and its emphasis on dyadic encounters. Ohlen *et al.* (2006) also argue that, unlike conventional cancer therapy, the more marginal status of complementary and alternative medicine enables significant others to have a more active and legitimate stake in decision making. I would however argue that, irrespective of the status of the treatment, interactions with non-medical others are deeply embedded in our ways of knowing about, experiencing and deciding on our health and health-related decisions. Also, far from being a product of 'dyadic' interactions and relationships, it is routinely a product of a series of encounters, over a range of people.

We can now begin to see some aspects of how the patient is no longer *just* 'an individual patient', but a 'collective-patient' (Callon and Rabeharisoa 1998), one, albeit central node, in a configuration of people³. However, what I've presented so far is premised on a bounded and atemporal description of the role of others. Clearly, the level of involvement of others can range from brief comments or observations to sustained dialogues. Interactions with others can range from fleeting acquaintances in such places as waiting rooms – which trigger some new thought which you then discuss with someone else, or reaffirm a current decision – to ongoing debates (or arguments) with partners or friends. As such, our decisions are routinely distributed 'over' people, they emerge, transform and solidify in and through *multiple interactions with multiple others*, significant or otherwise, *over a period of time*.

On multiple sources of knowledge

In the following section, I explore how configurations of multiple encounters with people and material things – like computers or documents – are central to providing multiple sources of knowledge that impact on and shape decision-making practices. And rather than primarily focusing on the figure of patients, I will now shift to the figure of health practitioners. My next demonstration is taken from a study that focused on the clinical and social factors that impact on the discussion, management and treatment of alcohol problems in primary care consultations. A general practitioner, Jay, in attempting to answer my question about the limitations of what can be achieved in an average consultation, outlines an alternate ontology of time and the GP's consultation.

Fragment 6: Overcrowding in consultations (AERCInterview7)

Tim: It's this network of things that ((dependent drinkers are)) dealing with [mm hm] erm that often can't be dealt with in the consultation be it [oh yeah] erm be it whatever abusive relationships, be it erm financial situations, be it [mm hm] whatever, that actually massively implicates the kind of drinking structures that [mm hm] people are involved in, so how can a GP engage with those kind of things

Jay: mm (with) difficulty
((Tim laughs))

Jay: Y'know in ten minutes you don't have time [yeah] you do because you see people regularly [mm hm, mm hm] y'know I see them and I've seen their mum and dad [mm mm] and I've seen their uncle or I've seen the next door neighbour so I get different bits and I think you can build up a reasonable picture of how y'know what they're doing or erm y'know different things or granny comes in and says 'I'm worried about my grandson, he's doing this and doing that' [mm hm, mm hm] yes y'know so you've, you c-, you do we do have a little bit of insight [mm hm] we do have a bit of a help with that [mm] more so that a hospital doctor ever has.

In answering my question, Jay outlines how he gains knowledge about patients in and through a series of encounters with just that patient as well as members of that patient's family network. Such a description is central to the politics and poetics of marking and claiming the difference between primary and secondary care. Jay explicitly (re)produces this at the end of the fragment.

Clearly, not all people do have an ongoing and long-term 'relationship' with a single GP. However, this does not mean that, in practice, versions of this relationship can and do exist. The GP's descriptions of working with patients with a range of alcohol problems routinely echoed how alcohol-related management and decision making – for both parties – occurred in and through an extended series of consultations, sometimes lasting years. And this extended, ongoing relationship was echoed in the AF patient's descriptions of both primary and secondary care in relation to a range of health problems and to my observations of JIA clinics and consultations. In this way, practitioners and patients can and do gain 'a reasonable picture . . . a little bit of insight' over time: for practitioners, in aspects of just that patient's conditions, treatments and decision-making practices, and for patients in just their conditions, treatment options and their practitioners' routines and habits.

Knowledge is distributed over encounters with patients and can be distributed over encounters with a patient's significant others. As such, for professionals and patients, knowledge drawn on in one moment routinely emerges in and through a series of past

encounters. Much in the same way that conversation analysts describe the work that a turn-at-talk does, a consultation is related to prior consultations, the ongoing consultation and future consultations.

Centrally for this paper, decision-making practices are simultaneously retrospective, current and prospective in orientation. I should note that so far I have only outlined something like a 'relational autonomy', where decision making emerges in and through a web of interdependency in encounters with people; or rather, patient collectives that are formed in and through interdependencies between *human* actors. Such a reading neglects the mundane knowledge practices of patients and professionals that are irremediably bound to a series of encounters with a range of human *and* non-human actors (Berg and Mol 1998).

To show how knowledge is distributed over a series of encounters with human and material things, I offer another fragment from the study of alcohol practices in primary care. In this example, a group of GPs have been asked to place in a hierarchy the sources of evidence they draw on in helping them make decisions about patient care.

Fragment 7: Peer-reviewing (AERC Focus Group A)

Ron: I think there's a complex relationship . . . because you might read an article occasionally or em er hear about something in training, but it's only when you go back and try it out and you can validate it by discussing it with other people do you feel more comfortable using it. Or if you see other people using it, but if you try something out and then discuss it with someone and it doesn't work or they don't do it then em and I'm more likely to pull back, that's someone who's heavily influenced by social norms.

