

Opening the black box: an encounter in the corridors of health services research

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Abstract

Health services research has become more prominent as a result of the NHS reforms. Both providers and purchasers want to know exactly where the money is spent and how it could be used more effectively. How best to obtain information about health services is the subject of some debate within and between disciplines engaged in such research. Because of their training doctors are often sceptical of anything other than formal clinical trials and research which produces statistical data. Some sociologists argue that another way to find out what is actually happening in the NHS is to observe people at work and talk to them. This article debates these differing views of research methods. For effective research both quantitative and qualitative approaches need to be used.

This paper presents a dialogue between two conflicting voices from health services research. It is presented primarily to inform and stimulate debate and it therefore adopts a style which is unusual in this journal. The polarisation of views, inherent in the structure of a dialogue, may oversimplify complex issues at the heart of the debate, but we hope that it highlights several important conflicts which remain unresolved.

The setting for the dialogue is the corridor outside the office of the director of a large and successful health services research unit. The director (who has an impressive record of quantitative research) meets a recently appointed sociologist. . . .

SOCIOLOGIST: I'm glad I've caught you. It's about this research proposal you've just turned down—what do you mean, "It's not proper health services research?"

DIRECTOR: Well, you were going to look at only two hospitals. What sort of a sample is that? Why don't you take up my earlier suggestion of doing a randomised controlled trial?

SOC: Because it won't tell you what you need to know. My project was a reasonable attempt to find out what's really going on in those two hospitals.

DIR: I'm sorry, but we have to convince the medical research establishment that we can deliver high quality work not these small scale, unquantifiable studies of yours. Clinicians often see health services research as the soft option and easy to carry out.¹ We need to win their respect.

SOC: And how, exactly, are you going to do that?

DIR: We've got to undertake good, credible, scientific research. Science is respected and understood by clinicians (after all it's the foundation of medicine).

SOC: Do you mean science in general or a particular image of "hard" science like economics with all its equations. To my mind, what I do as a medical sociologist is just as scientific.

DIR: You're entitled to your view naturally, but clinicians won't understand what you do. The model of science they know is an experimental one—the randomised controlled trial used to test drugs and surgical procedures. We can test health services in exactly the same way. A fraction of current health services research in the United Kingdom consists of randomised trials²; we need many more—you know the sort of thing, classic trials like Mather's work in the late 1960s³ which compared the treatment of myocardial infarction at home and in the hospital coronary care unit. There was a higher mortality after a month in the group treated in hospital. A year later there was still a significant advantage for the patients who went home.

SOC: Hang on a minute. Wasn't that the trial where only about a quarter of the patients were actually randomised? It's hardly a celebration of the experimental method. It was fraught with problems.

"Methodological pluralism is vital in an applied subject like health services research."

DIR: Yes, but the study was repeated by another team. The second time the researchers randomised most of the patients and they showed no significant difference in mortality in the home and hospital groups at six weeks.⁴ From these studies we've developed criteria to identify who needs to go to a coronary care unit and who doesn't.

Who applies the results of trials?

SOC: But does anyone actually use those criteria?

DIR: I don't know. I'm just a researcher—not a cardiologist. It's not my job to implement research. All I do is produce basic knowledge.

SOC: As far as I can see, your contribution to basic knowledge is well and truly ignored. Not just in coronary care—there are other examples. Numerous trials have evaluated the various procedures performed during pregnancy and labour (Iain Chalmers has even gone to the trouble of collating them) but very few of these ideas have changed obstetric practice.⁵

DIR: I can't help it if some clinicians are cussed. Anyway, you can't dismiss the experimental method just because some irrational people choose not to put the findings into practice. Randomised trials have enormous potential for improving health policy—at a much higher level than individual specialties like coronary care or obstetrics. Take something as fundamental as the NHS and Community Care Act⁶—we could have tested whether general practitioner

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fundholding was better than health care purchasing by districts. We should have done something like the RAND health insurance experiment.^{7,8}

soc: The what?

