

# **Distance versus dialogue: modes of engagement of two professional groups participating in a video ethnographic study**

The Use of Video in Social Science Research

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## **Abstract**

This paper presents the findings from a research project that used video recorded data to examine the different approaches that doctors and scientists adopted towards integrating an information system for ordering pathology tests into their everyday work practices. A key finding of this research was that the scientists experienced greater disruption to their work than the doctors since the information system required them to reconfigure their focal work practices whilst for the doctors, the system was located at the periphery of their work and did not hinder their ability to deliver patient care. The contrasting approaches of the two groups towards adopting the information system were also reflected in the stances they adopted towards participating in the research and having their work practices recorded by the video camera. The doctors maintained a boundary between themselves and the research by turning their bodies away from the camera and only rarely explaining their work practices to it. In contrast, the scientists directly engaged with the camera and produced accounts about their work as they performed it. In addition, the scientists participated in a reflexive viewing session in which they viewed recordings of their own work. This session enhanced the researcher's understandings of the scientists' work whilst also producing new insights for the scientists themselves about the ways their work had changed as a result of the introduction of the new information system. These contrasting modes of engagement led to the conceptualisation of the video camera as a 'presence' in the research setting. This notion of presence forms the focus of this paper and contrasts with Foucault's concept of the 'gaze' since the

immediacy of the camera's presence enables the participants to dialogically engage with the camera. This is the case since it simultaneously enables researchers to investigate professionals' work practices whilst also facilitating the professionals themselves taking up the role of inspector into their own ways of working.

## **Introduction**

The successful conduct of any ethnographic research project relies on the formation and maintenance of different sets of relationships. Relationships between researchers and organisational/institutional bodies such as universities, and Human Research Ethics Committees (HRECs) as well as those bodies governing field sites such as government departments, hospital management and school boards are significant as they regulate the access of researchers to fieldsites and the data collection practices employed by researchers. Relationships formed between researchers and individual participants hold particular importance for ethnographic research since they pre-empt the engagement of participants with the research process. The focus of this paper is on the way that two groups of participants engaged with the research process differently, and the implications this had for the types of data that were produced. This paper considers the notion of engagement to go beyond considering whether individuals consented to participate in the research or not and instead examines the modality that each group of individuals adopted towards having their work practices recorded by the video camera after they had agreed to participate in the research.

## **Background**

The research presented in this paper emerged from an ARC Linkage project jointly held by the Centre for Clinical Governance Research in Health and the Centre for Health Informatics at the University of New South Wales. The focus of the project was to evaluate the introduction of electronic information systems to work processes associated with ordering laboratory tests and medications.

Within this project, the author of this paper undertook an ethnographic study of the social and organisational impacts that the introduction of the electronic ordering system had for the practices and relationship of the doctors and scientists who collaborated in the process of ordering laboratory tests.

## **Methodology**

The author of this paper conducted an ethnographic study over a period of eighteen (18) months at a metropolitan teaching hospital in Sydney, Australia. During this time, approximately sixteen (16) hours of video recorded data was collected, in addition to field notes from ethnographic observation, interviews and documentary material. The doctors included in the study were from different oncology sub-specialties whilst the scientists were from the biochemistry laboratory. The two primary locations at which data was recorded were the wards and laboratory. At the wards, the focus of the data collection was doctors' ward rounds whilst at the laboratory, individual scientists were filmed as they completed tasks in the test ordering process, from receiving orders to verifying results. In addition, the scientists also participated in a reflexive viewing session at which they viewed portions of the video data and commented on previously unrecognised facets of their practice as well as the ways their work had changed since the original recordings were made.

