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Video observation as phenomenological tool within health care: revisited

Lars Botin
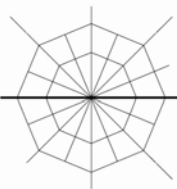
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Colophon

Abstract

Background: Video observation has shown as a dynamic, pragmatic and reflective tool in investigating, design process, learning and innovation. It is the toolness of the tool which is the major concern of this paper, where the theoretical and methodological aspect within a phenomenological and social constructivist framework is central. The construction of the tool is dependent on the actual field of investigation, which is a geriatric ward in the Danish health care system.

A historical view: The tool (video cam) is seen in a historical perspective, concerning the use of video cams in everyday life. This brief analysis takes us from the 8 mm cameras to the digital camera, where an evermore technological appropriation can be noticed.

The theory: To observe through a technical device is seen in phenomenological perspective, involving the ideas and thoughts of Immanuel Kant, Edmund Husserl, Martin Heidegger and Don Ihde. The keywords of this analysis are interaction, participation, experience, expectations, senses and how to validate the results and data of these human activities.

The method: The keywords are methodologically framed and the hypotheses are compared to traditional ethnographical fieldwork.

Video observation of data transfer at a geriatric ward in Denmark: Theories and methods are used in observing data transfer during a ward round. The observation took place in two rounds. One concerns procedures before introduction of electronic health records (EHR). The other concerns procedures after introduction of a trial EHR. The results of the observation showed that the theoretical and methodological approach lead to conclusions that were complementing questionnaires and focus group interviews which were used afore hand at the same ward, concerning the same topic.

Remarks: There is no such thing as technical control as you deal with the phenomenons of the world. The final line of this paper states that handling of data and knowledge within the health care system cannot be based on traditional scientific measurements and as you develop new technologies, for instance EHR you have to be aware of the relationship between human, technology and the world, hence the phenomenological and socio-technical approach.

Video observation as phenomenologica-cal tool within health care: revisited

By Lars Botin

Background

Video observation has been used for decades (ever since the technology became available for the common user) and has shown as a dynamic, pragmatic and reflective tool in investigating design process, learning and innovation. The tool has been used within a variety of fields and in many ways. The actual contribution tries to set out a theoretical and methodological framework for implementation of video observation regarding data transfer within the Health Care system.

The construction of the tool is the major concern of this paper and an appropriate assumption would be that video observation is situated in a specific social and material realm, where actions and the production of knowledge are results of social interaction. (Jordan & Henderson, 1996) It is not within the mind of the singular researcher that the understanding and use of knowledge is generated, but between individuals and in the living everyday life. It should be noticed that it is not the intention to discuss what everyday life is all about, although interesting and significant in this very discussion. Readers might turn to Henri Lefebre: "Everyday Life In the Modern World" (1971) in order to gain knowledge.

The usual sociological tools used for tracking and mapping action and knowledge within a specific field, and in this specific case also talking about Health Care, has been various types of questionnaires with following figures and diagrams – a representation form that leads to the conclusion that here we are talking about hard verifiable data. Also interviews – taped and transcribed – has been a frequent tool used for investigation and understanding of the topical field. The interview is a set-up and as such isolated from everyday life and the actors in the set-up acts according to a framework, which often has been constructed by the interviewer. (Kvale, 1996) A video observation could in fact have that same aspect if the operator has a predetermined agenda and leads the camera chasing evidence to prove a pre-established hypothesis. So how, when and why the video observational tool should be implemented in order to detect process, problems and issues concerning improvements within a specific professional field, which in this case is the Health Care system.

As if the theoretical framework of this investigation is constituted within the social constructivist realm, it may seem obvious that the actual topical field will have a determinant role on the theoretical and methodological outset. This means that the tool is created and constituted by the actual field and hence dependent on that field. The tool has to be transformed in order to be used in other fields; this is the reason why a certain interest has been directed on the historical impact of

the technical device and on the theoretical/philosophical/scientific meaning of the handling and use of the tool. This should bring forward indications for such a transformation. It is the aim of the paper to stabilize a meaning of the tool. If the tool has to be used in other contexts, than the Health Care System, it ought to be variegated and tested, in order to regain a new stabilized form. (Luhmann 1994).

A historical view

Every method (video observation as a phenomenological **tool** within Health Care) has or should have a theoretical foundation. The paper will deal extensively with this aspect in order to create a valid, reliable and substantial outset for investigation. It has within the last ten years been stated that video observation has an overall ethnographical approach to reality, where the observant participator is at stake. (Harel 1990).

