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Main Article:

Digital Video as Research Practice: Methodology for the Millennium

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Abstract

This essay has its origin in a project on the globalization of science that rediscovered the wisdom of past research practices through the technology of the future. The main argument of this essay is that a convergence of digital video technologies with practices of social surveillance portends a methodological shift towards a new variety of qualitative methodology. Digital video is changing the way that students of the social world practice their craft, offering not just new ways of presenting but new ways of practicing field research. We introduce concepts of the fluid wall and videoactive context to emphasize that (1) the camera is an actor in the research process, and (2) both behaviour and observation occur in both directions--in front of and behind the camera. While these practices and procedures are novel in some ways, they may also be viewed as old methods in the context of new instruments for recording as well as a new social understanding of these instruments. Since new technologies interact with the social context, the digital video methods we discuss in this essay are likely to become increasingly important for generations to come. We provide an overview of the use of digital video in research practice and present an account of the use of digital video methodology in Chile.

Keywords: digital video; ethnography; qualitative methods; film

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Our objective in this essay is to provide a primer on digital video, focusing on the technology as a methodology rather than simply a new medium for recording social behaviour. A primer, in traditional terms, is an introduction to a subject that is well known. We use it to emphasize the sense in which both the technologies and social practices of relevance here are fast becoming part of the *life world* of the cohorts coming of age in the twenty-first century. Digital video refers to an ensemble of technologies for visual and audio documentation, editing, and presentation. It is both a noun in that it represents independent things that can be put into action and a process in that it is used within an organization of actors (researchers, technicians, and subjects) to accomplish pre-planned data collection, following agreed upon strategies which take into account the research matter, subject, location, and environmental constraints (weather conditions, natural or artificial lighting, background noise, and institutional restrictions).

There is an argued continuum of visual research that runs along multiple dimensions, for example conspicuousness of technique (secret surveillance to open interaction between researcher and subject) and representational tone (unedited raw data, education, entertainment). As a result, we argue that digital video is not just a new way of presenting but a new way of practicing field research. In one sense, digital video is simply a variety of traditional ethnography, but it responds to new social conditions.

Also, the routinization of surveillance has made the idea of recording behaviour an important aspect of the social landscape, which leads some subjects to take an active interest and participate in the recording process. To illustrate this, we introduce in this paper the notions of the *fluid wall* and the *videoactive context* to emphasize that (a) the camera is an actor, and (b) both behaviour and observation occur in both directions--in front of and behind the camera. In the following, we provide an overview of digital video methodology and its roots in ethnography, current practice, and why and how our international project came to employ it as a research tool. This overview is followed by a first person account from Chile of a recent field application, to illustrate how digital video shapes research interactions. This overview and application of digital video is expected to benefit a new generation of social researchers in understanding the constraints and opportunities associated with this kind of research practice.

1. Digital Video as Qualitative Research Practice

For most students of the social world, the inventory of methods is broadly divided into the quantitative and qualitative. While most of us are willing to allow that both are legitimate ways of approaching the complexity of our subject matter, we tend to classify people (sometimes even departments and curricula) in these terms. There are those who

conduct surveys, analyze secondary data, organize experiments, and develop mathematical models. Others analyze documents for historical and comparative purposes, interview subjects that share common features, or enter particular social settings to observe behaviour and ways of life. The former are the so-called quantitative types, while the latter are qualitative types--terms used with some frequency in the academic context and well understood when hiring and promotion are at stake.

Ethnography is a qualitative method that seeks a thorough description of a particular stratum of the social world by "telling the story of how people, through collaborative and indirectly interdependent behaviour, create the ongoing character of particular social places and practices" (Katz, 1997, p. 414). The history of ethnographic research is commonly divided into five "moments" (Denzin & Lincoln, 1994; Atkinson & Delamont, 1999). The first, 1900 to 1950, is associated with the positivistic epistemologies of the Chicago school. The "modernist moment" from 1950 to 1970 is associated with the second Chicago school, led by Hughes, Geer, Becker, Strauss, and Gusfield. The third moment begins in the 1970s, an era of "blurred genres," where a reaction against positivism emphasized interpretive methodologies. In the mid 1980s, the fourth moment espoused a new awareness of ethnographic writing where field notes were viewed as open works to be reinterpreted and reflexivity was taken seriously. The fifth moment, or post-modern challenge, brings us to the present, where various competing theories and methods vie for position.