. . .

Ron: You might also see it from notes of when other people have seen patients before you or after you or whatever. I mean a form of feedback I get is when I see other people have managed my patients. And although it's not as explicit or as, you know you don't get the sort of detail of information as you do from talking to colleagues, it still sort of has its own effect by seeing how people work.

Paul: This is one of the big pluses actually over the last few years with-out-of hours work, where your work is clocks and rotas, it gave you a much wider exposure to what was normal practice than you would otherwise get.

Ron describes the array of sources of knowledge that can shape his consultation practice. He shows us how encounters with these distributed sources of knowledge and expertise can initiate, stabilise and/or transform his decision-making practices. He outlines an ad hoc, spatio-temporally distributed configuration of encounters, covering acts of reading, observations of and discussion with colleagues and educators, and consultations with patients. This focus group narrative closely echoes Gabbay and Le May's (2004) description of the central role of clinicians 'communities of practice' in informing clinicians' decisions. Importantly, the evolving relationship between personal practice and collective expertise also echoes that found in on-line patient discussion groups (e.g. Moreira 2006) and other more traditional patient support forums (e.g. Crossley and Crossley 2001). Centrally, Ron reminds us how prior knowledge, from human and non-human 'others', can routinely be embedded in here-and-now decisions for practitioners *and* patients.

Ron and Paul's comments also raise another important conception, that the practices of decision making are deeply embedded in a moral economy. They both raise issues of how knowledge and practice are framed in and through 'norms'. Such phronetic judgements (Flyvbjerg 2001) – about what is both possible *and* practical in a given moment, encounter

or trajectory – are deeply implicated in decision making. For example, when a patient comes with multiple medical troubles, general practitioners and patients often have to prioritise which complaints to engage with in this consultation, given the time available. In the case of decisions about alcohol-related problems, any in-depth discussion (and sometimes even raising the issue in this consultation) is balanced against such issues as the need to focus on other medical problems, the patient's willingness to engage with the topic at this moment, previous discussions about alcohol, the patient's stage of life, occupation, social status, etc. (see May, Rapley and Kaner 2006, Rapley, May and Kaner 2006).

Patients' and practitioners' access to knowledge about what is practical and possible has also expanded enormously in and through the rise of access to new and traditional spaces of knowledge about the management and treatment of medical conditions. To explore briefly a facet of this issue, let us return to the moment of Bob's journey, the man with a carotid stenosis. In this fragment, we see Bob's asking the vascular surgeon (Tom) a 'personal' question:

Fragment 8: Big studies (ConsultationBobVS)

Bob: And what, what's your own view on this? I mean if you were in this sort of situation. I mean as I say I'm so active and

Tom: Uh-hm. Um, All I can do is base my advice on the study, the big studies that have been done. There've been two large studies that have looked at this sort of problem, one based in Europe and one based in America, both of which involve several thousand patients and what we know from these studies is that if we continue to simply treat you with tablets your risk of having a stroke in the next few years is quite high [Hmm] And we can reduce that risk, as I say not to zero

Bob: No

Tom: but we can reduce it from about thirty per cent overall to about ten per cent overall.

Bob: Yeah

Note how Tom, rather than offer advice that is embedded in a language of 'If I were you . . .', offers an answer based on and through the language of 'the evidence we have . . .'. He offers a rather neutral answer, where he is merely the reporter of the information (Heritage and Greatbatch 1991). What is interesting for our purposes is that he draws on the technologies of the findings of 'the big studies' as a resource to offer Bob advice. At this moment, he offers Bob access to the latest research-based science, in and through a repertoire of calculation. In other moments in CEA consultations, we see other devices, like quick pen-and-paper-based diagrams of the build up and blockage in the carotid artery, the results of an array of tests or accounts of patients'-in-general-experiences to undertake such decision-based advice work.

Radio, television, print-media and the internet have contributed to the rise of access to policy, research and experientially-based healthcare knowledge. This knowledge is distributed across taken-for-granted and novel technologies. It emerges in and shapes decision-making practices in multiple ways – to justify, explain, argue against, make sense of, provide evidence for, comment on, agree with, account for – particular decisions. For example, in a JIA clinic, after the consultant had described the course of drug treatment he wanted to offer, the mother of the patient commented that she had already looked up that drug on the internet, that she thought that might be best for her child and then leant down into her handbag to retrieve printouts from the site. Her internet-based knowledge was used to mark agreement with this consultant's decision; she did not introduce this *prior to* the consultant's decision-making pronouncement. Relatedly, various screens and diagrams

from the computerised-decision support tools in the AF clinic were used as interactional devices to explain, ask questions about and suggest possible courses of treatment. At some points these same screens were used by the GPs to demonstrate agreement with the patients' 'right' decision.

As Berg (1997) has shown, medical technologies like decision support tools shape and are shaped by the context of use. Centrally, we need to be aware of how decision making is also initiated, sustained and/or transformed by encounters with a diverse range of spectacular and mundane technologies alongside the current focus on the role of humans. We need a focus on how collective expertise, embedded in assemblages of subjects, technologies, utterances and documents, acts upon the ongoing, unfolding, decision-making process.