The paper will show a different approach, although not abolishing hitherto gained knowledge due to ethnographic methods, by introducing a more hermeneutic, pragmatic and dynamic point of view. In order to establish a sound theoretical foundation, social constructivist science has shown that a thorough historical investigation of the actual technical device will lead to a more complete understanding of technological and contextual character. (Bijker, Hughes, Pinch 1989) In this case the aim of the historical investigation is to pinpoint keywords that will lead to the pragmatic choice of theory and method.

Ever since the days of the 8mm camera the possibility of registration and documentation of acts and occurrences has been available to almost everybody in the western world. The technical device was used to immortalize holidays, birthdays, weddings and other special occasions in everyday life. The outcome was often very private and particular, which meant that it was of no interest beyond the family circle. At the same time there was a similarity due to the acts and occurrences shown, that meant that if you had seen one shot of a birthday party held in honor of little Billy, you had seen them all. Another fact that enhances the similarity of these registrations was that they were mute. So the similarities were due to the technology and the occasions, and that's what makes them interesting in this specific discussion. We are used to a certain degree of similarity in the showing of the product and we expect certain occasions to be shown, such as birthdays, weddings and holidays. Highlights in our everyday life.

The introduction of the analogous videocamera meant that the sound became part of experience. Now we had two of our senses activated in the meeting with the outcome of the registrations. The technology became more physical and enhanced and enforced our senses. (McLuhan 1964). This actual enhancement and enforcement, or in other words expansion and intensification are in all the very strength of the videocam in an investigation.

At the same time it must be stated that although our senses are enhanced, enforced, expanded and intensified the actual spatiality of the outcome is rather distant from the reality. (Kofoed 1997). This paradoxical discrepancy between the outcome and reality is due to the fact, that the technical device does not reflect the technical eye. Furthermore in seeing and conceiving reality we tend to create hierarchies in the field of sight, which means we deal with ground and figure in

constant change. The videocam is not able to reflect this very subjective way of conceiving space and reality, which means that the videocam falls short as both a technical and a conceiving device. Because of these defiances the method should never stand alone in investigating, but be part of a methodology where other methods of complementing character are activated.

For what concerns the digital videocam no enhancement or enforcement as such was introduced. The most important and revolutionary aspect of the digital videocam was that the operator of the videocam was able to see through a screen and therefore was able to carry the videocam elsewhere than in front of the eye. This means that the operator becomes more anonymous in the situation and therefore more alike other actors in the given scene.

The short historical survey of the technical device leads to the following assumptions or keywords. *Picture*: It is important that all actors, including the operator/editor, are aware and recognize the fact that they are participating in the construction of a **picture** of reality. Interaction and participation is the picture. *Expectations*: Everybody (in the western world) has in one way or an other made acquaintance with the videocam. We act in accordance to established cultural, social and psychological patterns in confronting the technology. The enforcing and enhancing sensorial aspects of the technology is as well embedded in us, since childhood. One may say that we use technology in order to act appropriately in the world, in opposition to animals that from the first day of their lives already know how to deal in order to survive. (Cassirer 1944).

Several parameters for adequate choice of theory and method are now at hand. Interaction, expectations and sensorial enhancement points in one direction. The historical analysis enables us to see and to point our attention in a specific direction, which in all is the actual properties and qualities of the technical device: it enables us to see in certain directions, hence revealing issues and problems hidden to "normal" methods of investigation.

The Theory

The Moravian mathematician and philosopher Edmund Husserl stated, in opposition to the scientific objective explanation model of the world, that we should be able to understand the world through our senses and by making ourselves clear that no such thing as absolute objectivity is possible. The key point is that the body is in the world and not detached or isolated. Interaction and participation is necessary in order to understand the world and hence reality. In our preconscious we tend to order the variety of inputs that we are given by our senses. The phenomenons are ordered by our expectations to and our experience of the world.

Husserl called this way of dealing with the world and reality phenomenology. His work was continued by the pupil Martin Heidegger and the French Gaston Bachelard, Maurice Merleau Ponty and Jean Paul Sartre. As mentioned central aspects in the phenomenology deals with interaction, mobility, expectations and the senses. In this specific context – the use of a videocam – an analysis is already at hand. Jordan and Henderson investigated the learning situation introducing the use of a videocam and laid forward the results of their work in: "Interaction analysis: Foundations and Practice" (1994). At the very core of this analysis is the fact that the video shots are discussed by the actors in order to establish an improved learning situation.