The classical Chicago school drew upon anthropological ethnography to develop participant observation as the underlying method of field work (Ambert, Adler, & Detzner, 1995). In this technique, the researcher manages entry into the world to be studied, establishes rapport with key informants and successfully acquires access to places, people and interactions over the time period required. The ongoing debate over participant observation revolves around the degree of access the researcher should obtain. Positivists believe that knowledge of a culture can be drawn through simple observation without much interaction, while the new ethnography (Becker, 2001) requires the researcher to possess an extensive knowledge and expertise of the culture. Field notes are the participant observer's main tool. They are *emic* observations of a specific culture and informant's actions. Concluding the data collection phase, the researcher initiates an *etic* process of analysis and explanation in an attempt to portray deeper significance (Jackson, 2004). The editing of post-field notes intersects the recent debate over the legitimacy of interpretive ethnographic writing. Film ethnography is not immune from these legitimacy concerns. Gibbs et al. contend, "Both the cheapness and ubiquity of [video] technology mean that there are new opportunities for researchers not only to record settings but also to use the technology to create new data. Naturally, the use of such technology raises issues of interpretation, impact and validity that researchers need to deal with" (Gibbs, Friese, & Mangabeira, 2002, para. 3).

1.1. Video as Ethnographic Tool

Analogue technologies like audio recording, film, and traditional video have a long history of use in many areas of social and psychological research, especially in anthropology (Gibbs et al., 2002). For example Kanstrup suggest that "methodologically, it can be difficult to understand work practices since parts of work practices may even be invisible at first hand... [The] need for closer investigation has made researchers within work place studies turn to ethnographic methods and to the use of visual technologies in data collection and analysis. In this connection, the use of video as a technology for data collection and analysis is often applied" (2002, para. 3). While video should be broadly classified as a type of qualitative method, it is so in the loose sense in which historical and comparative methods are qualitative. Comparative and text-based methods often generate tables and statistics. Likewise, video recording devices can be used to generate data for input into standard statistical packages. Sampson and Raudenbush (1999) videotaped over 23,000 street segments to develop scales of social disorder in Chicago neighbourhoods, then combined these scales with census data, police records, and a survey of 3,500 residents to produce multi-level logistic regression models. Shrum and Kilburn (1996) videotaped over 30 hours of behaviour on Bourbon Street in the French Quarter of New Orleans, Louisiana, during the pre-lent festival of *Mardi Gras* in order to analyze some 1,200 episodes of nudity and ritual exchange. In each case, video recording provided the raw input for later rating or coding by observers, which has crucial advantages over note-making in the field. First, audiovisual inscriptions of events may be reviewed by multiple observers that were not present when the events transpired. Second, the inscriptions may be stored. Through these means, event records may be re-analyzed, examined for inter-coder reliability and retrieved by future generations of researchers.

These two examples of research recordings in the analogue era do not represent the digital video research of interest here. However systematic the recording, however reliable their coding, these tapes remain archived and unused. The recordings have great potential. They contain the visual cues prized by the original Chicago School of urban sociology (Sampson & Raudenbush, 1999). But they have not provided the sights, sounds, and feel of the streets for anyone but the original investigators. This is generally because, as Ball (1992) suggests, fields like sociology are primarily verbal and text-based disciplines, rather than visually communicated. As a result, the feel that conveys visceral experience, was not a strength of the analogue era.

1.2. The Digital Era: Hardware and Software

We employ the term *digital era* to refer to a mutually constitutive set of technological and socio-cultural developments that occurred in the 1990s. Three technological characteristics were crucial. First, the hardware required for the production of high quality audio-visual recordings became smaller, lighter, less expensive, and easier to operate (Gibbs et al., 2002). While tourists, parents, and hobbyists were the target markets for manufacturers, professional observers of social life were beneficiaries of these hardware. We believe that academic uses should be distinguished from

documentary uses, but leave the distinction for subsequent discussion. So the starting point for research practice in the new millennium is that the technical artefacts of recording have become radically accessible for the non-professional user. But the two technological developments of greatest interest for our purposes are digital media and nonlinear editing systems.

Unlike analogue tape, which degrades slightly with each copy, digital recordings may be copied with no loss of audio and video quality. This is the second characteristic of the technology: media can be captured from a camera onto the hard drive of a computer, then edited and copied indefinitely without any degradation of the original images or audio tracks. In contrast to film, where the print viewed by an audience in a typical theatre is a fourth generation copy at best, digital video media are simply computer files (albeit large ones) that can be viewed, copied, published on the web or attached to an email for delivery anywhere in the world, any number of times. This characteristic of recording in the digital era means that researchers need not fear the destruction of their original work. But it also raises a host of ethical issues regarding distribution and transformation.

Nonlinear editing systems, with the associated software, are the third crucial advance for digital ethnographic research. The crucial characteristic of nonlinear editing systems is that they are non-destructive: they operate in terms of pointers or references to media but have no impact on the original (captured) media files themselves. Editing software makes it possible to manipulate audio and visual data as if it were text, that is, to edit, cut, paste and modify media for analysis, comparison and presentation. Editing technology may be viewed in terms of two analogies. First, it is a method for word-processing images. Video editing is comparable to text editing in that the process and goals are similar. A text editor organizes sentences and paragraphs in a coherent manner adhering to the specifications of the relevant audience or audiences (field and publication). There can be multiple versions for different audiences. A digital video editor works in three dimensions (sound, images, and text), organizing these tracks to create a coherent moving portrait of the research subject. The video ethnographer can also edit multiple versions for various audiences. Indeed, the skills that academics and researchers usually develop for the manipulation of text are hugely useful for the manipulation of images.