## **Results**

### **1) Approaches to adopting CPOE system**

The central findings of the research found that the test ordering process is organised into tasks aimed at forming, maintaining and verifying a triumvirate association of specimen(s), testing information and patient information. The accuracy of results reporting crucially relies on this association in that it involves correctly identifying individuals (patients) with their disorders (discovered by performing tests on portions of bodily matter known as specimens). The implementation of the computerised information system changed the way that two elements of this association, testing information and patient information,

were recorded and communicated to the laboratory. Following the implementation, problems for the scientists in attempting to verify the triumvirate association of each order arose because of two factors – the design of the information system and the incorrect use of the system by the doctors. The contrasting significance of the impact of this new information system for the doctors and scientists was found to be grounded in the differing approaches of the two groups towards using the information system. For the doctors, the system was located at the periphery of their work, as demonstrated by the fact that it was only used by the junior doctors, and they only ordered tests once the senior doctors had left the ward at the conclusion of the ward round. In contrast, all of the laboratory scientists were responsible for using the information system to verify the triumvirate association. Such tasks formed their focal work and as such, the new system perturbed the scientists' work to a far greater degree than the doctors' work. In addition, this difference in approach led to frustrations for the scientists, as they often had to contact the doctors about rectifying incomplete or incorrect information that they had included when placing orders.

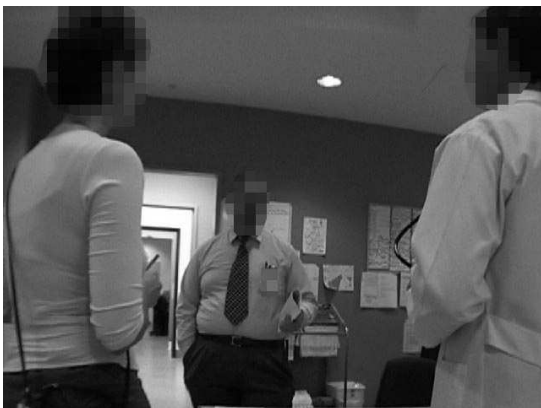
## **2) Modes of engagement**

The contrasting approaches of the doctors and scientists towards using the information system is significant to consider here as these contrasts were reflected in the stances that the two groups adopted towards having their work practices recorded by the video camera. The doctors and the scientists had identifiably contrasting reactions to, and subsequent engagement with, the research process. Aspects of their approach were evident from the initial stages of data collection and remained consistent throughout the data collection stages of the research.

The doctors positioned themselves at a distance from the research. They maintained a boundary between themselves as doctors and the research process (including the researcher (the author of this paper) and the video camera). They embodied this distance through both explicit and tacit behaviours.

Explicit resistance was enacted by one doctor in particular who had consented to participate in the research. He was from the radiology oncology team who had a few patients in beds on the same ward as the medical oncology team. Although he consented to participate, whenever I was present at the ward he would make comments to the effect of 'I've already seen all my patients today so there's no point following me' and 'I don't think I'll be very interesting for you, I've only got two patients here and I'm leaving in a minute'. Members of the surgical oncology team also demonstrated their discomfort with the research by asking 'So how much longer have you got to go filming us?' and when I said I would only be attending their ward rounds twice more they replied 'Oh, good'. Despite this explicit discomfort, none of the doctors withdrew their consent to participate in the research.

In addition to this explicit discomfort, the doctors also enacted a more passive form of uneasiness through positioning their bodies in ways that clearly enacted a boundary between themselves and the camera. They did this by turning away from the camera and facing each other during their discussions in the corridors and at the workstations (see stills below). They often formed a circle when talking and would not accommodate me or the camera into this circle.



Further evidence of the difficulty that the doctors had with engaging with the video camera and the research was their direct contact with the camera. Most generally, the doctors would know that I was filming and would not talk directly either to the video camera or me. On some occasions, however, they would seem to forget that I was filming and when they realised that I was filming them they would laugh nervously.

A second example of the doctors finding direct engagement with the camera to be problematic was a clip recorded with the surgical resident Lucy. The clip was recorded soon after the information system had been implemented. Prior to filming the clip, I had been talking to Lucy as she sat in front of the computer at the workstation about how she thought the new system would affect her work and what she thought of it. She started to tell me in detail about the confusing screen layout and the position of the patient's name on the screen. Since what she was telling me was interesting to my research as she was describing the problem whilst demonstrating it on the computer screen, I asked her if I could film her repeating what she had just told me. She agreed, and then when I started the recording, her explanation became flustered. She concluded with 'Am I confusing you now? I'm confusing myself. I [had] better stop talking.'