Jordan and Henderson are focused on the interaction between actors and pay no attention to time and space, whereas a phenomenological approach tends to focus on temporality and spatiality. This focus on time and space is already at hand in pre-phenomenological philosophical dealing with the world. Immanuel Kant explains in "Critique of Pure Reason" (1787) that an equal interaction between the senses and the reason is necessary in order to understand any manifested phenomena. This interaction is temporal and spatial, where Kant implies values of *phronetic* character to both time and space. This means that time and space is imprinted with values of both ethical and aesthetical character, hence going beyond Cartesian and Newtonian theories. Time and space are ways of seeing things and therefore in the essence of reason and senses. Time and space are not detached from the inner being of human kind, but part of both the investigating subject and the investigated subject/object. Time and space are as such both an inner and an outer, between subject and object, between sensing and reasoning. Kant is talking about a synthesis, which reason in the end produces on the base of the empirical collected material. Reason categorizes, classifies and synthesizes the a priori essence of sensing and as the French phenomenologist Maurice Merleau Ponty states in the introduction to: Phenomenology of Perception (1945): " (how) the human lifeworld deals with and relates to a an ever changing historical experience world".

Merleau Ponty is in all a central figure in this discussion as he delivers material in evaluating theory and method, which is rather important in this case. In the essay "The Painter and the Philosopher". (1961) he writes: "The riddle is that my body is simultaneously seeing and seen. It looks at everything, but can as well look at itself and hence acknowledge the other side of this power to see. It looks at itself as seeing and as it touches itself, it has produced the action of touching something – for itself it is visible and perceivable. It is a self, not because of the transparency of the reason, which does not think anything without turning it into a thought, but it is a self which is entangled in the things, a sort of narcissism, an inseparable connection between he who sees and that which is seen, or between he who touches and that which is touched, or between he who senses and that which is sensed. It is a self which is stuck in between the things. A self with a front and a back. A past and a future." This knowledge of being between things. This intertwinement in the things, where a constant interaction between the perceiver and the perceived is at hand is the very theoretical and methodological foundation of the operator of the videocam. At the same time it is a parameter in categorizing, classifying and synthesizing the collected empirical material, in this case the tapes.

As if we are talking about a technical device, which by no means can be neutral in itself. Quite opposite to the statements put forth by the American actor Will Smith, whom in an interview concerning the newly released "I. Robot" stated that technology is neutral. Don Ihde has stated:"… Technics is the symbiosis of artifact and user within a human action". (Ihde 1990) And as such beyond any state of neutrality and objectivity.

The French anthropologist Bruno Latour has also been dealing with the problematic relationship between science and technology. Latour deals with actors and actants, whom both are under the influence of the given situate conditions. The statement: "Guns kill people" is as absurd as: "People shoot people". It is an interaction between actor (human) and actant (gun) that leads to the deed. The actor network theory (ANT) is, as is phenomenology, focused on the elimination of the Cartesian dualism – the detachment of the subject from the object world – but differs ontologi-

cal from phenomenological understanding of the world and reality, as Latour claims that subjects and objects do not have an inner nature or essence, but are characterized by constant transformation or as Latour puts it: Translation and delegation. (Latour 1996).

The German philosopher Martin Heidegger is as well concerned with action, transformation and delegation, as he insists on the properties of objects in relation to meaningful activity and claims that a simultaneous meaningful relationship between subject and object is established and stabilized through a symbiotic relationship between human acknowledgement and the object, where the object as Latour points out becomes mediating for what concerns true understanding of being. "In driving a nail with a hammer (as opposed of thinking of a hammer), I need not make use of an explicit representation of a hammer. My ability to act comes from my familiarity with hammering, not my knowledge of a hammer." (Heidegger 1949).

The familiarity between operator and videocam is assured through the history of the actual technology and the expansion and use in the practical lifeworld. And as the German philosopher Hans Jonas puts it, the technical device is made *techne* by the intentionalities and ideas that are founded in everyday life. A stone may become a tool as you throw it towards something, but this is not the essence of the stone. (Jonas 1979) The essence of the hammer is hammering as the essence of the video cam is registration through observation. Don Ihde brings forward the example of how Galilei used the telescope to explore the moon and"..take the technology *into* my experiencing in a particular way by perceiving *through* such technologies and through the reflexive transformation of my perceptual and body sense". (Ihde 1990) It is the extension of the eye, ear and body of the user, engaged and entangled with the field. Although in this entanglement with the world, based on expectations and experiences, one has to be aware of the fact that these might be lured by appearance. It is in fact a fundamental source of error, which the following example will show.