Second, digital video is a method for raw-data-processing of images. The development of statistical packages such as SPSS and SAS encouraged the widespread use of statistics for the processing of data, their inclusion in undergraduate and graduate curricula and the proliferation of quantitative methods in professional presentations and journals. The development of nonlinear editing packages such as *Avid*, *Final Cut Pro* (for Macintosh), and *Adobe Premier* (for Windows) will encourage the widespread use of digital video in research practice (Secrist, Koeyer, Bell, & Fogel, 2002). These two analogies--word and data processing--are imperfect, but express the key distinction between digital video for presentation and digital video as research practice in a more generalized methodological sense.

2. Presentation: A Short History of Ethnographic Film

When digital media are edited and distributed, they are an alternative means of presenting scholarly results for an audience. Just as a computer-aided presentation or a traditional lecture, a movie is a point of entry for discussing a research project, comparing notes with colleagues working on similar topics and addressing queries about strategies and lines of argument. *Visual ethnography* developed alongside an emerging tradition in documentary photography and film-making that began in the late nineteenth century. Between 1896 and 1916, the growing presence of visual sociology in the *American Journal of Sociology* is shown by thirty-one published articles that included photographs and illustrations (Harper, 1989; Becker, 1998). Between 1920 and 1960, it fell from favour, losing ground to surveys and other quantitative methods.

While visual sociology concentrated on photography, visual anthropologists experimented with ethnographic film. Robert Flaherty's 1922 *Nanook of the North* is the first ethnographic film on record (Jackson, 2004). A contemporary, Russian film-maker, Dziga Vertov, developed a similar style of realistic film, or filmic truth, termed *cinema-verite*. Flaherty and Vertov laid a foundation for ethnographic film, with a goal to portray reality on film as truthfully as possible. Another pioneer of ethnographic film was anthropologist Margaret Mead, who was strongly influenced by Franz Boas' visual ethnographic thinking (Prins, 2002). Her collaboration with Gregory Bateson in the 1930s and 1940s used visual images as the basis for ethnography. She suggested that anthropology was a discipline of more than mere words, arguing that ethnographers were mistaken when they only used pencil and paper in the field. In an attempt to gain popularity for the method, Mead helped organize the Smithsonian Institution, an interdisciplinary gathering of scholars and practitioners interested in the visual media.

Despite Mead's efforts, visual ethnography slumped at mid-century, owing to the Second World War and rise of quantitative thinking. It found new life in the late 1950s at Harvard University and in France, led by the ethnographic films of Jean Rouch (Jackson, 2004). Rouch collaborated with sociologist Edgar Morin to explore the state of mind of Parisians. The use of omniscient, invisible cameras and the practice of showing the films to the informants for reactions caused many to consider Rouch's work the true cinema-verite. Also fuelling this revival was the increased sophistication and convenience of sound and film equipment (Loizos, 1993).

In the 1980s, film-makers argued against "early ethnographic film theory and practice, suggesting ethnographic film should represent 'whole' cultures and... avoid close-ups and attempt to film 'whole' contexts, activities and actions, as well as be minimally edited and use only original synchronous sound" (Pink, 2001, p. 68). Mirroring the academic debate over ethnographic writing, film-makers supported a reflexive style of conception and analysis that allowed for more artistic control. For example, Ball (1992) critiqued content analysis as the appropriate framework to analyze visual data claiming that:

> The ordinary sense made of appearances is an issue content analysis cannot address, because it fragments naturally occurring meanings, subsuming them under the analyst's categories. In contrast, for investigators working within symbolist and structuralist perspectives, the meanings of these appearances are the keys to a fuller understanding of the culture in which they are embedded (Ball, 1992, p. 31).

Henley (1998) adds that, even if it were possible to produce film sequences that might be considered an objective physical record of a cultural event, there would still remain the question of the meaning of that event. This meaning can only be determined by means of an active engagement on the part of the film-maker with the protagonists of the film and this is bound to involve some measure of subjectivity.

For ethnographic film-makers of this persuasion, the camera acts as a catalyst, provoking events, situations and relationships that are revealing precisely because of their typicality. Some have even claimed that the camera can act as the medium of a trance like state whereby the film-maker becomes fully engaged in the lives of the film's protagonists and thereby achieves an understanding that is inaccessible to those who insist on remaining neutral and distant. "The implicit theory of knowledge underlying this approach is that true social reality is not to be found in the superficial observable details of everyday life but rather in the underlying relationships, sentiments, and attitudes which sustain them" (Henley, 1998, p. 43).

Critiques like these have been incorporated alongside traditional perspectives and practices. Taken as a whole, they comprise the general conceptual tool box for contemporary film ethnographers, creating an environment that has at times included the simultaneous use of various theories and methods. How this has shaped ethnographic film practice in general, and the authors' own digital video research choices, is the subject of the next section.