This example and other video data similar to it, make it apparent that the doctors were unsure of the language and bodily expression that was suitable for interaction and recording for social science research. They became nervous and self-conscious about their behaviour and self-presentation. This nervousness may have been grounded in their concern about who would view the video recordings. Although I had explained that the recordings were protected from being shown to anyone apart from researchers on the project team, that they could never be subpoenaed (due to a legal protection order known as Qualified Privilege that had been secured for the video data) and that I was interested in information use and not in the competence or fault with which they conducted their work practices, an air of discomfort remained. This discomfort was further

manifested during one recording in particular. Lucy and another resident, Joshua, were discussing a patient's case and had difficulty in locating the patient's medical record and understanding her history. When Lucy noticed that I was recording she appeared very unhappy so I asked her if she would like me to delete the recording and she said yes because they were having trouble working out what treatments were currently being administered to the patient.

Participants' perceptions of research techniques are inevitably grounded in ways they have previously seen the techniques used and such perceptions inform the way that participants approach involvement in research studies using such techniques. Two popular uses of video recordings are on television, particularly in expose-type reports on current affairs programs and as part of evidence in court proceedings. The litigious culture that currently surrounds medical practice in Western societies (Ham & Alberti 2002) may also be a factor in increasing medical practitioners' wariness about having their behaviour recorded. In addition, the popularisation of transmission and viewing of video recorded material on the internet may also have caused concern for the doctors, despite my assurance of the restricted nature of the viewing and the ethical nature of my research conduct as a member of the academic research community.

A further reason for the limited engagement of the doctors with the research that I was conducting is related to the subject of the research. I was interested in the information use practices of hospital professionals and the ways they are affected by the introduction of an information system for ordering pathology tests. This was explicitly stated to each of the participants at the consent stage of the research. During this research, the doctors' ward round practices occurred in such a way as to privilege co-present communication with other doctors and patients whilst de-privileging documentation-related tasks. The information system was identifiably positioned among the de-privileged tasks conducted during the ward round. The doctors thus aligned my presence and the conduct of my research with its subject, and thus, I suggest, I was made peripheral to their

ward round conduct, along with the information system. The junior doctors were the ones who used the system and any difficulties they had when using it were muted since they never openly discussed such difficulties with their superiors. These discussions did not occur since the change in test ordering documentation technology did not disrupt or impede the conduct of the doctors' focal work tasks of delivering care to patients during their ward rounds.

In addition, the doctors may have enacted a distant relationship with the research due to its orientation as ethnographic qualitative research. Generally, medical research is based on randomised control trial quantitative research that tests hypotheses and aims for generalisability (Ezzy 2002). Qualitative research, in particular ethnography, aims to uncover the richness and nuances of micro level interactions between human actors to understand the way they create meaning (Morse & Field 1995; Pope & Mays 1995; Rice & Ezzy 1999). The theoretical standpoints and the objectives of the two types of research differ greatly. The limited understanding that the doctors had about the research that I was conducting was demonstrated in two instances.

Firstly, in the early stages of my data collection, whilst walking between patient rooms, the staff specialist in charge of the medical oncology ward round, William, asked me what ethnography was. John, the senior registrar (the next most senior doctor present) joined the conversation and went on to confuse ethnography with calligraphy:

#### Excerpt 1

William        "What's ethnography by the way?"

RF                It's a study of how things occur naturally, in a natural setting. So our interest is to study what happens day to day, the normal practice of what you do.



William      Ethnography

John            ...do with pens, something to do with calligraphy.”

The equation of video recording with television is evident in the second example. I had asked Professor Baxter, the gynaecology oncology head surgeon, if I could return to conduct further data collection with his team some six months after the original filming as there had been some technical problems with the recordings I had made the first time. He had agreed and, at the end of one of the last ward rounds during my second stage of data collection, he recounted the story to Phillip (Specialist) and to me of the Qantas advertisement that had been filmed where the director had lost the tapes and it had to be re-filmed. He said to Phillip that I had returned to collect further data as I had lost my previous recordings. Although it was incorrect that I had lost my previous recordings, I did not feel that I could again explain the correct version of my situation, which was that I had had some technical problems with the sound recording on the original data. The equipment that I used to record my video data, which was a single camera carried by myself, clearly distinguished me from the advertising professionals who would have filmed the Qantas advertisement, however Professor Baxter's comment clearly shows him to cognitively connect video recordings with public display on television.