I had been living in a new place for a couple of months. It is a part of the city where stores have a very hard time surviving, which means that there is a long distance between the vendors of for instance cigarettes. For several months I was biking at approximately the same hour towards home and stopped on the way in order to get my daily ration of cigarettes. Al most every day I saw a van parked outside the vendor and the signs on the sides of the van told that it belonged to a carpenter. It was a quite normal van in reasonable conditions, so I presumed that a carpenter was either in the car, in the shop or in the neighboring pizza take-away. This went on for quite a while and I wasn't really wondering about the fact that he was there every day. Why not – I was there every day. Until the day I came by and saw the van open and the vendor was pulling out piles of soda pops, chips and other stuff he was selling from the store. My vision of reality and understanding of the world had been lured by appearance. The signs on the van and the familiarity of the actual technology (the car) as that of a craftsman had driven me to false conclusions.

This means that you cannot rely solely on expectations and experience, you actually have to analyze the situation in order to get a "true" picture of reality. In this case I could have asked the owner of the store if the van parked outside was his, but as if I wasn't acting scientifically in this particular situation I didn't. The tool has to have an analytic and reflexive part that takes this into consideration.

The Method

It should be stated that we are dealing with a mobile video observation, which means that a participating subject is in time and space and therefore have an impact on the investigated field. Methodologically this means that there is a difference regarding the stationary video observation and traditional written questionnaires, but certain affinities to the interview as a tool in investigating the world. There is a constant negotiation between the investigator and the field. This negotiation is both situate and reflective, which means that the negotiation takes place both between the empirical data and the interpreter and between empirical data, interpreter and the interviewed (Kvale 1996).

The negotiation for what concerns the interview is primary discursive, which differs from the kind of interaction and participation which is at hand in the mobile video observation, where the aim is to discover and reveal knowledge, processes and patterns of tacit and mute character. In order to hear and see the hitherto unshown and unknown the investigator has to be equipped with a technical device that enhances and enforces the eye and the ear and furthermore, the operator of the technical device has to act with empathy and to some extent have expectations regarding what might happen in given situations.

It is important to understand that the technical device is an extension and an expansion of the body, bringing forth properties and qualities inherent in the human body. (McLuhan 1964) According to phenomenological theory the body possesses the capability of prelogical synthesis, which means it will act meaningfully and reasonably in any situation and position.

In this situation it could be argued if an inspection of the field should take place before the actual video observation, and if this inspection should be performed by a professional. In this case by a person with insight in the health care system. The actual construction of theory and method shows that it would be preferable to meet the world with an unbiased mind. The theory is overall and general. It is a way of dealing with the world and a way of becoming in the world, where senses and reason in an interactive synthesis strives towards pragmatic solutions. Furthermore it is most likely that the biased inspector would be bearer of that very same tacit knowledge and act according to patterns in the system, which means that knowledge, processes and patterns would remain hidden.

Traditional ethnographical methodology shows three different attitudes that the operator of the videocam could/should choose in investigation:

1) *Holistic interview*. The interview is videotaped in order to register the various signals of the communication in the context.
2) *Quiet observer*. The camera is placed on a tripod and register in a long sequence.
3) *Personal notebook*. Mobile camera that functions as an interpretative and personal view on the situation. (Harel 1991).

The attitudes are not incompatible, but certain normative choices have to be made ahead of investigation. In this case, according to the theory, the personal notebook is quite obviously the

most adaptable, because of its hermeneutic and phenomenological character.

Martin Heidegger asks throughout his entire intellectual production for a constant open-endedness and depth in meeting the world and facing the phenomena. There are no such things as final conclusions and every phenomenon has to be inspected from various angulations, hence the multiperspective and dialectic character of both phenomenology and the actor network model.

It has been stated that videotaped registrations cannot replace reality, because the spatiality of the registrations is imperfect and one-eyed, which points in an other direction. It is therefore necessary to implement more videocams in order to strive towards the multiperspective and simultaneity, because qualities and properties of open-endedness and depth.

In this case video observation was performed by more operators in order to reach multiperspective spatiality, both for what concerns inner and outer reality. It is important that all operators are aware of the theoretical and methodological outset and acts according to that. One should be aware of this determined attitude as the results are validated. It is quite clearly a source of error and should result in critical questions to both design of method and to the innermost being of the phenomenology.

Historically the videocam is attached to everyday life and actors are familiar with the technical device. We all have images and conceptions of how the technology should be activated in given situations. According to the hammer metaphor by Heidegger it is the notion of filming which is the important.

The American artist Andy Warhol has dealt with this notion of filming as he, in the sixties, made various registrations of everyday scenes. Among those were "Him asleep" which shows a sleeping man in a nine hour long sequence. Reality is shown 1:1 without any cutting or editing. It might seem obvious that this methodological approach would not show appropriate, although Warhol shows us that we cannot understand the innermost being of the sleep unless we have experienced it in a 1:1 relationship. One should be aware of this fact as you cut and edit the empirical material. A phenomenon has to be dealt with bringing you a conception and perception of continuity and coherence.

