

## VIRTUAL ETHNOGRAPHY

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### Abstract

This paper addresses the conference theme considering the practitioners of scientific and technological culture by addressing the extent to which the social sciences must share in that culture in order to produce an adequate analysis. It is suggested that through considering our analytic stance in the light of a new substantive area, we may shed light both on what we assume to be special about that area and on the assumptions of our analytic practices.

The paper draws on data from a conventional, face-to-face ethnographic study of scientists using information technology, and from an exercise in virtual ethnography across a computer network. The paper considers the extent to which conventional ethnography ignores certain aspects of technological culture, and questions the need for sociologists in technological settings to themselves become technological adepts. Problems for this approach are raised where analysis involves attempts to translate virtual interactions into conventional terms. Analysis of the process of becoming a technological adept as sociologist is used as a means to reflect on the implications of technological culture.

### Introduction

This paper seeks to introduce a new form or way of conceiving of ethnography, a virtual ethnography. This new form is developed as a response to the need to study communities<sup>1</sup> in which the use of electronic communications such as provided by computer networks are routine. Virtual ethnography is not put forward as a new method to replace the old – rather it is presented as a way of bringing into focus both the assumptions on which ethnography is based, and the features which are taken to be special about the technologies concerned. It is argued that if we are to produce new insights about the practitioners of this culture, it is first necessary to examine the assumptions of our own analytic

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1. The extent to which these may be seen as communities in the ethnographic sense is of course itself a question.

practice, and indeed question the extent to which our analytic practices may be seen as independent of the culture which we study.

The data on which this paper are based are drawn from a study of the information technology involved in human genetics research in the UK. As a part of this study, the ethnographer spent time with a group of computer services personnel providing a remote access menu system through which UK geneticists could communicate and access data resources. The aim of the study was to follow the information system in both production and consumption, in effect carrying out an ethnography in which the technological artefact, rather than the human actors, was the subject of a shadowing exercise<sup>2</sup>. The outcome was to be an analysis of the role of the technology in the construction of scientific facts.

### **Ethnography and technology**

In order to highlight the originality and innovativeness of virtual ethnography, I require a conventional ethnography to act as a foil. Of course, to attempt to lay out the essential features of ethnography, to define what ethnography is once and for all, is futile. There are many different flavours and features, which are emphasised to differing degrees by each author who writes in the ethnographic tradition. Each author constructs not just a textual reality with regard to the setting<sup>3</sup>, but also a reality with regard to what it is to be ethnographic. Some authors stress the role of ethnography in detailing day-to-day practices, while others emphasise the ability of the ethnographer as stranger to bring into question the taken for granted in the ethnographic setting<sup>4</sup>. One common feature, however, appears to be that the ethnographer becomes embroiled in the setting, and comes face-to-face with the natives such that a deep understanding of the practices of that setting is gained<sup>5</sup>.

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<sup>2</sup>. This move is within the spirit of the exhortations of actor-networkers to treat with humans and non-humans symmetrically, and not to enforce *a priori* distinctions (Latour, 1992). However, this is not so much a study within an actor-network framework, as a test of the hypothesis that taking technology seriously makes a difference to the conclusions which we may draw.

<sup>3</sup>. Atkinson (1990).

<sup>4</sup>. Some different flavours are discussed in a recent paper by Cooper *et al.* (1993).

<sup>5</sup>. From this point on I increasingly rely on Hammersley and Atkinson (1983) to provide the “conventional” ethnography required as a foil for virtual ethnography. This usage, rather

As Hammersley and Atkinson (1983: 2) have it, “the ethnographer participates, overtly or covertly, in people’s daily lives for an extended period of time, watching what happens, listening to what is said, asking questions; in fact collecting whatever data are available to throw light on the issues with which he or she is concerned.” This type of ethnography, this ethnography I have characterised as conventional, therefore gives centre stage to the human actors, to the sense which people make of the world. The role of the ethnographer is to observe, document, and analyze these practices, to present them in a new light. The study of cultural artifacts, of documents where appropriate, is a somewhat secondary device in which they are examined as “social products” (Hammersley and Atkinson, 1983: 137). This is, of course a step forward from using them as mere sources of secondary data, as Hammersley and Atkinson point out. However, I wish to argue that carrying out an ethnography through the medium of a technology<sup>6</sup> brings into question the role which technologies have so far played in ethnography, and suggest that this limited role also limits the conclusion which can be drawn.