DIR: The huge project in the United States which randomised people to different health insurance schemes to look at the consequences, including the impact on their health. That's the kind of work we should be getting into here.

soc: I'm sorry, but I still have real problems with this picture of the experiment as an ideal. This is a modern health services research unit but you hold an antiquated view of science. It only seems to include the experimental model drawn from the natural sciences. I'm not even convinced that the natural sciences actually work like that⁹ and I'm not sure you have any right to assert that the randomised controlled trial is the best method. It has its limitations.

Alternatives to experiments

DIR: I think you're just against experiments.

soc: Not entirely, but your "one best method" argument reminds me of a very old debate in sociology about positivism...

DIR: Do you have to talk in "isms"? If you could put it in plain English I might be able to understand.

soc: Let me draw an analogy, then. The different methods employed by social scientists are like the different views of the surgeon and the epidemiologist. Surgeons learn through direct experience of individual cases—through what they see, hear, and feel at their fingertips. In contrast the epidemiologist views the surgeon's patients at the aggregate level as clusters of variables. Have you got that?

DIR: Yes, but I've never given much credence to anecdotal evidence from surgeons. Go on.

soc: Well, between those two extremes there is a whole range of theoretical perspectives and research methods to choose from, both qualitative and quantitative. What I want, returning to my analogy, is for the surgeon's view to be given a place in the scheme of research alongside the epidemiologist's. Methodological pluralism is vital in an applied subject like health services research. Even the Medical Research Council recognises that health services research "is typically multidisciplinary, bringing together as appropriate

expertise in biological and clinical science, epidemiology, statistics, economics and the social sciences."¹⁰ If you only use experiments you're using a very limited tool box.

DIR: I wasn't arguing just for randomised controlled trials—but we do need hard facts like those which experiments provide.

soc: Yes, but you judge all facts using hard science as your gold standard. The point is that some things in health services can't easily be looked at with quantitative methods alone. Qualitative methods could help by looking at health care organisation and delivery—at the processes of care.

What is meant by process?

DIR: But process is simply what health services do to patients. We're interested in the product of health care, the outcome, the results of intervention.¹¹ If the patient dies it's a bad outcome and I know there's something wrong with the process. End of story.

"Process is simply what health services do to patients. We're interested in the product of health care, the outcome."

soc: That's oversimplifying the situation. We need a wider definition of process. It's more than just what happens to individual patients. It's also about organisations and the people within them—not just the patient who dies, but the doctors, nurses, auxiliaries, planners, administrators, clerks, and porters, and the noisy, chaotic interaction between them and the structure that surrounds them. There is a black box marked process and we haven't even begun to open it.

DIR: So what exactly would you do?

soc: Well, for a start, I would open up our full methodological tool box and start using techniques other than randomised trials and models of research borrowed from epidemiology. Perhaps health services researchers could begin to use some of the qualitative techniques available.

DIR: Aha! I knew it. You want us to conform to your orthodoxy...

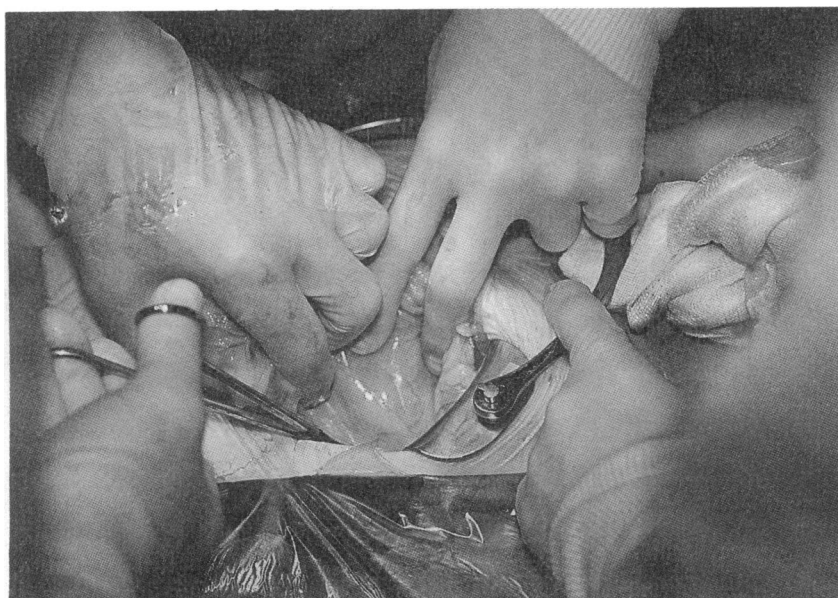
soc: No, mine isn't the only approach. All I'm asking is that you begin to take these methods seriously and consider them alongside your own quantitative skills. After all, market researchers in the no nonsense world of retailing and commerce often use qualitative and quantitative methods together.