3. Research Practice: How We Became Videographers

"Even with all of the detail they describe, many narrative writers often feel that the words are not enough to communicate the complexities of what they witness in the interactions" (Secrist et al., 2002, para. 20). But ethnographic film requires a researcher-director to make decisions on multiple dimensions (Henley, 1998) such as, where and how long to film, placement of camera(s) (conspicuous or hidden), and choice of frame angle (wide, two-shot, or close-up). These decisions, pertaining to the selection of material at the editing stage, are inevitably subject to cultural bias or to idiosyncratic personal factors due to gender, age, and relationship with the subject. Reaction to these contingencies has led some film-makers to formulate practices to minimize the corruption of film or video as a reliably objective record. Typically this involves the elaboration of rules to maximize the effacement of the physical presence of the film-maker during production so that life will go on as if the camera were not there. This applies to the pre-editing stage as well, viewing of the "rushes" or daily footage, in an attempt to minimize the authorial

signature, for example the use of dramatic camerawork (MTV style, sweeping angles, extreme close-ups). We generally choose not to minimize the presence of our cameras, but do observe and respect the influence this choice would have. The rest of this section elaborates the subject matter that inspired our research team to consider digital video and some particular research issues we faced and the practices we adopted and innovated.

Our own view of the promise and relevance of digital video as research practice was formed in the context of a project on globalization and science that focuses on the changing technologies of knowledge production. Since 1994 we have examined the social networks of academic and governmental scientists in Ghana, Kenya, and the state of Kerala in south-western India (World Science Project, 2004). In the late 1990s, as new information and communication technologies became more prominent in the developing world, the Internet became the focus of our own project and local collaborators were recruited in each country. We received a grant from the US National Science Foundation to examine shifts in the local and international networks of scientists, and expanded its scope to include South Africa, the Philippines, and Chile. In addition to the collection of sociological data, funds were made available for Internet infrastructure. We built local area networks in several university faculties and state research institutes. Yet this work was anything but straightforward. We began to understand the ways that our own project reflected more general issues in international collaboration. To document these problems, we began to carry a Sony TRV25 mini-DV camcorder to film our project sites in December 2002.

During the months that followed, it became increasingly obvious that the camera we carried to Kerala, Kenya, and Ghana was more than a recording device. It was an *actor* in the drama of the project, just as surely as the principal investigator, country coordinators, doctoral students, and enumerators. For those of us with a background in science and technology studies, it was taken for granted that non-humans can be viewed as actors. Indeed, that is a central tenet of the *actor network theory* developed by the French School of Michel Callon (1987) and Bruno Latour (1987). A digital video camera is also an actor in the sense that human or non-human entities are viewed as represented by and representing other entities (human and non-human). The camera can take on the identity of the researcher or that of the subject, and in the next instant be a third party observer, a meta-subject occupying the focus of the video-active context or meta-researcher hovering inconspicuously over the research scene. Another quality of this digital actor is that it introduces a permanent afterlife for research experiences, imprinting them in a format that extends far beyond ordinary forms of scientific publications. Digital reproduction and storage is superior in reproduction quality and longevity to physical analogue or text materials, while a mass media global culture provides a much larger and growing market for visual research compared with text based research. These two qualities, shaping research interactions and extending the afterlife of research experiences, distinguish digital video from other means of documentation.

For researchers raised on the works of Erving Goffman and the *symbolic integrationist school*, it is assumed that social interaction itself is a dramaturgical affair, with roles and

stages, costumes and cueing. For still others, with a background in Hollywood or theatre, the idea of a fourth or *invisible wall* separating actors and camera crew (or actors and audience) was part of their initial perspective.

As our research progressed we discovered the absence of this fourth wall. As we placed camcorders on tripods, microphones on lapels, zoomed for a shot of an RJ-45 plug, glowing as it connected to the Internet, we quickly realized that digital video technology was as natural as taking a photograph--but far more interesting to the participants. Our subjects began to ask questions, to talk to us about our recording procedures and technologies. In short, they began to help.

At this point we accepted the camera as an actor and shattered our invisible wall, adopting digital video as a methodological practice in order to begin thinking about the ways the technology mediated our interactions with colleagues, subjects, and collaborators. Methodology is the systematic application of instrumentation to reality in order to generate inscriptions. Of course, scientific specialties vary in their subject matter, their instruments, and the types of inscription these instruments generate. Since most of the international collaborators in our project come from a sociological background, the instruments most familiar to us were questionnaires for surveys, field notes for participant observation, and tape recorders for interviewing. Digital videotaping could be compared in one respect with tape recording an interview and in another, to snapping a photograph. In a literal sense, digital video is exactly those imaging technologies, executed at a rate of 30 images and 100 audio samples per second in DV/NTSC format. But a single session of videotaping is enough to convince most researchers that it is different from audio taping or photography. A camcorder is a more intrusive technology, a more threatening character, a more engaging actor on the stage.