Ethnography has become a common feature of studies in the sociology of scientific knowledge (SSK) and in social studies of technology. It is suggested that it is through this close attention to the working practices of science and of technological development that we may see the social effort which goes into the construction of a scientific fact or the congealed social relations which are contained within a technical artefact<sup>7</sup>. It is suggested, by another strand of ethnographic research in technical settings, that by such close attention to daily working practices we may

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than intending Hammersley and Atkinson to stand unproblematically for the whole of ethnography, is a purely rhetorical device, and may be taken as a tribute to their clarity and coverage of a broad range of features.

<sup>6</sup>. I do not, of course, wish to imply that ethnography is not already a technological practice. The use of tape recorders, video cameras and computerised analysis packages have all been examined, although largely in terms of the biases or shortcomings which each technology is likely to carry with it. Hammersley and Atkinson (1983: 145) state: “There are several methods ethnographers use for recording their data, most notably fieldnotes, audio-taping, video-taping and filming. Which of these is the most appropriate depends very much on one’s purposes, the nature of the setting, and the financial resources available, though these techniques are not mutually exclusive. Their usefulness also varies according to the type of data to be recorded.” Ethnography itself could be described as a technology for making sense of people. However, carrying out ethnography through the medium of a technology, particularly one which is also used by the participants in the setting, is, I feel qualitatively different.

<sup>7</sup>. This point is discussed by Woolgar (1991).

be able to assist in the design of better technologies, those which more closely mirror the actuality of working life<sup>8</sup>. This latter strand has little to do with the research questions with which I am concerned: how it is that laboratory technologies, particularly information technology, are integrated into the scientific research and fact construction process. I will therefore concentrate to a greater extent on the SSK ethnographies, concerned as they so often are with unpacking the black-boxes of scientific facts. I draw on three of the more prominent ethnographies carried out in the technological setting of the laboratory over recent years<sup>9</sup>. In each I will be looking to examine the approach taken by the ethnographer toward the technology in an attempt to formulate a way of incorporating these “cultural artifacts” into the ethnography in a way which gives them prominence. In particular, I will attend to the role which the technologies employed in scientific research play in these ethnographies, in order to develop an argument on the extent to which the ethnographers become involved with the technologies which form part of the setting studied, and the ways in which these technical settings are treated as requiring a special approach from the ethnographer, different to the approaches used in more traditionally “primitive” settings.

In one of the most famous SSK ethnographies, Latour and Woolgar’s “Laboratory Life” (1986), the technology of the laboratory is attended to by the ethnographer as a key feature in the construction of scientific fact. It is through the action of laboratory technologies as inscription devices that these machines primarily enter the ethnography. The inscription devices function in the laboratory as producers of immutable mobiles, inscriptions which through their apparently unchanging nature, their claims to represent a reflection of an underlying reality, and their enhancement of the action at a distance of a researcher through their mobility, play such a large role in the construction of scientific fact and the ability of the

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<sup>8</sup>. This approach is discussed by Button (1993).

<sup>9</sup>. I have, of course, played a cheap trick. In bringing virtual ethnography into focus as new, original and distinctive, I have recast other ethnography as conventional, and I have used old texts to reinforce my own newness. This neglect of so much recent a vibrant work is, of course, entirely deliberate, but not intended to do these works a disservice. I have favoured here rhetorical force over academic authority and completeness – in order to make one point, I have put at risk my own credibility in terms of academic rigour and awareness of the literature. I trust that in the constrained space of this conference paper I shall be excused.

laboratory to be extended to the world at large<sup>10</sup>. The means through which these laboratory technologies become accepted as producers of immutable mobiles and their inner workings become beyond question is described as black-boxing. In their ethnography, Latour and Woolgar succeed in making the laboratory truly strange, and it is their attention to the technologies of laboratory life which assists us in viewing this relatively familiar twentieth century, Western phenomenon as open to question. It is in part the description of the attentions of this tribe to the outpourings of their inscription devices, and the almost sacred quality attributed to the documents which are produced, which renders the account so compelling. Yet, in their ethnography, Latour and Woolgar do not treat the technical setting as being in any way special, or requiring a particular effort from the ethnographer other than in treating the setting as equally AS STRANGE as any “primitive” tribe could be to a Westerner. The making strange of technological practices here almost depends upon the ethnographer’s lack of competence in their operation. Lynch (1985) casts the acquiring of competence in laboratory techniques in terms of the access which it gives to conversation with members of the laboratory “These limited competences gave me considerably more access to the talk and conduct which I witnessed in the lab than would have been possible had I relied solely on the analytic skills of a social scientist while observing members activities” (Lynch, 1985: 2). Traweek treats the technologies used and developed by her high energy physicists as texts, from which the features of organisation of fact construction and laboratory life may be read off – “Detectors themselves, then, supply a system for classifying modes of discovery. Each is the embodiment of a research group’s version of how to produce and reproduce fine physics, how to gain a place for the group’s work in the taxonomy of established knowledge.” (Traweek, 1988: 72). “Reading the detectors has enabled me to tell a story about high energy physics culture; reading machine-texts enabled me to describe the reproduction of nature, the construction of discovery, and the reproduction of physicists in this community.” (Traweek, 1988: 161). Traweek’s competences with and understanding of technology therefore are to enable her to “read” better. She focuses on a process in which, for the ethnographer, machine-texts may be read,