Ethnography has ever since Margaret Mead and Gregory Bateson been using visual registration and has set out a valuable methodological approach, where constant critical questions to the importance of the "eye" are posed. "The actual set up and the use of the camera is as such an interpretation a fore hand of the situation. The registration is flat, determined and two dimensional, whilst the personal observation is three dimensional and involves all our senses. The capacity of the human eye to focus and perspective is drastically reduced through the choices of the operator. The camera does not know of being and participation in the interaction, even though the entire video observation as a process involves participation to some degree. The camera does not capture important signals as smell, taste or temperature and the specific perspective impact (like a television) is a filter.

"Likewise it is difficult to establish eye contact in contradiction to personal interaction, where you seldom doubt this very important parameter of contact." (Arendt Rasmussen 1997:64). Arendt

Rasmussen states that there are several things that the videocam is not capable of doing and therefore has to be complemented with other methods, might it be questionnaires, physical measurements, interviews and so forth.

The hypothesis of this paper is that the blind spots of the method are less than mentioned above, due to the theoretical outset, which in all tries to deal with interaction, participation and the senses. The "television filter" effect is diminished and the contact between the actors, including the operators, becomes more spontaneous in the in-betweeness and infiltration.

It has been the outset of this paper to establish a phenomenological tool intented to reveal problems concerning transfer of data. The following will show how the method was used in a specific case, where the keywords of the theory and method: multiperspective, interaction, participation and empathy was implied in both registration, edition and showing and hence inscribed in a hermeneutic circle, where actors in space and time negotiated in order to reach a consensuos and coherent picture and understanding of reality.

Video observation of data transfer during rounds at a geriatric ward in Denmark

In the scientific approach to the world and reality there is a precise relationship between theory, method and empirical data. The theory is established on sound empirical facts and through tests the theory is validated and new empirical data is produced.

In this case the method consists of interaction, negotiation, expectation and perception, which means that the conditions are far from precise and clear. And as Latour pointed out, all components are interacting on an equal level and it is the process that defines and decides the outcome.

It was stated that the operators ought to be aware of the theoretical and methodological framework and to some extent this was the case as the investigation began in December 2003, although there were no written or oral agreement concerning the matter. The actual agreements were very much "hands on", where investigators briefly described how they intended to act according to established methods and ethical rules.

A geriatric ward (G1) at Amager Hospital (Copenhagen –DK) had agreed to collaborate on this specific project, as they had agreed to collaborate for what concerns complementing methodological approaches: questionnaires and focus group interviews.

The ward was still dealing with patient records in paper and would within a few months introduce a trial electronic patient record (EPR). The trial would last 3-4 months and the intention was to register how data was handled during the procedure of a round, both before and after introduction of EPR.

The experience in the use of videocam in these specific situations was rather limited amongst the scientific personal, which acted as operators. Therefore Interactive Institute Space (II) (Malmo –

Sweden) was contacted in order to get acquainted with established methodology. II has for the last decade been working intensively with the media and has primary related to an ethnographical approach and stressing the importance of interaction with the investigated field. The actual methodological approach is not in opposition to II's ethnographical attitude, but an extension and intensification, where a focus is placed on the operator and his/her handling of the technical devise, which is an other form of interaction. The relationship between the investigated field and the operator is relatively unchanged and reflects Harel's identification of the videocam as a "personal notebook" and hence a hermeneutic phenomenological device.

The preparations to the takes concerning the "before introduction of EPR" were as such a learning situation, where a representative from II introduced to the media and the hitherto application of the tool. Scripts, tapes and reports were studied, mainly dealing with work procedures, one of which dealt with procedures at an intensive ward at a hospital in Sweden.

Due to the extensive and open-ended character of the theory and method a temporal and economic framework was established, which meant that a specific procedure was chosen. The round and the routines concerning transfer of data within this context would be the target of the investigation. A round in any medical ward in Denmark takes place from 7 AM till 1 PM; some of the routines take place outside the physical frames of the ward. These routines were not taken into consideration, because conformity and a coherency in time and space were sought.

As mentioned a brief description of the project was presented to the staff and everybody else concerned. At the same time a declaration of acceptance concerning the observation and the scientific use of the results was formulated and distributed to staff, patients and relatives. All in all this was done for ethical reasons. For ethical and scientific reasons it was stressed that anybody could withdraw their acceptance at any time during the process, which means that any registration concerning them should be eliminated from the final edited product.