Conclusion

In this paper, I have briefly sketched an alternative anatomy, an alternative trajectory of knowing, understanding and researching healthcare decision making. As two of the key animators of SDM have stated:

Over the course of our research we have learned that treatment decision-making is a complex process that takes place over time and can involve many individuals rather than an event that takes place at a fixed point in time and is restricted to the physician-patient dyad. Our thinking on treatment decision-making will continue to evolve as we move in an iterative process, empirically studying different aspects of this process and using the information to clarify our conceptual thinking (Charles *et al.* 1999a: 660).

Whilst not wanting to develop this point here, there is a need to acknowledge the theory-practice gap, to open up debate between the 'prescribed' and 'described' and the limitations of viewing the consultation as an episodic dyadic encounter rather than a longitudinal complex relationship governed by rules that are as yet unexplored (Elwyn 2005: 288).

And I have suggested that decision making could be understood as distributed across time, courses of actions, people, situations and technologies. I realise that I have remained silent on a range of topics, most notably the role of bodies, emotions, pain and suffering.

I also realise that at some moments decisions may be distributed asymmetrically, converging around a collective of actors. For example, in hyperacute situations, say where an unconscious patient needs emergency care from a paramedic, the distribution is initially focused on a single actor. In this extreme case the decisions the paramedic makes in just that moment are intimately related to past experiences, discussions and training, alongside the mundane and digital diagnostic technologies that interact with the patient. As the patient then enters A&E a new set of actors emerges, in this case a stroke team. Only later, either when the patient regains consciousness or significant others are contacted or arrive at the hospital, does decision making become more visibly symmetrical across a 'lay' and 'professional' divide. Moreover, acute care decisions also routinely seem 'of the moment', distributed across just two parties. The *initial* decisions are routinely distributed between a health professional and a patient, although generally in combination with diagnostic technologies and sometimes significant others. As a patient's trajectory of care temporally, spatially and organisationally unfolds, more diffuse human and non-human actors become involved in the decision-making process.

Equally, I have been relatively silent on how the clinical and social sciences can render salient to others elements of the distributed aspects of decision making. Rather than use lists, some researchers have attempted to map some of the dynamics of decision making. Haynes, Devereaux and Guyatt (2002) have offered a relatively economical and simple Venn diagram that encompasses four actants: clinical state and circumstances; clinical expertise; patient's preferences and actions; research evidence. Lipman *et al.* (2004) offered empirical detail to this diagram in relation to the choice of treatment for patients with AF. In the process they offered a detailed diagram of a range of potential actants and some aspects of the interrelationship between them. Calnan *et al.* (2006) outlined the temporal and sequential aspects of the trajectory of patients with upper limb disorders through diagrams of the 'care pathways' of specific patients. To begin to render the distributed nature of decision making, hyperlinked diagrams, lists and maps may be tools that offer interesting practical solutions.

The idea of the distributed nature of decision making raises a number of other issues. It offers a potential research trajectory. As Latour or Garfinkel might suggest we could simply 'just follow that decision' or 'just follow that patient'. It would be empirically rich (and deeply fascinating) to follow just one patient and to attempt ethnographically to explore and map the distributed networks of encounters, people, technologies and decisions. However, such an approach could encounter a range of practical problems and it could never hope to document 'all' aspects of the distribution. Also, given our contemporary climate, it could face major research governance, funding and ethical problems.

In offering an alternative anatomy, I am not seeking to create a new binary (or a new acronym) with SDM at one end and something called 'DDM' at the other. Despite its initial status as an analytic model of practice, the idea of SDM has often been transformed and orientated to as a *normative model for practice*. In this way, it has been used to research and make judgements about current practice – and to discover that SDM is absent – and to teach about future consultation practice. For me, a focus on distribution, however briefly considered, might aid us in shifting from an overly prescriptive vision of SDM to a more plausible, albeit more mundane, set of ideas (and maybe even more mundane ideals). In following the trajectory of current *routine* practice, we may also discover that something like SDM-in-action is already a feature of contemporary healthcare, albeit in a more distributed form. We may also gain additional insights into topics like the organisation of continuity of care or the corporate assemblage of healthcare. Centrally, a focus on distribution will offer new opportunities to actively engage with, support and research decision-making-in-action.

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Notes

- 1 Charles and her colleagues also use the term 'shared *treatment* decision making' in order to emphasize that sharing information does necessarily lead to a focus on treatment. For the purposes of this paper I will not use the additional category of 'treatment'.
- 2 The series of hypothetical questions are designed to generate, through the standard gamble method, the values Anne places on different health states. Later in the consultation the programme will combine these answers with personalised calculations about Anne's risk of stroke. The 'computer' then suggests what the patient's treatment preference would be and this is explicitly compared to the patient's previously stated 'personal' decision.
- 3 Parsons (1951) routinely uses descriptions such as 'the patient and his (*sic*) family' (1951: 448) and configures 'the situation of the patient' in relation to family members, friends and lay associates

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