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<sup>10</sup>. The extension of the laboratory to the world at large is dealt with in depth by Latour (1983).

and may be read in a particular way as the embodiment of an approach to the construction of knowledge.

But how am I therefore to approach my own study, in which the technology appears, unproblematically, to produce texts, but where the technology also to a large extent forms a channel of communication for the human subjects of my research? How am I to bring together insights from SSK, in which the construction of scientific fact is a social process, and insights from social studies of technology in which the character and capacities of the technology are similarly open to social construction? In effect, to take the traditional approach to my ethnography asks for the making of *a priori* distinctions between utterances of a human and inscriptions from the machine, and the application of differing conceptual frames to them. I need to treat my machine and human texts symmetrically, and to consider the ways in which all kinds of texts are generated and read, within the community which I study. To do this requires a competency in using whatever communication technologies are in operation, but not, as a mere means to having useful conversations with the natives, and not as a means of finding out what is REALLY going on in the day-to-day practices of the natives. In this formulation, what the community under study are, and what the machine actually is, are constantly under question.

### **How do I get into the field?**

The main research question with which I had entered was the extent to which laboratory technologies, particularly information technologies, are integrated into the fact construction process. One aspect of this, important in the light of recent debates on the notion of non-human agency, was the extent to which attributes of humanness and non-humanness were distributed, and the ways in which traditionally human characteristics such as creativity were allocated amongst humans and non-humans. I was to follow this theme through from IT development, in a computer services department, to the use of IT in the laboratory. Accordingly, the first step of this ethnography, which explicitly set out to “shadow” a technology rather than a human, was to join the computer services department. I joined them as a participant observer: in exchange for the insights which I gained from my time with them, I was to engage in the updating of the

user manual for the remote access menu system which they provided for biological researchers. In this role, I had access to the system, albeit I am sure with certain limits on my powers which I never fully explored (to do so would have been to be sociologist turned hacker!). I was placed on various mailing lists within the department which would keep me informed of forthcoming meetings, and I was introduced to many features of the network both as part of my work in updating the manual, and as a part of the interest which many of the department took in finding new features in the network and introducing others to them<sup>11</sup>.

As might be expected, electronic communications formed a large part of work in the computer services department. Electronic mail was a commonly used means of communicating, even between those in adjoining offices. Of necessity, I began to participate in this communication: new sections for the manual were forwarded to me electronically, and I became adept at saving the messages into my own files and pasting them into the growing word-processor files which comprised the manual. I was therefore induced, as both participant and observer, to become part of the technological culture which I sought to investigate. But, as in the common ethnographers dilemma, I felt that the action was happening elsewhere. While one could in theory ask informants to explain what they were doing as they typed on their keyboards or stared at their terminals, I still felt that I was missing essential features of their work. It seemed that I was not alone in this sense of the invisibility of much of the activities in the department. Fortnightly progress meetings were held for the systems team and the applications team, in which each member reported on the tasks which had been completed in the preceding fortnight and received tasks for the fortnight to come, in order of priority. For me as an ethnographer, and for the head of the department, this progress meeting acted to make the invisible work visible, although members of the teams privately held that the writing of the fortnightly report was an art which entailed making visible the right kinds of work in the right quantities.

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<sup>11</sup>. Indeed, this turned out to be an important feature of the manual itself: it was not just, as manuals are commonly understood, a "how-to" guide, but also a "what to" guide – in my discussion with the head of the applications team as to the appropriate length and amount of detail to be included in the manual, it became apparent that the function of the manual was rarely to guide on explicit details of operation of the various options: rather it was to alert the "users" to things that they might want to do, if only they knew about them.