The description of the project stated that: "The video observation will cover the procedures concerning the round at the ward. Medical staff, secretaries and therapists will be actors to the extent that they participate in the procedures concerning the round. The ward will be involved in the whole process, both before, during and after the observation…" (Binder 2004).

The actors in front of the videocam were identified and the concept of interaction was in the core of everything. In the final phase of preparation a schedule was produced. This schedule was the result of the preliminary inspection at the ward and was handed out to both staff and operators. The purpose of the schedule was to set up a framework for action and furthermore to inform the staff on the fact where and when the operators would be filming.

Activity	Time	Place	Operator
Activity in the secretary room and adjacent rooms	7.00 AM – 12.45 PM	Secretary room	NN
Day/night shift	7.00 – 7.10 AM	Red/green grouproom	NN/NN
Information in nurse groups	7.10 – 7.15 AM	Red/green grouproom	NN/NN
Ad-hoc	7.15 – 8.00 AM	Ward	NN
Medication	7.15 – 8.00 AM	Medicationroom	NN
Information of newly met nurses	8.00 – 8.15 AM	Red/green grouproom	NN/NN
Conference red group	8.30 – 8.50 AM	Red grouproom	NN
Nurse green group	8.30 – 8.50 AM	Ward	NN
Team conference	8.50 – 9.15 AM	Secretary room	NN/NN/NN
Ward round	9.15 – 12.00 AM	Ward	NN/NN
Nurses red/green group	9.15 – 12.00 AM	Ward	NN/NN
End of procedures	12.45 – 1.00 PM	Red/green grouproom	NN/NN/NN

Fig. 1: Working schedule for the operators during the observations of the procedures concerning the round (Botin 2004).

The brief and synthetic schedule was an eminent tool concerning guidance and orientation. A structured and systematic grid, that left room for dynamism and interaction. And although the column concerning time showed out to be quite accurate none of the operators paid any attention to this chronometric aspect, because part of time in its temporality, where: "People are within time. Not measuring it. Scientific models of change can not analyze time because they can only treat time as a succession of moments – as present-at-hand. They cannot describe the being-within-time-ness". (Henriksen et al. 2004) And this being-within-time-ness showed evermore to be a crucial aspect investigating the plot.

As can be read form the schedule one of the three operators was almost stable in the secretary room, because major part of the data transferred through this room. One could be tempted to choose the solution indicated by Harel as the "quiet observer", where the videocam is stationary and constantly registers a specific part of the room, for instance the desk of the secretary. But due to emphatic and physically interactive essence of the method, and to the ongoing activity in every angle of the room this solution was dismissed. The other two operators were constantly on the run following various actors during the concerted space and time. As mentioned the operators had no concordance concerning the actual theoretical or methodological outset, other than act normally and try to be as anonymous as possible.

As such we are talking about a traditional ethnographic where the observer is behind the observed who is connected his or her reality. In examining the actual tapes registered by the operators it became clear, that they had interpretated their role as observer in quite different ways,

which all in all is the actual set out for this paper. The trained operator from II, whom was one of the operators, had an ethnographic optic and sought to handle the situation by asking the observed what she/he was doing. It was simple and clarifying questions like: "What is that piece of paper." "How long does it take to…." At the appearance rather innocent questions with the purpose to identify the process and facilitate the cutter.

The other two operators, whom were fairly methodologically untrained, acted in quite opposite ways. This was probably caused by different kinds of expectations and degree and type of interaction with the field and the media. The operator, whom was situated in the secretary room, had the camera running constantly and tried in this way to be as objective as possible. The participating observant as a fly on the wall.

Occasionally the operator asked about expectations to the future (concerning EPR) and the observers role changed from "quiet observer" to "holistic interviewer" (Harel 1990). The other operator followed mainly a nurse during the procedures of the round, but chose rather early in the process to change focus from the given subject to how various types of formulas, schedules and a like were handled.

Instead of the interaction between individuals focus was placed on things and their values. It may seem obvious that this choice was dictated by the operator's theoretical scientific and methodological outset, which is in fact phenomenological, where things are given a value that goes beyond their mere materiality. The handling and the journey of the papers were followed in all angles of the ward, which lead to a quite different empirical material than the others. It is not the intention to claim that this way of acting is better or more appropriate, but the crew ought to have a precise idea of how and why they are acting in order to identify roles.