3.1. The Fluid Wall

The concept of an *invisible wall* is often used by documentary film-makers to emphasize that what goes on in the interactions that are being documented should be strictly separated from both the artefacts and the work of the camera crew doing the recording (Hampe, 1997). The social situation is consciously divided into two parts. The invisible wall is important for documentarians, given the historical and commercial development of their relationship with producers, distributors, and audiences, and the need to maintain the illusion of non-presence. Our experience with digital video as part of a research practice is just the opposite. A *videoactive context*, understood as analogous to an interactive context, is a social situation with potential and known recording capacity, created by the presence of a loaded camera. Not only is the illusion of non-presence unimportant for most purposes, the maintenance of an invisible wall results in a loss of opportunities. No invisible wall separates actors from production crew in the videoactive context. Rather, a *fluid wall* separates participants who discuss filming, frame shots--and may even exchange roles. In the digital era, it is not a complicated job to press a button toggling a camcorder from Standby to Record.

The idea of a fluid wall reflects, first, the traditional duality of participant observation in the context of digital video technology, and, second, a normative principle of interaction. First, any investigator enters a research setting--organization, subculture, or pre-modern society--as a guest from an alternative professional context (usually academic). Anyone who resides or re-enters a research context on a regular basis acquires a special status. This status of observer arises because of *differences* between investigator and subjects. The status of participant arises because of *sameness*. When the difference is symbolized by technological apparatus such as camcorders, cables, mixers, and microphones, the visual expressions of observer status can overwhelm--at least at the outset--any semblance of normal participant behaviour. When technologies become complex, the difference is also symbolized by interactions involving manipulations and technical terminology. As documentarians and Hollywood production crews have long known, they represent a fascinating subculture, with advanced technological apparatus that is continually the subject of questions and intense examination. Likewise, the academic videographer is immediately conscious that observation occurs in both directions. With your digital video gear, you may come to feel that you are the one with the camera and, therefore, the subject of study! We emphasize that the fluid wall pertains to digital video as research practice and not as a presentational medium: it is distracting and usually non-informative to see a movie of people continually mugging for the camera and referring to the fact that they are being filmed.

So the fluid wall is partly a simple expression of the fact that behaviour and observation occur in both directions--in front of and behind the camera. But it is also a normative principle that recognizes the mutual benefits of open communication and adaptable interactions. Both these shape investigative strategies, sharpen the observational edge, and suggest new directions for research practice. This means that as an investigator, you must be willing and eager to educate--to show your subjects how the technology works, what you are doing, to explain the potentials and dangers. Furthermore, you must be willing to turn the camera on yourself--to let them film you, to signal your role as participant as well as observer. Finally, though it occurs less frequently, you must be willing to let the subjects fix the camera on you, allowing the subjects to play the role of film-maker.

While the fourth part of this essay will illustrate the use of digital video for traditional interviewing, we have experienced a variety of alternatives. An example illustrates the fluid wall of interactivity when digital video is viewed as a research practice rather than simply a means of presentation. Our project was engaged in building a computer network for an African organization when the director came under siege by a coalition of his staff, mostly of different ethnicities. Because our collaborators were on both sides of this conflict, work slowed and months elapsed between our purchase of equipment and the installation. After hearing some hints over email, a representative from abroad arrived on site to determine the status of the installation and the reasons for its delay. Several participants convened around an outdoor table at a local restaurant to discuss the progress. A camcorder was along, as usual. The participants agreed that the discussion would take place and the camera was placed on a short tripod in the middle of the table. It

was the first time such a strategy had been employed during the course of the project and discussion was required to determine how the camera could be positioned and moved. At any given time it was no more than one meter from any of the actors, who ordered, discussed, ate, and received calls on their mobile phones. After trying various camerapersons, consensuses developed that anyone who wished to talk should simply reach for the tripod grip and turn the camera on themselves. Since the LCD screen, or preview screen, of a mini-DV camcorder may be turned towards its subjects as easily as hidden from them (that is, the ordinary position of the imaging window, or viewfinder), this technique allowed everyone to be their own videographer. It also significantly reduced the tension of the encounter. This theme and style led to our project's first digital video production, *Before the Horse*, a video essay outlining the challenges of conducting connectivity and Internet research projects in developing regions.