I was introduced to various “party-pieces” of network usage. When my computer was first hooked up to the network, the demonstration that this had been achieved was a link to the NASA computer. My guide announced to me proudly “You are now connected to the rest of the world”. Unfortunately, in certain salient aspects this proved to be untrue – in order to gain access to my own account on the Brunel computer I had to inform computer services in writing of my requirement for remote access, and wait for the necessary arrangements to be made. Access to the world, it seemed, was a conditionally granted privilege. Email contact with colleagues at Brunel whilst physically in the field became a routine procedure, checking my messages in the morning becoming part of being in the field. In this sense, both while in physically “in the field” and while back at Brunel logging on to the system remotely, the alternation between field and home, between full participant and distanced researcher was in some senses made easier by the technology: it required that I alternate as a matter of course. Of course, in all of this the question of where to locate the field, how it was that I understood myself as being in the field, brings home the point that “the field” is an epistemological rather than an ontological category: it is a state of mind<sup>12</sup>. This point is by no means new: it is one of those features of ethnography which has particularly emerged in the move of ethnography from cultures which seem very different, strange, and, not incidentally, geographically remote, to cultures which more closely resemble our own. Possibly as our knowledge and preconceptions about other cultures grow, the effort of mind required to make another seem strange becomes greater. As Turner (19??) points out, “the field” is, after Foucault, a product of disciplinary technologies, such as ethnography, and not a natural preexisting given.

I was tempted by reflection on the apparent “special” nature of the setting in which I found myself, by the very problems of finding what constituted that setting within the electronic environment, to conduct an exercise in virtual ethnography, to go deliberately into the electronic community to see what it did to my preconceptions and assumptions about the research process. The following

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<sup>12</sup>. As Knorr-Cetina (1992: 125) points out with regard to social studies of science in the laboratory “the laboratory is a virtual space in most respects and in most respects coextensive with the experiment.”



section deals with that attempt, and with my growing impression that it was not that my setting was special, rather that ethnography had never been conventional.

### **An exercise in virtual ethnography.**

The transcripts which I present here, are excerpts from an interview conducted in the field. The exercise was conducted in an environment known as a MOO (Multi-user dungeon, Object-Oriented). Such environments were initially developed as role-playing games, enabling participants to interact across a network, but in recent years they have been increasingly developed as a forum for conversation and interaction with fellow networkers for more serious purposes – the MOO on which this research was carried out contains rooms specifically set up for researchers in the Biosciences to use for conversations and for accessing information services over the network. The environment, however, retains many features of the role playing game – the geography and landscape of the setting are described to the user, and the user is free to name, describe and gender their “character” according to choice. In presenting the transcript, I was initially at a loss as to whether to disguise the identities of my informants: indeed, since they were already in many senses fictional characters, whose identity would I be concealing? I determined in the end, to err on the side of caution, and to alter even those names by which the characters in my ethnography chose to be known. This act brought into question the actions of the ethnographer: a basic tenet of ethics in ethnographic research seems to be that the ethnography should not harm those in the setting: just how could the publication of a virtual ethnography conducted in a virtual setting amongst virtual characters, bring harm to anyone real? How did this virtual ethnography relate to the real, and could it have impacts? As well as its bearing on the ethics of research, this question also has a bearing on validity: if I were to rely on the familiar criterion of “triangulation”<sup>13</sup> to confer authority on my work, how could I construe this as being more data on the “same” phenomenon, namely the doing of scientific research? It seems that the effect of conventional ethnography may be to gloss over the amount of work which goes into construing data as relating to the same phenomenon, in turning a collection of data into a phenomenon within the ethnography.

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<sup>13</sup>. Hammersley and Atkinson (1983: 198-200).

The exercise was set up as an interview with one of my informants in the computer services department. This informant was keen on many aspects of computing outside his specific area of responsibility: he found the whole thing fascinating, and was keen for me to share his joy in it. We agreed that on my one day a week back at my home university we should try an interview over the network. We fixed a time at which we would meet, and arranged the place for our rendezvous in the virtual world. As the time came for the interview, I seated myself at the terminal in my office, and logged in. It was a normal Wednesday at Brunel, our day for meetings, for gossip and for swapping stories of the field. In consequence, there was a constant stream of people past my office door, and I could hear the conversations of my colleagues through the paper thin walls. As I found my way to the interview site, I had some ideas of the questions I would like to ask this particular informant. I was nervous that my informant had chosen a relatively public site for the interview: would other people interrupt; would we be seen as butting in and disrupting more serious work? I ran through my knowledge (I had done my homework) of the basic ways to interact in this environment<sup>14</sup>: typing *"Hello"* would allow others in the same room to see the message **"ChrisH says Hello"**; typing *:waves* would produce the message **"ChrisH waves"** to all those in the room. During the interview the virtual world and Brunel began to come together, as colleagues reacted to my squeals and exclamations by coming into my office to read over my shoulder, to question what was going on and to make suggestions as to my next remark. Eventually, the Brunel world took precedence: a meeting had been planned for 4.00 pm, and I must attend, in person. Reluctantly, I said goodbye and signed off.