DIR: What exactly are these qualitative methods you're offering?

soc: Well, what about observational studies, for a start?

DIR: But we do lots of those. We've done lots of comparative work, case-control studies...

soc: Oh dear! We're not even talking the same language here. I didn't mean case-control studies. I meant observation. You know, being there, looking, and listening. I was thinking of ethnography, which means you have to immerse yourself in the situation and talk to the people involved like an anthropologist would.¹² That's just one example of an approach which gets away from counting events and controlling for extraneous variables. It's about trying to understand what is going on, almost through the eyes of the participants themselves.



Surgeons learn through what they feel at their fingertips, but epidemiologists view patients as clusters of variables

JON HOFFMAN/IMPACT



Waiting lists can't be seen as bus queues

DIR: Sounds like an excuse to loaf around doing nothing in particular to me. What can ethnography tell us about the big issues? For instance, I bet it can't help us solve the problem of waiting lists? Can your precious ethnography tell us anything which would be of practical use about managing these queues?

Value of ethnography

soc: Only that they're not queues. Isn't that worth knowing?

DIR: What pretentious, counterintuitive rubbish. We might not know how best to manage waiting lists, but we don't need sociologists to complicate the basics by telling us they're not queues. They're great long queues of people waiting to go into hospital.

soc: No, they're not. By saying they're like bus queues, you've made lots of assumptions. If you really want to understand a waiting list you need to get in there are find out how it is organised and managed. The best way of doing this is to study the people who actively assemble and maintain the waiting lists. Then you see that waiting lists seldom resemble anything like the formal queue which operations researchers are so fond of modelling.

DIR: I'm still puzzled about how you got this idea.

soc: By studying one district in detail using the ethnographic methods I described.¹³ By observing how a list is managed I found out that although lists are kept chronologically, patients seldom come off the list in that order. The office staff and the surgeons used the list as a pool of work they would dip into—indeed a surgeon might deliberately choose a recent addition to the list over someone who had waited far longer on the grounds of greater urgency...

DIR: And quite right too.

soc: ... or simply because they remembered the patient. There were all sorts of other processes that worked against the idea of a simple queue which managers needed to know about.

DIR: I take your point, but what about wider, international debates? What about explaining variations in the rates of common surgical procedures like cholecystectomy and hysterectomy between regions and countries. Quantitative work by people like McPherson, Wennberg, and so on¹⁴ can tell us about that variation.

soc: And I suppose you'd like more of the same so you can go on pinpointing variation and replicate the

studies which have been done to show the same thing in different places, or maybe to include a few more explanatory variables in your statistical model?

DIR: Well, yes...

soc: But clinical variation raises other questions which need to be answered. What we really need to do now is start uncovering how those rates are generated by the actions of individual clinicians. Take something like Wennberg's concept of the surgical signature, used to describe the different profile of surgical work performed by different surgeons.¹⁵ What we need to know is how those "signatures" get written. And this gets us back to looking at process. We need to know the sequence of events which take place before the patterns of surgical variation are produced.

DIR: So what do you think your approach can offer?

soc: For one thing, it could tell us more about how variation is constructed. Mick Bloor's qualitative work on adenotonsillectomy is a perfect example of the kind of study I'm talking about.¹⁶ He carried out an observational study of ear, nose, and throat outpatient clinics and showed that there were systematic variations in patient assessment routines among consultants, rooted in differences between the specialists in their informal decision making rules. If you combine such work with quantitative data you can begin to explain how variation occurs.

Outsider's view of sociology

DIR: Your programme for looking at process is all very well, but this is exactly what your lot, medical sociologists, have ignored.¹⁷ Medical sociology has long since given up looking at process—it's too busy experiencing illness and waffling on about doctor-patient interaction.

soc: Perhaps, but part of the reason lies in the culture of health services research. In the United Kingdom it's driven by medicine and there aren't many posts for social scientists.¹⁸ You only have to look at what gets funded and who evaluates the proposals. There's very little room for the qualitative work I've been talking about: if it is there it tends to get tacked on to an existing project when the sociologist is brought in to provide expertise on survey design or interviewing or to use a standard measure of patient "quality of life."