The video data recorded with the scientists differed markedly from the data recorded with the doctors. The scientists were much more open to having the video camera record their work, a fact that was shown by their direct engagement with the camera and me as a researcher. This direct engagement took the form of them facing the camera and explaining their work. They would talk through each step of the work practice they were currently performing and would hold up order forms and specimens so that their detail could be recorded by the camera.



These explanations were useful for the research that I was conducting as it provided me with an understanding of the intricacies of their work processes that I would not have gained otherwise.

Through this direct engagement with the data recording technology, the camera, the scientists enabled a very different relationship to the research process than the doctors had. They welcomed the research process and myself as the researcher as a resource for reflection on their own work. That is, they saw this form of research as a potential medium through which they could demonstrate the troubles that the new information system was causing for their work. They saw the potential to then later use these recordings to reflect on ways that their practices had changed since the introduction of the system. Of particular interest was to identify ways in which they had alleviated some of the problems that the system was causing for their work by successfully performing workarounds (Gasser 1986).

Although the traditional research associated with laboratory science is also quantitative in nature, and the laboratory recorded their work in organisationally formatted numerical measures such as turn around times, the scientists were interested to 'see' their practices. Through being interested to view recordings of their work, the scientists demonstrated the value that they placed on aspects of

their work that could not be quantified, such as staff attitudes, morale and frustration.

This interest in reflecting on their practices was evident from their explicit requests to view the recorded material. The reflexive viewing session was conducted eight months after the initial data was collected. The forty-five minutes of video that I used as the basis of the session elicited two-and-a-half hours of discussion from the laboratory manager, the laboratory database manager and the assistant laboratory manager.

During the reflexive viewing session, the scientists were able to identify issues occurring from a more longitudinal and organisational perspective than they previously had done during the initial data collection stage of the research. For example, after conducting my initial analysis, I had identified a particular clip as a good example of a problem order and the extra work that the scientists were required to undertake so that problem orders could be successfully tested. During the reflexive session, when viewing this clip, the scientists identified issues such as the inadequacy of the Information Systems Department's (ISD) education program for doctors about how to use the new system, the absence of formal assessment of doctors' competence at using the system, the misunderstandings that the doctors had about the way their errors affected the work of the laboratory and patients, and also the absence of a liaison person between the laboratory, ISD and the doctors who has the authority to enforce ordering protocols on the doctors. All of these issues became significant to the analysis that I conducted after the session and have contributed greatly to the findings that emerged from the research.

The reason for the substantial engagement of the scientists with the research process is again related to the significance with which the introduction of the new information system impacted on their daily work practice. The system computerised the documentation interface between the doctors and the scientists

at the stage of initialisation and receipt of the orders for testing. This had a major impact on the work of the laboratory in terms of them being able to accurately log specimens in to the testing system.

The focus of my research on the ways that the introduction of the new computerised system had perturbed usual work practices closely mirrored the primary focus of the scientists who aimed to resolve problematic aspects of their work, the majority of which stemmed from the introduction of the CPOE system. Thus, in contrast to the doctors for whom the introduction of the information system occurred on what they perceived to be the periphery of their work, the centrality of the system to the scientists' work and the focus of my research, led them to have a much greater engagement with the process of researching the consequences of its introduction.

A further reason for the scientists' direct engagement with the research process is that they may have viewed the research process as a medium for addressing their disempowered position within the hospital organisation. During the planning stages, the scientists had been largely excluded from influencing the design of the information system due to their relative powerlessness within the hospital hierarchy. As such, they may have seen the research as an opportunity for them to 'find a voice' and air their discontents about the impact that it was having on their work.

As is apparent from the above analysis, both groups formed a strong association between the research process and myself as a researcher, and the test ordering information system that was the focus of my research. In turn, the relative significance that the documentation aspects of the test ordering process had for each group's focal work tasks led them to locate the research process in the same position as these documentation tasks. So, for the doctors, the conduct of documentation tasks was relegated to the periphery of their focal work and was performed by the most junior members of their team. As such, because these

tasks formed the focus of my work, the doctors located me at the periphery of their practice. In contrast, due to the test ordering documentation having crucial importance for the successful conduct of the testing process, representing their work for the camera became a central focus of the scientists' practice.