Having completed my afternoon's meeting, I was then free to print out and consider the transcript of the virtual interview. The transcript recorded both the key strokes which I had entered, and the information which had appeared on my screen during the interview. It was thus a kind of hybrid document, part of my own making, part of information entered into the machine by other participants

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<sup>14</sup> . It has been necessary within this document to adopt certain conventions for clarity where the discussion becomes technical. The authorial voice is represented throughout in "normal type" (what else). Items typed into the computer by the ethnographer are represented in italics, whereas those emanating from the computer represented in bold. In this practice I echo the conventions of the user manual which I helped to update.

and by programmers, and the whole passed through the filter of the machine. I was therefore unsure just what kind of data this was. It preserved the temporal nature of the interactions, faithfully keeping account of interruptions and simultaneous “utterances” in a way which recalled the most meticulous of discourse analysts’ transcripts<sup>15</sup>. This form of self-transcribing research seemed to answer the ethnographer’s dreams – yet what exactly was its status. Should I be treating it as primary data, collected in the field, or was it a secondary document? Should I be attending to the features of the document which made it a persuasive (or otherwise) text? Was I about to act just as the participants in Latour and Woolgar’s laboratory ethnography do, in treating this inscription as reflective of some underlying reality? I ask the reader to keep these questions in mind during the ensuing analysis of the transcript.

Interacting in the MOO turned out to be by no means simple, despite my homework on the basic commands. While I was typing in my contributions to the conversation, other messages appeared on the screen, interrupting my own flow of characters and making it hard to keep track of what I was saying. I made frequent typing mistakes, some of which were made fun of, and I found that I was often unable to say what I wanted to say in time for it to be relevant. And, given the number of conversations going on in the room at the same time, I had a difficulty which the others did not seem to share in working out which comment was addressed to whom. In short, I must have appeared as a novice to the adepts, and I felt at a disadvantage: the skills in keeping track of a conversation in a crowded room which I take for granted in face-to-face interaction had deserted me. Extract 1 is part of the transcript of this exercise in virtual ethnography, which demonstrates not only my own ineptitude, but also the temporal features of the interaction. Extracts 2 and 3 have been edited for clarity, removing the duplication of my responses. In effect, the result of extracts 2 and 3 is to produce a “fly on the wall” view of the conversation, in which the ethnographer appears as just another participant.

Hammersley and Atkinson deal at length with the role to be adopted by the ethnographer, and the effects which this role may have on the results of the

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<sup>15</sup>. For examples see Potter and Wetherell (1987).

research and the attitude of informants. Whilst considering other aspects such as the sections of the community with which one identifies and the resulting possible limits to mobility, they focus particularly on the gender of the ethnographer. “The researcher cannot escape the implications of gender: no position of genderless neutrality can be achieved.” (Hammersley and Atkinson, 1983:84). The same point is considered at greater length by Bell (1993: 2): “The issue of gender arises because we (ethnographers) do fieldwork by establishing relationships, and by learning to see, think and be in another culture, and we do this as persons of a particular age, sexual orientation, belief, educational background, ethnic identity and class.” Hammersley and Atkinson and Bell therefore see different sides of the same coin: for the former, the researcher’s gender may have a bearing on the kinds of data to which they have access; for the latter, the ethnographer’s personal characteristics may affect what they see. In extract 2 the ethnographer has defined herself (or indeed itself, taking the rare opportunity to be gender-neutral), as “Very interested in why you use the MOO”. While in Hammersley and Atkinson’s terms this might appear to be a one-off chance to truly attain the neutral position, it does nothing to escape the features alluded to by Bell – their gendered ethnography has little to do with taking your body physically into the field. And indeed, it transpires during the interview that the ethnographer is not permitted to retain a gender-neutral position, even when she rids herself of her physical body and enters virtual space. Or alternatively, the personal characteristics do not so much reside within the ethnographer, but are constructed in her relationship with the subjects of the ethnography.