3.2. The Routinization of Surveillance

How is it possible that people, engaged in serious organizational conflict, would consent not only to be videotaped but actually to videotape themselves? Is it just the case that "people are now used to being recorded whether as part of a 'holiday video' or as part of the now widespread CCTV (Closed Circuit Television) security systems" (Gibbs et al., 2002, para. 3)? In our case, trust, of course, has much to do with it: the trust that comes from working closely with colleagues who wish you well. The complete answer, however, has more to do with the second dimension indicated at the beginning of this essay. Together with the three technological developments reviewed earlier, increasing routinization of social surveillance yields a surprising--sometimes even disturbing--involvement of actors in new forms of research practice. Recorded surveillance itself is a technology-driven expression of surveillance practices employed by informants, spies and other agents since the dawn of history. Routinization refers to the normalization of a social practice or phenomenon--that is, the invisibility, *mundaneity* or *taken-for-grantedness* that comes when increasing familiarity is associated with the relative absence of conflict. These two dimensions are necessary and sufficient for routinization to occur, which is why it is wrong to view surveillance as completely routinized. Privacy debates, legal battles, and social organization for opposition to surveillance are currently underway. Many of these issues are contested, even as the technologies become both pervasive and familiar. Surveillance cameras in public places, webcams attached to computers, and storeowners who put cameras on cash registers have initiated a change in orientation to recording technology that once caused customers and friends to smile or flinch at a small device with a lens. In those countries where sales, customer service, and technical support are available by phone, the ubiquity of recorded interactions is taken-for-granted, though laws requiring that the subject be informed of this possibility remain in effect. Reality television, itself an evolution from radio and television talk shows, is as much an expression of this routinization as a cause of the phenomenon.

The routinization of surveillance means that as recording becomes more pervasive, participants take decreasing notice of the technology.

Of course, *camera consciousness* is widely discussed by documentarians and ethnographic film-makers, generally in the context of changing undesirable behaviours. Since the fluid wall makes explicit use of changing relationships between investigator and subjects in the videoactive context, post-modern debate focusing on abstract issues such as *ethno-mimesis* or *performative praxis* is largely misguided and irrelevant. Rather, debate should focus on the conditions under which various means should be employed to create alternative behavioural scenarios. The issue of camera consciousness, properly construed, may be the most crucial and significant debate when digital video is viewed as research practice. The phenomenon of decreasing awareness over time is well known, but the types of behaviour that are encouraged or discouraged in the videoactive context remain an important object for study.

For the first year of videotaping, it seemed to us that 'Heroes beat Villains' described the behaviour of most subjects (alternatively, 'No one is a Bad Guy on camera unless they're paid'). However, other subjects seem to respond differently, a difference that may well be due to the growing influence of talk shows and reality television programming that feature social conflict. Subjects know at some level that neutral affect is unlikely to be selected for presentation. As we would describe it, 'flat actors are for hard drives,' i.e., tedious performances do not make it to the final cut.

3.3. Shooting Style and Gear

Filming in India, Africa, and Latin America, we have frequently engaged in two technical debates, leading to a fourfold typology of strategies for interacting with subjects when a camera is present. The first line of argument pertains to the use of the tripod method versus the handheld method of manipulating the camera during shooting. Clearly, placing the camera on a tripod offers stable shots, easy handling and fluid pans and zooms. It seems to symbolize (for the subjects, at least) a higher standard of production values. The tripod is an *editor's method*, when the goal is the acquisition of clips of people that can be seamlessly woven into the finished presentation without excessive movement or distraction. The alternative is the handheld camera for *guerrilla-style filming*. The camera can be quickly shifted, through movements of the legs and arms functioning as an extension of the body of the cameraperson. The guerrilla method favours the camera operator rather than the editor and tends to yield naturalistic footage with movement and feel.

Our second argument is typically about gear and what to do with it. Should it be hidden or revealed? The basic technology of digital video ethnography is now small enough to fit in a space no larger than those allowed by the airlines as a carry-on. The camera itself can fit comfortably in the large side pocket of cargo pants. So a minimalist technique, adequate for many purposes, is to do everything possible to render the technology invisible: keep gear stowed in bags and pockets, showing only the camera and even then, only when recording. We never advocate filming without the participant's knowledge, the red light of the camera is already an indicator of such recording. The second technique is to maximize the potential for use of the available technology by making the work of

movie-making visible. This is generally our preferred approach, given its consistency with the notion of the fluid wall and the role of the camera in the videoactive context. When digital video is viewed as part of research practice, the apparatus is part of the research context and, therefore, a matter for mutual consideration by the participants. If we are filming indoors, for a lengthy period, the objects in our carry bag will generally be visible on a table in the room.

The question remains: What do you do, when you are in the field? It is easy, but simplistic, to say that you videotape interaction and conduct interviews. The most important element of digital video in research practice is the way in which it shifts interactions with participants, as they become *self-aware actors* in the drama of their own lives. In the following section, we provide a sense of that interaction from our fieldwork in June 2004, highlighting some of the issues faced when employing this type of technology for relatively *conventional* purposes in an interview setting. These include trust concerns, the digital equipment set-up, the fluid wall, the subject-researcher role reversal, and the advantages of this technology.