This section has provided an outline of the contrasting modes of engagement that the doctors and scientists enacted towards having their work recorded by the video camera and the research process more broadly. The limited direct contact of the doctors with the camera identifiably contrasted to the way that the scientists intentionally presented their work for it to be recorded. The next section goes on to explore further the engagement of the scientists with the research process.

### **Discussion – Producing Accounts and the Camera as 'presence'**

As has been discussed above, the direct engagement of the scientists with the research process led to the production of a different type of research data from that recorded with the doctors.

With little prompting from myself, the scientists explained for the camera aspects of their work and the way they had been affected by the introduction of the information system. They performed their work for the camera in a way that self-consciously accounted for the ability of the camera to capture both visual and audio aspects of their practices. For instance, they held up forms, labels and specimens for the camera and would often ask 'did you get that?' before moving the artefact away from the lens (see stills below).



As such, the scientists ‘acted out’ their work at the same time as completing it. Their work became more than just a functional task – it became a way of explaining the logic and importance of their practices for achieving the overall goals of their work. Van Maanen and Barley’s (1984) concept of ‘occupational community’ is demonstrated in these explanations. One part of the definition of occupational community notes that one characteristic that defines a group as a community is that the members of the community produce

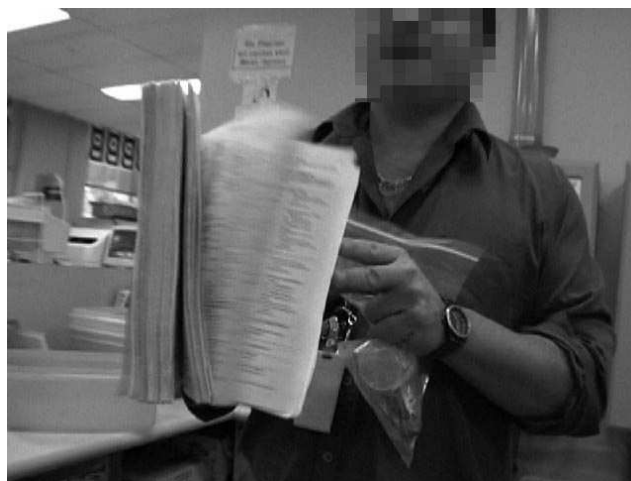
Compelling accounts attesting to the logic and value of [their] rituals, standards and codes. (Van Maanen & Barley 1984, p.287)

Throughout the video recordings, the accounts that the scientists produced were imbued with explanations of the importance of their work for contributing to patient care delivery and the way that this work adhered to quality principles and standards. In particular, following the implementation of the information system, the scientists were forced to learn new work ‘rituals’. One of these ‘rituals’ or practices involved the need for paper print-outs of test orders that the doctors placed electronically in the new system. The logic of this practice for the scientists related to their ability to retain accuracy of specimen collection times and also the accuracy of logging in the orders by matching the specimens with their correct tests. It is through describing this logic that the importance of the triumvirate association of patient information, testing information and specimen(s) for scientists’ work is reinforced. An example of such a ‘logic-stating’ account is

demonstrated in the following data excerpt. This example demonstrates the breakdown in normal work routines that occurs for scientists when they cannot successfully form the triumvirate association. In this clip, Nicholas, the laboratory manager, received a specimen carrier bag containing specimen(s) but no order form (detailing patient and testing information). Although a label is attached to each specimen containing the patient's name, no information is present about which tests the doctor would like to be performed on this specimen. After telephoning the ward and asking for the form to be sent to the laboratory, Nicholas says:

“Why do we need a form? Because that's a tube and that's a urine [showing specimens] and that's all the tests we do in the universe [showing book of test types]. What tests do we want on this? ... there could be thousands of orders in the computer for this patient and which one do I pick?”

During this account, Nicholas demonstrates his awareness of the visual and audio capability of the video camera as he explains the logic of his practices verbally whilst simultaneously 'acting out' his account by deliberately showing to the camera the material resources he uses when completing these practices. In addition, Nicholas is also able to emphasise his need for the order form by presenting the book of test orders for the camera:



The thickness of the book that is visible in the clip enhances the impact of the verbal account that Nicholas gives about the necessity of printed electronic order forms for the laboratory's work. Further to this, the disjunction between the desire of the information system's designers to achieve a paperless electronic ordering process and the requirements of the laboratory's work in terms of ensuring the accuracy of testing information and specimen collection times is also demonstrated in the account given by Nicholas.