The form of description chosen by the ethnographer is unusual, many other participants using their specific fields of research interest together with a few intriguing personal details, as their definition. In the conversation recorded in extract 2, this appears to be a transgression of the expectations of behaviour in the MOO environment. Despite the role-playing nature of the environment, participants are expected to identify themselves with physical attributes, and in extract 3 Fred particularly identifies himself as unhappy with people he doesn’t know, while the guest takes offence at the enigmatic status of the ethnographer. Just as the ethnographer requires some kind of triangulation for validity, so the participants in this virtual culture seem to hope for some confirmatory data before they will treat those whom they meet as “real”. In addition to the particular

questions which I hoped my informant might answer in this interview, I had hoped that I might find out more about the assumptions of interaction in this environment: assumptions which I had considered would be clear to the adepts with whom I was dealing. As the interview progressed and became a multi-sided conversation with interruptions from the others in the room, I became increasingly excited. Here indeed was the type of data which I had been hoping for. I was indeed, just as in a conventional ethnographic experience, able to question and be questioned, to see how far I was able to pass as a native, and to note where I transgressed. It seemed that my concealment of personal information and of gender was inappropriate as soon as I began to converse, and my informant became my ally in testing how far this held true, keeping quiet about his own knowledge of my identity and interests, as the “Guest” tried to push me to reveal myself<sup>16</sup>.

The above discussion deals with the extent to which I used my competence, limited as it was, in interacting in the MOO, to hold conversations with the natives, and to try to find out what they felt was important in this environment. Above, I deal with the part of the conversation in which Fred expresses a preference for knowing that the person with whom he is dealing is real. Following my exercise in virtual ethnography, I congratulated myself that I did not share this hang-up – I was a relativist who knew that discourses shape reality. I was soon to have a rude awakening. Some months later, I returned, physically, to my ethnographic site, and was asked by my informant whether I had yet used our virtual interview for a paper, as I had promised. When I replied that I was keen to do so, he looked shame-faced. “I guess I should tell you then what I did. I was the guest. I logged on twice”, he said. I had treated the participants in my virtual ethnography as if they were “real people”, where in fact I had no such grounds for complacency<sup>17</sup>. I had treated my transcript and my experience of its construction as a document produced by humans, without taking into account its technological production. The technological subject had produced an account of the world, and I had

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<sup>16</sup>. This could be thought of after Glaser and Strauss (1964) in terms of the “awareness contexts” under which the ethnographer, HarryW and the other participants were operating, in which HarryW and I were aware of each other’s true identities, and the others were not.

<sup>17</sup>. Please disregard endnote no.

neglected to treat this with the scepticism which it deserved – I had allowed myself to be swayed by the persuasiveness of the text.

### **Conclusion, or, was conventional ethnography ever conventional?**

I have, in the course of this paper, drawn attention to some of the features of conventional ethnography which are drawn into question by a virtual ethnography in which the ethnographer is no longer face-to-face with the participants under enquiry, but interacts with them through the means of electronic communication. I have found it useful in drawing attention to these features of conventional ethnography to have recourse to a standard text, a “straw book” against which to position myself. The text which I have chosen to draw out this features is Hammersley and Atkinson’s text on the principles and practice of ethnography (1983). I have drawn out the features of conventional ethnography which rely on the ability to define a physical setting, to determine the sources of data whether human or non-human, and to recognise phenomena for being “the same”. I have dwelt on assumptions about the role adopted by the ethnographer, and questioned the extent to which this is open to management. The status of data has been taken into consideration, as it is suggested that where the ethnography takes technology into account, the distinction between primary and secondary data is blurred. Finally, I have dealt with the necessity for the ethnographer in technical settings to become adept in the use of that technology, an “acceptable incompetent”<sup>18</sup> in terms of the aims of the research project, rather than in the eyes of those in the ethnographic setting.

This exercise in virtual ethnography is an exercise in taking the technology seriously<sup>19</sup>, in a sense which might be in keeping with Latour’s exhortation for symmetrical treatment of humans and non-humans. In conventional ethnography, as Hammersley and Atkinson (1983: 105) put it “it is a distinctive feature of social research that the ‘objects’ it studies are in fact ‘subjects’, and themselves produce accounts of their world”. Virtual ethnography entails taking seriously the accounts of the world produced by technological subjects. But in this, it is important not to

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<sup>18</sup>. Hammersley and Atkinson (1983: 89).

<sup>19</sup>. This sense of addressing the content of technology seriously should be compared with that of Button (1993).

lose sight of the very strangeness of this technological world. It is again the moving back and forth between conventional and virtual ethnography which produces strangeness and hence the ability to question the taken for granted nature of the technology: the alternation which is required is between a world on which humans and machines are unproblematically distinct and recognisable, and one in which the two categories blur in a plethora of indeterminate texts. I have chosen to disrupt the conventional sense of doing ethnography as being in “the field”, meaning physically coexistence with the community which I study. For the ethnographer, finding the field becomes as much part of the research project as any data collection which is done once the field is found – in fact finding the field at all may turn out to be a red herring<sup>20</sup>.