The observation was determined in space and time, and immediately after the ending of the procedures concerning the round, the operators gathered in a room where computers and projectors were at hand. First of all circumstantial selection of tapes were made in order to verify if there was anything registered at all. How was the quality of the sound and picture? Did we quantitatively cover, in a satisfying way, the various procedures concerning the round? If any of these rather banal aspects came short we had to return and make some retakes the following day. And although time, space, surroundings and journals would be the same, the actors would have changed, which at least for some of the material would have importance.

In this specific case we were assured that the technical and quantitative issues were at hand and the representative of II introduced a method of reflective character, as the operators were asked to write down on post-it notes, what they had experienced during the round. Every kind of notion was admissible, in order to keep the gates open. We were as such in critical hermeneutic field, where the single individual explains in short terms his/her opinion and perception of reality. There was no direct communication between the operators in this phase, in opposition to the other phases of the process where a constant negotiation took place. This lack of interpersonal communication was due to the fact that it was the notions that should interact. Our immediate opinions and perceptions should create a pattern for further investigation in the cutting of the raw material.

Examples of post-it notes:

Example 1: "Lost record. Nurse is searching for patient record. Secretary thinks that the doctor has taken it for a conference outside the building. She finds it afterwards on a desk and brings it to the nurse."

Observer The observed Reality
Example 2: "Doctor (new in office and foreigner) reads and writes in a record for a long time. At least an hour. Seems to have difficulties finding her way through the record." "Nurse writes in a patient record for a long time." Another more general note stated: "A lot of writing. A sequence showing how much is actually written in a patient record."

Example 3: "Nurse writes/faxes a notion on medication to the home care system. Do not understand the formula of the recipient:" "In prescription of medication a nurse cannot read the handwriting and has to look for the doctor." And finally: "Nurse says: It is my constant problem. I cannot read what is written." The operators were asked to choose the five notions most vivid to their memory and to explain the content of the notion. The selected notions were put on a whiteboard and gradually a pattern/structure emerged, with 5-6 hotspots. We had a ground, where the figures could step into character and thus show a picture of meaningfulness to the receiver/perceiver.

The outset of the project was to detect tacit knowledge as it manifested itself in an interpersonal interaction, but our memory and the pictures showed clearly that the problems and solutions were embedded in the huge amount of paper, that was handled during the round. Furthermore it showed that the actual handling of the patient became irrelevant and was overdone by that very same amount of paper. During the preparation there had been a lot of discussions concerning the fact that patients inevitably would be involved and how did we assure that patients and relatives were not exposed and their rights maintained. It showed out that the patients and their relatives, paradoxically, did not play any role as physical phenomenons and therefore could be cut out for what concerns the visual part of the final edition. It were the things and the handling of the things that showed out as the most interesting and problematic issue in order to understand work procedures and transfer of data.

This discovery led to the clear impression that, as Merleau Ponty and Heidegger states, the phenomenological approach enables you to reveal the very essence of things and at the very same time brings forth and exposes them in clear daylight. Even though both Merleau Ponty and Heidegger are members of the phenomenological school, therea difference concerning the thing. Merleau Ponty detects an essence in the thing itself, whereas Heidegger talks about an essence in the handling of the thing. It is the interaction between the object and the subject which is the essence of everything.

The post-it notes were essential for the further cutting and editing of the material. We had almost 15 hours of registration in a 1:1 relationship and no more than 25 minutes were needed. The handling of the staff and the filming/reflection of the crew led us to pragmatic and coherent solutions. The technical and practical aspects of cutting and editing the material are off course of great importance, considering the overall discussion of the relationship between man and technology. There exists a lot of software that will enable you to make a decent product.

It is important that the operator continues as the cutter and editor, both for what concerns the integrity of the product and for what concerns the iterative aspect of evaluation. A professional programmer would be able to follow your instructions according to post-it notes and interpersonal instructions, but he/she would be yet another filter in the process, and the less the better. Besides the fact that the operator as technical unbiased would have a more spontaneous approach to the technique, which in all reflects the phenomenological attitude.

The first editing of the material was shown to management, members of the staff and the operators. The reason why it was not shown to the whole ward was that the selected group could identify persons and problems necessary for the further editing. There was no need to involve the whole ward at this point. The management and the members of the staff found it quite natural and logic that there was a focus on the handling of paper. They found that the material showed the strength and weakness of the paper in confrontation with the expectations to the EPR.

So far there has been a focus on the relationship between man and technology, which all in all differs from the knowledge-production concerning the field (Jordan and Henderson 1995, Alrø and Dirkinck-Holmfeld 1997, Binder, Brandt and Buur 2001). Whereas the actual interaction with the field in the editing phase has as well been the concern of primary Jordan and Henderson and Binder, Brandt and Buur. The interaction with the field is intensified during this phase.