4. Digital Video Methodology in the Field

Puerto Montt, southern Chile: It is 10:15 a.m. Our arrival at I-MAR, the hybrid Marine Biology research arm of the University of Los Lagos, Chinquihue campus, is a bit overdue. We are running late for the first interview of the Chilean arm of the project with a senior researcher and project manager whose career spans five decades. His present work focuses on micro-parasites of the salmon species farmed in the region. My aging mother, who has also volunteered to be my assistant, has trouble negotiating the interior stairways of the multi-level, lake-side artisan cottage that houses the offices and laboratories of the institute. She gracefully ushers me ahead, but when we arrive at the second story office, she is out of breath from the climb. I extend my hand in greeting to the subject and introduce my mother, stating her physical limitation and the steep stairs she has just conquered. She is a Chilean by birth, holds two Masters degrees, and is now retired from a career in the medical field. She has quickly become a valued member of my team not only for her language skills and her post-graduate research experience, but as a social mediator as well. Cordialities and small talk are exchanged as I offer the subject my business card. The business card transfer is of great importance for it sets the professional boundary of the interview and provides essential information: the correct spelling of his name, institute and contact information, in case follow-up emails are necessary. My gift of a business card allows the respondent an immediate point of reference. On the back of the card, I have written my cellular number in Chile as added assurance of my transparent motives for this interview. I am more nervous than he is. This is my first interview and I am requesting his permission to use a camcorder, which I believe may cause some distress. Research participants may be influenced by the presence of the cameras. Thus, the issue of trust, while conducting an open-ended interview on one's career and research interests, is magnified when asking permission to visibly film in that individual's office space.

Set-up can be an awkward moment. For example, on a typical day, our gear bag contains the following objects:

Sony camcorder, eight hour battery, and remote control
Four lenses (wide angle, telephoto, UV, clear)
Four mini-DV tapes
Beachtek audio mixer
Two XLR cables (2' for tripod; 20' for handheld)
Two Sony corded lavaliere microphones
Sennheiser shotgun microphone with pistol grip and shock mount
Rycote windscreen and comb
Headphones
Macintosh laptop computer with Final Cut Pro editing software
Five DVDs with short samples of video work

But on that day in Puerto Montt, I decide to keep it simple with tripod, camcorder and cabled lavaliere microphone (a lapel clip-on device). The tripod is expandable and I have adapted the video camera shoulder strap for easy transport and security through airports and city streets. Equipment tests back in Los Angeles showed that the lavaliere was superior to the shotgun microphone under office interview conditions. The shotgun is useful for non-office settings where multiple subjects are on the move, and a lavaliere is awkward because of the cable.

My mother engages the subject with small talk. They are from the same generation and easily communicate informally about their lives. I interrupt to ask if there is a power outlet for the video camera and the subject points behind me. I had already plugged in the adaptor to the camera energy cord, so it was an easy motion. Just in case, I have three rechargeable Sony batteries that offer me nearly five hours of continuous play. In the weeks that follow, I find suitable power outlets in all but two of the offices; so power was rarely an issue. On occasions, my adaptor prongs are too thick to fit into older outlets and I relied on the batteries. When batteries are used, they must be recharged at night. On a tight schedule with busy professionals, you cannot risk an interview for lack of a reliable power source.

After completing the set-up, I frame a medium close-up of the subject. A lighting check is quite important, since my interviews are shot in the day time with a mixture of natural and artificial light sources. I settle in a chair on the opposite side of the desk, choosing to sit just below the left of the tripod. This allows direct eye contact with the subject. The camera is not the focus of the subject's attention at the outset. This positioning also offers me a clear view of the monitor screen to view the image, the time remaining on the mini-DV tape, and the battery life, when necessary. Since my mother also asks questions she is positioned below the right side of the tripod. This allows the subject to look to both sides of the frame, indicating clearly who is being addressed. In some cases this positioning is not possible owing to the tight configurations of some offices. Here I regret the lack of the wide angle lens that would later be added to the gear. The important aspect of a sit

down interview with single camera is the ability to view the camcorder monitor from the vantage point of the interviewer to monitor shot, tape, and battery life.

Before the initial interview begins, I summarize the study, refer to the project Web site and explain the Spanish consent form. With experience in the technical process, I learned to discuss these aspects during set-up. For some respondents, who are familiar with digital video technology, the study is more interesting than the equipment; but for others, the technology is interesting and relevant. The set-up is more intrusive for digital video than traditional interviews using hardcopy notes, but the interview itself is less distracting, since notes will be made later using the visual record.

Lights, camera, action! This particular interview begins with a question by the subject. Should he speak into the camera? I direct him to speak normally and address us as he would if there was no camera in the room. Within a few moments, the camera seems to melt away. Even when I divert my physical focus to check the monitor, he continues to speak and address me. Yet the sense of an invisible wall is quickly dispelled when he wishes to show me a journal or book--he motions to the camera as if to suggest that these objects are worthy of direct documentation. Each time, I oblige, moving the camera to film every object he offers to me. In this crossover from questioning to demonstration and back, the wall proves fluid--the camera's presence as a silent instigator of interview behaviour is powerfully felt.