As it becomes harder to discern what is a human effect and what is a machine text, and the limits of truth and deception are stretched, the ethnographer too must play a part in these social developments, and the social study itself is transformed. Possibly this transformation occurs in a direction already heralded by analysts of postmodern culture – our assumptions of our ability to tell a kind of truth about the world are brought into question<sup>21</sup>. This highlighting of a facet of social research by a feature of technological development is not determinism, in that we do not HAVE to change our analytic practices, but I would suggest that a more interesting form of social research is produced by embracing and reflecting on these apparent impacts of technology where they occur, as an intrinsic part of the research process. Technophobia has no place in postmodern ethnography.

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<sup>20</sup>. This elaborates on the general point made by Cooper *et al.* (1993), that reflection on what counts as being in the field gives important analytic purchase. Low and Woolgar (1993) provide an example of a search for the technical which proves to be fruitless but analytically fruitful.

<sup>21</sup>. This of course is not a new point – few are! Recent writers on ethnography have questioned its truth-telling claims, such as Linstead (1993), calling for a new form of deconstructive ethnography, Atkinson (1990), on the construction of realities through ethnographic writing, Leigh Star (1993) on the demands of ethnographic data collection in electronic communities, Clough (1992) on the potential for social criticism in post-realist ethnography. Woolgar (1991) and Cooper (1993) bring to attention the lack of separation between ethnographer/analyst and the object of study. We have already been made aware of the foolishness of taking as given the analytic categories which we construct, such as “the field” (Turner, 19??), and “the native” (Sharrock and Anderson, 1982). So, at least some writing on ethnography in recent years has taken on board the tenets of postmodernism, and the conventional ethnography which I have used as my foil no longer, perhaps never existed, except within the pages of this paper.

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## **Appendix: Extracts from an exercise in virtual ethnography**

**Extract 1**

**HarryW** says, "MEDLINE is a nice resource for my users – lots of bibliographic material etc."

**Jay** has connected.

*"Who will be in charge of***Guest** says, "Sounds Medical -yuk"

*administering the MEDLINE link if you get it?* **HarryW** says, "Bio-Medical"

**You** say, "Who will be in charge of administering the MEDLINE link if you get it?"

**Guest** says, "ickky"

**HarryW** says, "If it is an account at NLM, then we just pay the bills when we get them"

*"But who helps the users?"*

**You** say, "But who helps the users?"

**HarryW** says, "If we get CD-ROMS then I guess I will delegate it"

**HarryW** smiles

*:chuckles*

**ChrisH** chuckles

**Guest** says, "Fascist"

**HarryWksays**, "will you teach me to chuckle too?"

*"Oops*

**You** say, "Oops"

*"How do you decide who***HarryW** smiles

*to delega***Guest** smiles

*te things to?*

**You** say, "How do you decide who to delegate things to?"

**Guest** urckles

*"I wish I could urckle"*

**You say, "I wish I could urckle"**

**Guest says, "delegate life and you die"**

**Guest says, "smiles"**

**Guest smiles**

**George compiles yacc using cc \*.c. No errors. Boy, programs should all be this easy to make.**

**HarryW says, "Not sure ... could just pick the first poor sucker I see"**

**HarryW says, "Probably pick Paul cos he's competent"**

**HarryW says, "Paul is my gopher"**

*"Are there jobs everyone wants and ones noone wants"*

**Guest says, "Double Fascists in a gopher stew"**

?

**You say, "Are there jobs everyone wants and ones noone wants?"**

**HarryW says, "to Guest "What"**

*"Maybe guest does EVERYTHING"* **HarryW says, "No – everyone mucks in together"**

*itself?*

**You say, "Maybe guest does EVERYTHING itself?"**

**Guest says, "Oh GROSS – bio mucj!"**

**Guest says, "I'm a HE not an IT"**

*"Sorry, didn't want Joe looks up rescind in the dictionary.*

*to make unwar***Guest says, "No not everything – my girlfriend cooks"**

*ranted gender assumption***Guest says, "and makes the bed"**

*s, and rep***Guest says, "and cleans"**

*lied too quickly to check your g***Guest says, "OK – I'm the fascists"**

*ender*

**You say, "Sorry, didn't want to make unwarranted gender assumptions, and replied too quickly to check your gender"**

**Guest smiles**

**Joe walks east into the sunroom.**

**George cooks, and makes the bed, and cleans.**

**HarryW looks sheepish**

**Guest looks bovine**

*"We seem to have reached an impasse"*

**You say, "We seem to have reached an impasse"**

*:smiles placatingly***Guest says, "impossible!"**

**ChrisH smiles placatingly**

**Extract 2**

You say, "So Guest, have you decided if I'm a he or a she?"