DIR: You can't blame me for your failure to secure funding. Anyway isn't the Medical Research Council canvassing medical sociologists for grant applications?¹⁹

"Waiting lists seldom resemble anything like the formal queue."

soc: Yes, but they mostly seem to have people like you assessing the proposals. It's no good having people who know nothing about qualitative research applying their yardsticks of experimental science to all types of research.

DIR: Well then, I certainly can't argue your case for you. I only know about my approach.

soc: But you could back my project?

DIR: The decision's made. But I'll tell you what we'll do. Come back to me in a few weeks with another research proposal. After today's discussion I should be a bit better at understanding what you're driving at!

soc: That's something, I suppose.

DIR: Could I make one last suggestion? Your research proposal wasn't very user friendly. You could do worse than take a leaf out of the health economists' book.

When I started out, nobody had heard of health economics; now every provider unit in the health service wants one. People seem to want health economists, up to a point, and even epidemiologists because they boast a set of tools to offer managers and doctors for opening what you called the black box. The economists didn't get to this position by hanging back and wingeing from the sidelines. If, as you claim, medical sociology, and your ethnographic methods, can really open up this realm of process and tell us what is going on in the "black box" then you've got to be more entrepreneurial. Change your name to Pandora while you're at it, people might be less inclined to be dismissive!

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Authors have rights too

Michael E Dewey

Without publication research can be of little value. When researchers approach publication there is ample published guidance for them on what their obligations are, and there are well known style guides within each scientific discipline including, in medicine, the Vancouver style. This article gives a series of anonymous examples to suggest that the impact of similar guides for editors has been patchy and to make some suggestions for better communication.

The Vancouver style, "Uniform requirements for manuscripts submitted to biomedical journals,"¹ sets down only the obligations of authors. The wide acceptance of this style guide, and similar ones in other disciplines, suggests that it fills a need. So far there does not seem to be an equally well known guide on the responsibility of editors to authors and to referees.

Below, I illustrate some of the problems authors experience that could be avoided by editors following guidelines. The examples do not identify the article or journal concerned, but each example has happened to me or my coauthors during submissions to what are generally regarded as quality journals. Most of the examples are from Britain but European and the American journals also figure. The order of the points in the article corresponds to the progress of an article from submission to eventual publication not to perceived seriousness.

What if two papers with similar content arrive?

There may seem to be no problem for an editor under these circumstances: each paper is assessed on its merits and published accordingly. I submitted an article which caused disagreement between referees, and after a third opinion was sought it was rejected. A few months later the journal published an article covering similar ground. The published paper was more extensive and a much better article, but an author does not have to be paranoid to wonder what went on.

Perhaps editors need to bear in mind what authors may think when this sort of thing happens and keep them better informed.

What if the editor is also an author?

If there are few good journals in a specialty, editors may not be able to publish during tenure unless some mechanism can be found to allow for this eventuality. I submitted an article to the journal of which one of my coauthors was editor. The rules of the organisation which owned the journal outlined a procedure to be followed that used a guest editor. However, this procedure was not explicit to the readership, and only by adding an acknowledgement to the article could we make clear that the article had not been accepted just because the editor was an author.

Banning the editor from publication in the journal seems extreme if there are few alternative outlets. Logically, the editor's research team would also have to be banned, which would probably discourage potential editors even more. Whatever the procedure for dealing with the problem the journal should make it explicit.

How long should the author wait?

When they acknowledge receipt of an article journals sometimes state how long authors should expect to wait before receiving a decision, although few make this information more widely available. I waited two years for the first substantive response to one article despite reminder letters to the editor. (It was then rejected, which added insult to the injury, although it was then accepted by another journal). Another journal has taken a year to respond on more than one occasion.

Journals usually blame slow referees, but if they have not replied within three months are they likely to reply at all? It is no real answer to say that authors could withdraw the article and resubmit elsewhere, as the chosen journal may be the most appropriate one.

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