Of particular interest are sketches of aquatic microbes from his original studies in the mid-1960s, before the wide use of micro-photography in his field. As I film these sketches, he narrates the importance of such artistic techniques for the nascent regional science developed early in his career. The benefit digital video seemed real--the ability to document artefacts with explanation, so much so that the interview subject becomes director of videography for objects integral to his professional past and present. When the topic turns to the subject's use of the Internet, he directs me to film over his shoulder (I switch from pod style to guerrilla), as he checks an online database of journal articles from his desktop computer. Again he directs the camera as an active participant. This general ability to document non-vocal processes such as Web navigating is another benefit of video, one that audio alone would not capture without vocal cues. That digital video is a travel-convenient, low-cost, and user-friendly innovation, which allows a wide spectrum of researchers to employ it in the field, even in distant places, supports its *gravitas* as a research tool.

During the interview, the subject receives a phone call and is also addressed by a colleague who pokes his head into the office out of the frame. On both occasions, the camera rolls on, capturing his daily activities and interactions. He does not mind being filmed, but one must know when to stop. It is the most important and subtle factor in digital video as a research practice: judging when the camera is an undesirable, intrusive, and even dangerous actor. What is important for digital video ethnography is that you have a generalized right to film yourself, except in certain government and private settings where anti-recording regulations apply (military bases, airports, etc.). This gives

you the freedom to discuss events, people, and situations as well as your immediate interpretations--just as one would record field notes--and to do this as closely as possible to the time they occur, without a camera in the setting itself. But the subjects of the research always have veto power over the recording process.

Of course, interruptions occurred in many of my interviews over the next month. I deal with the situation on a case by case basis. On some occasions, if it is a personal call, I stop the tape. On others, if it involves their work, I continue taping unless asked. In many instances, as with this initial interview, the subject is very direct with the interrupter and candidly offers that he or she is in the middle of an interview. The tone often reflects a sense of the importance of the occasion--as if they were being taped for the local news channel. The camera has this effect not only on the subject but the person interrupting, many of whom politely gaze at the recording artefacts with interest and respect.

The interview finishes with a grateful handshake on camera. In some cases, the subject did ask what uses this taped interview might have. I candidly explain that we use the tapes for academic purposes including videos at professional meetings. If any footage of the subject is to be used, advanced notice and release forms should be forthcoming. No subject seemed the least bit apprehensive with this prospect. For most, the prospect of use was a hope rather than a threat. The question of later use, though, alludes to the emerging issue of research ethics as well as financial liability in our age of digital mass media market, distinguishing this medium from audio-taped interviews, where subjects do not normally foresee an afterlife, market or otherwise.

The objective of this digital video experience was (1) *straightforward*: to document an interview with a researcher in his office, their research behaviour (email use and Web browsing) and the scientific artefacts they rely upon (journals, books, computer, telephone, lab equipment), and (2) *emergent*: to document how digital video transformed the interaction between researcher and subject. Note taking and tape recording, alternative modes of interview documentation, are limited in these respects. They rely on the researcher's note taking ability (observing accurately while note taking) and memory to distinguish auditory nuances as well as visual objects and behaviours not captured by audio tape replay. The digital video record of these interviews offers a researcher unlimited visual and auditory replay of interviews and observations (Kanstrup, 2002; Secrist et al., 2002), thus generally providing a richer and more transparent stored data source for analysis and checking by other researchers. With respect to the interaction between researcher and subject, questions of trust, awkwardness of setting up the equipment, fluid wall, and dilution of the subject and researcher roles could begin to be answered. Trust did not emerge as a prominent issue. Video set-up was a distraction only in the initial stages and can be minimized by practice before entering the field. The fluid wall points to the important transformations involved when the subject moves from ignoring the camera to speaking directly into it. Finally, digital video interaction provided the subject an opportunity to become the ethnographer, taking command of the technology. By directing the video, the subject can directly address the artefacts and behaviours considered most relevant to personal history and one's research environment.

5. Conclusion

Digital video points to a vast array of issues, including technique, strategy, and questions of ethics, many debated since people began to observe themselves systematically and present their interpretations of these observations. To address some of the relevant issues, given the innovations in documentation and presentation, this primer on digital video focused on the technology as an *innovation in research practice* rather than simply a new medium for recording social behaviour. Our overview of video ethnographic literature and illustrations of its use in the field emphasize the sense in which both the technologies and social practices of relevance here are fast becoming part of the life world of the cohorts coming of age in the twenty-first century. We find that the most important consequence of digital video in traditional qualitative interview settings is that the researcher-subject boundary is blurred and visual artefacts and behaviours become as prominent as the words that the subject utters. The implications are twofold: first, researchers must learn a new set of technological and cognitive skills (planning, shooting, and editing digital video); second, they must negotiate more complex research protocols that include human subjects considerations, copyright (the market for documentary films), and the institutional inertia of accepting text as the major form of scientific communication. But the advantages are marked in terms of new dimensions of documentation and presentation. The result is that new generations of post-graduate students do not necessarily need more training in digital ethnography than current students need in qualitative and quantitative methods. A single course should cover the basics of digital video as an innovation in research practice, including the methods of analysis and editing.

To prime is also to prepare or make ready, and we use it in that sense as well, for we hope that this Journal will serve as a forum for the kinds of issues that should be central topics of debate for the methodologies of the new millennium.

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