Guest says, "You must be a he – you didn't get feminist when I told you about my home life"

Guest says, "On the other hand ..."

Guest grins

Guest says, "Not sure – I think you're doing a survey of net life?"

Fred says, "There aren't any females on the net, don't be silly."

HarryW says, "Maybe, maybe not"

HarryW smiles secretly to himself

You say, "No, not exactly a survey of the net – I'm looking at the interaction of IT with the research process"

Guest says, "Ohhhhh"

Guest looks impressed

Guest says, "Can I get my name on the paper?"

Fred is male. Fred uses the net. Therefore all netters are male

Fred ← the research process at work.

You say, "But you didn't tell me it – is it OK if I acknowledge "Guest?"

Guest says, "I'll help you write it by typing in some more text"

Guest says, "like this"

Guest says, "and this"

Guest grins

You say, "Thanks"

### **Extract 3**

You say, "So is this work or play?"

Fred says, "Is what work or play?"

Guest says, "all work and no play ..."

HarryW says, "true – but this is an exchange of ideas also"

You say, "Do you come here for work or play?"

HarryW says, "video – conferencing would be better"

Guest dribbles

Guest says, "play time"

Fred uuhh.

You say, "Then you'd know if I were a girl or a boy (I hope)"

Fred o O (Why do I always get the hard questions?)

Guest bangs two bricks together

You say, "Sorry Fred!"

Fred comes here (JHM) to pick people's brains when he runs into a problem.

Guest says, "Why the coyness over your sex – you must be female and hiding it"

Fred uses the net in general as a mixture of work and play.

Guest says, "because this might interfere with how people react to you ???"

You say, "I'm interested to know why you think it matters"

Fred says, "Is life work or play?"

Guest says, "PLAY – definitely PLAY"

You say, "So this is life?"

Guest urckles

Fred says, "Sure it's life."

Fred says, "I'm a real person, you're a real person, George's a real person."

You say, "How do you know?"

Guest says, "If you were female I could ovelf you, but if your male I would asrnt you"

Guest says, "Real people can play too"

You say, "But how do we know your descriptions of yourself are accurate?"

Fred says, "I think, you think, George thinks. Hence, we're real."

George says, "ovelf?"

Fred says, "Oh, you don't."

You say, "Descartes?"

Guest says, "Sorry mistyped – should have been ovelfff"

George says, "Well, you can verify that I'm a few bytes in the database fairly easy."

George er, easily.

Fred can't guarantee that any given person is who they claim to be.

HarryW says, "Are you real – are you who you claim to be"

HarryW says, "WHO do you claim to be?"

You say, "I didn't claim to be anyone"

Fred says, "But I can tell to a high enough degree as to feel that I know George, and consider him to be a friend."

Fred says, "You didn't claim to be anyone, but you've given us distinguishing characteristics about yourself."

George says, "Enough people have met me that someone would find out if I were, say, a 90-year-old hunchback hermaphrodite with a lisp"

You say, "You mean you're not?"

Fred says, "He doesn't have a lisp."

Guest smiles

George schemes.

HarryW smiles.

You say, "What I can't work out is why all these things matter her"

You say, "I mean HERE"

Guest says, "Nothing matters her"

Fred says, "Because there are real people involved here."

George says, "It's nice to imagine a picture and a voice behind the name."

Guest says, "We've got to have social referents (you can put that in your paper)"

You say, "OK, so I'm female, 28, 5'2", long blonde hair, blue eyes."

Fred says, "Granted, we may be computer geeks who may be more comfortable looking at a computer screen than a human face, but we want to know something about the people we interact with none-the-less."

Guest frowns

Guest says, "I don't know what to believe now – but it doesn't matter on the net"

Guest smiles

Fred deduces that ChrisH is male, 45, 5'8, pimply, dark hair, overweight, and nondescript eyes.

You say, "Would it have made a difference if I'd put all that in my description"

Fred says, "Sure."



You say, "Why"

Guest says, "It would have meant a quicker introduction"

Fred says, "We wouldn't have believed you from the start, instead of taking this long to disbelieve you. :)"

You say, "Eh?"