A further point to note from the previous example is that the ability of the video camera to capture data in real-time serves to enhance the appreciation of the research for the frustrations and delays that the scientists experienced. In this example, the time that it takes Nicholas to identify the problem with the order, phone the ward, ask for the form to be sent to the laboratory, and wait for the form to arrive occur over a five-and-a-half minute period. This sequence of activity that Nicholas performs to resolve a single problem order and the time it takes to do so become significant when considered within the broader laboratory work context in which they receive approximately 3500 orders per day and the scientists have commented that the scenario in which forms are missing occurs 'hundreds' of times a day. There is thus significant delay and problems for the scientists in achieving their overall aim of efficiently delivering accurate test results for use in patient care decision-making. These delays have occurred as a result of the introduction of the new information system.

The above clip (and others similar to it) demonstrates the way that the scientists' direct engagement with the research process, and their appreciation of the ability of the video camera to record both visual and audio aspects of their work led them to present their work in a particular way. These accounts contrasted to those that would have been produced if I had interviewed the scientists about their work. Accounts produced in an interview situation would be post-hoc reflections on certain practices whereas the video recording of the scientists work practices meant that the scientists produced accounts *at the same time* as



completing their work. In this way, the scientists articulated the logic of their work and the problems they faced as these issues were occurring. The immediacy of these accounts had a two fold effect; they served to enhance my understanding of the scientists' work and the challenges they faced, and secondly, they reinforced for the scientists the goal that underpins their work, namely, the efficient delivery of test results to professionals who deliver direct care to the patients and the way this goal was hindered by the consequences of the introduction of the CPOE system.

The second aspect to the account-producing engagement of the scientists with the research process was found in their desire to participate in a reflexive video viewing session. During this session the scientists came to new understandings about the work practices contained in the recordings, as they were able to view their work in a way they had previously not been able to do.

An example of the new understandings that the scientists developed about their work is found in the following instance. One of the clips shown during the session was of a problem order. One of the scientists, Jason, had received an order that contained an order form that was a paper print-out of an electronic order. When he went to log in the order, the order number on the form did not match any of the orders in the computer system for the patient. When Jason tried to type in the test names himself, they were not recorded by the system. Nicholas says in the clip that they would contact the information systems department (ISD) and ask them to educate the doctor who placed the order about how to order correctly. Nicholas then tried to enter the tests by going to a different part of the CPOE system and successfully ordered the tests.

When viewing this clip at the reflexive viewing session, the scientists noticed that the order form Jason was using in the clip was a photocopied form. The reason for this was that, instead of completing a new order, the doctor placing the order had just photocopied a copy of a previous order form that they had attached to

the patient's file. The scientists said that the doctor would have written the correct date and time of the current specimen collection on the specimens themselves since this was a legal requirement. They said that the doctor would not have realised the importance of the correct order documentation for the scientists and would have assumed that any form that they included with the specimens would be assumed to relate to those specimens; they were not concerned with providing the correct order number, date or time in the form of a print-out of a new order with the specimens for testing. This instance again highlights the relative de-privileging of order documentation for doctors as well as their limited understanding of the importance of correct documentation for the scientists' ability to verify the triumvirate association for each order. What is significant about this scenario is the new way in which the scientists came to understand a problem that occurred for their work eight months previously. The scientists commented that it was only by reflexively viewing the video recorded clip of this instance that they were able to identify the cause of the issue:

#### Excerpt 2

**Nicholas:** "And even doing that problem in the first instance it wasn't until we saw the tape that we identified the root cause of the problem..."

**Kathy:** "Because neither you nor Jason said 'This a photocopy out of patient notes' at the time you were doing it but all of us here looked at [the video clip] and instantly picked that up and knew what caused part of the issue."

