Chapter 5

BODYWORK: SOCIAL SOMATIC INTERVENTIONS IN THE OPERATING THEATRES OF INVASIVE RADIOLOGY

Christina Lammer

Prologue

In this chapter the mutual connectedness of bodies and imaging technologies is discussed in the biomedical context of interventional radiology – a process that renders the blood flow visible, thus enabling diagnosis and therapeutic treatment. During the course of my fieldwork in the radiology department at the Medical University Vienna (MUW), I spoke to fifteen radiologists and fifteen or so medical technical assistants about their professional backgrounds, their work, their daily routines, and their experiences with patients. I was primarily interested in how radiological personnel perceive and define 'contact' as it relates to their interaction with patients. Do they consider that having contact with patients is important? If so, what kind of contact is possible and/or indeed necessary? Is contact established mainly through verbal communication? Or do they see interaction with patients in more multisensual terms? This being the case, what sensual realities are at work in a radiology unit? With regard to the latter, and as I quickly realized whilst conducting research in this particular medical milieu, the task of 'translating' these more tactile sensations into words – both on the part of the researcher and the researched – make the limits of spoken language painfully obvious.

FIGURE 5.1 HERE

What are the main applied aspects of my research – not only in interventional radiology but also in other biomedical areas and in interdisciplinary clinical teams, where I work with audiovisual media? How can results of my fieldwork activities, which are basically dealing with nonverbal interactions, be communicated back to the clinic personnel in a way that will enable them to be aware of, reflect on, and modify their practices? These questions are particularly challenging within my ethnographic interventions in the context of this university hospital. Health professionals (at least at the MUW) have a particular scientific culture. For them statistics and quantitative research methods are central and as such part of their education. Many of them do not quite understand what I am doing and what my (qualitative) scientific approach is about. Before I – in the role of an ethnographer – can talk about scientific aims, objectives and results, I need to explain to them what ethnographic research is, why the use of audiovisual media and other tools and fieldwork devices is important for the investigation of questions about embodiment of knowledge, nonverbal interaction in a surgical theatre, perception of medical images and embodied experiences of being a patient. Only once these 'cultural barriers' are overcome (I discuss my communication strategies with clinical staff and patients in more detail below) are further exchange of information and the mediation of results in multimedia workshops with physicians, technical assistants and nurses possible. Through this I aim to provide 'sensory routes to both researching and representing other people's experiences' (Pink, 2005). Chalfen and Rich (this volume) note, 'The purpose of the applied visual anthropologist is to offer production experience and socio-cultural sensitivity to the visual representation of human experience, and exert skills in presenting the audiovisual information to implement social change'. This goes hand in hand with sharpening my own awareness as an ethnographer of what clinicians and patients need to strengthen their work together as equal partners.

Thus I suggest a process-oriented ethnographic approach, working with my own body, sensitivities and experiences in different biomedical contexts, exploring sensitive depths of

people at the hospital with whom I not only closely work together but share research interests. Bodywork in this sense is always reciprocal: creating distance and proximity in a particular sociocultural space, navigating through everyday necessities and routines, dealing with existential dramas of life and death.

Word Flows

In this paper, as in my fieldwork, I adopt a multisensual approach, drawing on visual material that I myself produced whilst in the field (Howes 2003; Seremetakis 1994; Buck-Morss 1994; Stoller 2004; Taussig 1992; Marks 2000; MacDougall 1998). This consists of video footage taken with a digital camera whilst doing 'participant observation' in the operating theatres of invasive radiology. The resulting experimental video piece, *Making Contact*, allows me to 'unfold' the human body, revealing – alongside the network of arteries and veins digitally captured in fluoroscopy images – the body's somewhat more elusive assemblage of sentient layers and emotional depths. Key to this dual act of revealing is that in the production of ethnographic data – be it whilst speaking, writing, videotaping, or conducting any other research activity – I incorporate my own bodily sensations. This integration of the subjective and the personal, and my attempt to externalize what I am feeling, sets up an interesting dialogue between the introspective processes of bodywork and the ongoing drama of the operating theatre. Though this kind of physical and sensual workout that takes place, in part, in front of an editing monitor, and that transforms the digital video camera into a kind of prosthesis, might seem unusual for a fieldworker, I maintain that any information that my body cannot remember and make sense of is of little value given the phenomenological approach to embodiment that I see as central to my work.