The comments concerning the first editing had great importance for the further editing. Some scenes were to short and had to be extended. Some of the actors were exposed in less fortunate positions and doings which meant that the scene had to be deleted. In order to get a overall picture of the situation and the possibilities it is important that all the operators takes part in this event. The single operator would know if the desired extension of the scene is possible. Has it been taken during the observation or do we have to return and take the scene again?
In this critical hermeneutic phase one has to be aware of the fact that a certain degree of manipulation is at hand. Together we construct a picture of reality by removing ugly spots and emphasizing aspects which might seem of minor relevance in the everyday life.

In order to reveal this manipulation and hence be critical in this phase of the process a videocam was installed and registered the whole scene. This time from a stationary position as the "quiet observer". The comments and the physical reactions were registered in order to validate and legitimate both product and process.
The operator now returned to the editing room in order to produce the second edition of the product, which was to shown to the whole staff. In this edition all the characters are identified and so are the actual scenes by titles. It actually showed out that the operator had misunderstood various things, both for what concerns the personnel and the character of the scene.

The operator was biased on several occasions and read attitudes and actions in a wrong way. The interaction with the field solved this problem. The first edition had reflected a picture of reality that was not right and this is in fact the major source of error for what concerns video observation. The interaction with field can solve some of these problems, but probably not delete them totally. Therefore a complete analysis has to be composed of more methods, as questionnaires and interviews where such problems do not exist. The second edition is as mentioned shown to the whole ward – not patients – and the cameras are moving again, in order to capture the atmos-

phere in the room. It is obvious that atmosphere is far more than picture and sound, but yet the most important factors in the construction of term, which the film industry has shown for the last century. The report on atmosphere is yet another tool for validation and legitimation, in testing the product and as such an integrated part of the method. This part of the method has already been tested and published, and a consensus concerning the scientific validity is at hand. (Binder, Brandt og Buur 2001). The second edition of the video observation concerning transfer of data before introduction of EPR was shown to the staff on the ward late June 2004 and the reactions were quite positive and no further editing of this part was necessary.

Video observations concerning transfer of data after introduction of EPR was done in that same period. And now the crew had a clear idea of how and why to act. The crew had embodied the actual technology and acted in the world as such. The result of this process showed that the material was much more homogenous and the whole procedure of cutting was much shorter. One might even claim that the open-endedness of the method in many ways disappeared, but as if this attitude is a part of the actual method, this source of error is calculated upon.

The registrations and negotiations concerning the analogous paper record had shown that one of the major problems was that so many people were handling the same piece of paper. This meant that it often disappeared, or that handwriting was unreadable and so forth. There was a lot of physical activity around the paper. The registrations and negotiations concerning the digital paper showed that things disappeared as they did in the analogous world, because informations were stored in wrong boxes and places and a lot of time was used in order to find out were it had been stored. The analogous paper is easy to handle and can be transferred quickly in space and time. The laptop depends on wires and connections, which makes it much less maneuverable despite the fact that its primary quality should be mobility. This led to the registration of quite absurd situations, were medical staff was trapped in awkward positions and the dynamics in time and space, which had characterized the analogous situation was replaced by pauses, silence and physical inactivity. An other rather alarming issue that the video observation was able to reveal, and which had not shown from questionnaires and interviews were that the handler of the technical device became in power. It is obvious that as you appropriate new technology you get a position in confrontation with the rest that puts you ahead and the organization has to be aware of this aspect as they introduce technologies, but in this case it was the hardware that gave the appropriator power, which had not been dealt with at all, as the trial EPR was introduced.

Remarks

Michael Moore's "Fahrenheit 9/11" places a question concerning sound and picture as documentation of reality. There can be no doubt that Moore's edition of reality is highly subjective and a great deal of manipulation is at hand. In this specific case it has been pointed out that all actors are aware of the fact that the media and the handling of the media is manipulating and has to be complemented by other types of investigation.

Video observation is as the English physicist and social constructivist Andrew Pickering puts it "being in the thick of things" (Pickering 1996) and it eliminates established scientific criterions. The validity and reliability of the product is dependent on context and comes forth during a con-

stant negotiation between the actors and actants . The truth is founded in the practical lifeworld and as Husserl puts it: "perception is our window to the world. The window itself is a part of this world and is founded biologically in the human body. Without the body there is no possibility of perception; no perception; no experience, and without experience nothing at all." (Husserl 1997).

There is no such thing as knowledge beyond experience as Kant puts in the foreword of "Critique of Pure Reason", although he changes his mind a few pages later. There is no such thing as technical and objective control as you deal with the phenomenons of the world.

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