This section has described the way that the scientists' direct engagement with the video camera led them to produce accounts about their work as they performed it. These accounts were not retellings of a pre-rehearsed script but emerged in the here-and-now as the scientists enacted their normal work practices. It was the presence of the camera, and the scientists' awareness of its functionality, that led them to perform their work and describe it in ways they had

previously not been able to do. In doing so, the scientists were able to contextualise the issues that had been captured in the recordings in terms of broader issues, such as staff morale, that I had not previously identified when analysing the original data. Not only did the scientists deepen my understandings but upon viewing video recordings of their work the scientists were also able to identify for themselves the cause of some of the problems they faced, causes that they had not been aware of when the original data was made. As such, the video camera, and the material it recorded, became more than just research data for analysis by a researcher external to the occupational community in which it was recorded, it also became a resource through which the members of the community could reflect on and make sense of their own practices.

The above sections have outlined the contrasting ways in which the doctors and scientists engaged with the research process as an external source of perturbation to their usual practices and the way that the direct, dialogic relationship that the scientists enacted with the video camera enabled them to produce particular types of understandings about their work. The discussion now moves on to consider the way in which the video camera may be considered an external presence in the research setting.

The first aspect to consider, as mentioned above, is the way in which the engagement of the participants with the video camera served to blur the distinction between the traditional role of a researcher as a participant or observer. Although it has been noted that some authors now consider this role to be in flux throughout the conduct of fieldwork (Gold 1958; Holy 1984; Pope 2005), noteworthy observations arise when considering the positioning of the video camera according to these roles. During the data collected with the doctors, their relative non-engagement with the camera led them to firmly position the camera and the research process as strictly an observer of their work practices. The camera created relatively minimal disruption to their normal ways of working and was thus an 'outsider' to their practices. In contrast, the

scientists afforded the camera a more 'participative' role in their work as they directly explained for it the logic and detail of their work. The scientists took up the external perturbation that the camera offered as a resource through which they could account for and reflect on their practices. In this way, the role of the camera as participant or observer was not dictated solely by the wishes of the researcher. Instead, it was the participants who chose the extent to which the camera was accommodated into their work performance.

As such, it may be possible to consider that the video camera became more than just a recording device and was a 'presence' in the research setting in the same way as the participants and myself. This was due to the ways in which the participants oriented their work practices so as to include or exclude the camera from capturing their work practices as they performed them. This presence was distinct from a 'gaze' since it was a medium for recording and studying work in the here and now. The immediacy of the presence of the camera differs from the idea of a gaze that implies some temporal and spatial distance from the recorded material. In addition, the idea of 'gaze' usually refers to people external to the setting in which material is recorded taking the role of inspectorial surveillance over the practices they view on the recordings.

The 'gaze' referred to by Foucault (1976; 1980) involves continuous surveillance of the actions and condition of individual bodies by individuals holding positions of authority. The institutions at which these individuals work sanction this authority. Significantly, the surveillance effected by the presence of the observer becomes internalised by the subjects of the observation over time, to the extent that they come to self-regulate their behaviours even in the absence of an observer. The use of video cameras as a surveillance technology for regulating the behaviour of psychiatric patients has been studied by Holmes (2001) who refers to the video cameras as a "powerful disciplinary apparatus that constrains through the art of watching" (Holmes 2001, p.10). Again, this 'art of watching' is undertaken by individuals in a position of authority and contrasts with the

'presence' effected by the camera in this research. In the research presented in this paper, the participants themselves took up the position of 'inspector' into their own practices in the interests of understanding and improving them. In this way, it was not an external regulatory force that assessed their practices, but the practitioners themselves.

As such, the most significant distinction between a gaze and a presence arises due to the different temporal and spatial stances that these positions adopt in relation to those individuals whose practices they observe and record. The unidirectional nature of the gaze, in which one individual observes another, often in a separate location and at a time subsequent to when the practices were recorded, precludes it from enabling engagement since no dialogue may be established between the participant and the observer/inspector. In contrast, the immediacy of the presence of the camera in the research setting studied here created the possibility for reflexive engagement of the participants with the research process and, as such, facilitated the participants' assumption of the role of inspector into their own practices.

## **Conclusion**

This paper has detailed the two distinct modes of engagement that two groups, doctors and scientists, enacted towards accommodating a video camera and researcher into their workplaces for the purpose of studying the impact that a new information system has on their practices associated with ordering tests. This engagement was found to be related to the differing significance that each group attached to the centrality of the test ordering process for achieving their focal work tasks. The different modes of engagement then considered the way that the video camera may be viewed as a presence in a research setting in the same way as researchers themselves.

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