In my collaboration with physicians the video footage is used as a mirror. This can cause both emotional reactions and painful effects on the part of clinical personnel. Seeing oneself in a mirror is often an uncomfortable experience. We had workshops and seminars at

the interventional radiology department, where people would start to defend themselves. It was too hard for them to watch video pictures of themselves working with patients in one of the operating theatres. Screening research material back to my project partners and informants at the hospital involves a clear distinction between levels of content. It differentiates between how we react when we see ourselves on a video screen, perceiving images of the 'own person', and analyzing the same pictures from a more distanced perspective, focusing on structures such as as nonverbal interactions with patients, clothing rituals and their sociocultural meanings, embodiment of knowledge in a surgical theatre, skin as an organ of contact as well as modes of communication. Using audiovisual devices at a hospital and discussing ethnographic footage with health professionals, who want to improve their own practices, requires introducing them to the meanings and functions of mirror images within this highly crafted and experimental applied ethnographic approach.

During my first stage of fieldwork in the radiology department, I quickly realized that time and space meant something quite different in this particular medical context. As I mirrored those involved in the routines of diagnosis and treatment at the hospital, my own movements mimetically took on their bodily rhythms, and my sense of timing fell into synch with their time frequencies. I constantly felt under pressure: perhaps because my own tasks as a fieldworker required a different form of time management from that of my informants; perhaps because I had lost my sense of orientation the moment I began research at the hospital. I could hardly find my way from the core of the radiology unit – a small kitchen where personnel make coffee and take their lunch breaks – to the examination rooms, which are located a mere twenty steps away, or the computer tomography (CT) centre. In addition to affecting the way I physically moved through time and space, the fast-paced environment and my general sense of disorientation within it made me feel as if words and sentences sped up during interviews.

Radiology patients are perceived as 'passengers.' Though they spend a relatively short period of time in the diagnostic department, radiologists tend to agree that personal contact with patients is necessary: 'The contact with patients is important for the diagnosis. Looking at him, talking with him … one gets an impression of how the patient is … Where does it hurt? Where is he swollen? For the anamnesis[1] one has to question the patient, how the complaints look like.' However, as this experienced radiologist goes on to suggest, such contact is hard to achieve:

Radiology is a special discipline because patients spend only limited time with us. We are not their treating doctors…They are passengers in our area. One develops hardly any contact. … That's dependent on the diagnostic method. I mean for a thorax X-ray we don't have any contact. Assistants would perform the procedures. The patient is already away when I see the pictures. Whereas with ultrasound physicians work directly on the patient. CT scans is another application where one has hardly contact with patients. Fluoroscopy imaging has to be conducted by oneself, which means that one also has contact with the patient during the examination. Mammography is a further crucial area. It's always dependant on the particular method.[2]

In other words, the patients' impressions and experiences are not fully taken into account in radiology because of the limited period of time they spend with radiological personnel. In this way, they are reduced to mere informants with regard to their diagnosis, as opposed to active participants in the process. Conversations with the examining doctor tend to be dry and to the point, with the result that somatic feelings of illness and non-well-being – anything that goes beyond the strict medical 'facts' – are hardly mentioned. A clear-cut discourse based on what a patient's complaint 'looks like' structures the relationship between patients and physicians, and this is particularly true in the realm of radiological diagnosis. This obvious hierarchy of

the senses, with its privileging of the visual, can be attributed to the fact that radio-diagnostic techniques are image based. Thus, verbal and personal contact with patients plays a minor role in a radiology department, even though communicating with the patient is understood to be an important aspect of diagnosis according to most of the radiologists I interviewed. This is particularly true when it comes to an anamnesis, where an analysis of the images alone does not provide all the information required to fulfill the various procedures. However, the following quotation hints at just what kinds of procedures are being referred to by radiologists when they suggest this need for more personal contact:

I meant personal contact. That one with the patient … I ask the patient what complaints he has before and during I make an ultrasound or X-rays of the stomach. 'Where does it hurt?' Then one very often gets the stupidest answers. They would say, 'I have a gastritis.' I would respond that, 'I don't want to know whether you have a gastritis but rather which complaints you have.' The contact with patients can be difficult and misleading but it is very important for the funding procedures. … When one recognizes something, then he says that he had a fracture there, things become clearer.[3]

Clearly, this radiologist sees patients harshly. Furthermore, his cynical take on the patient's actual input *through* 'personal contact' does little to challenge the already objectified status assigned to patients by the medical establishment. Reinforcing the hierarchical relationship that exists between doctors and their clientele, the aforementioned radiologist – who is one of the most experienced in the department – is mocking of the vocabulary the patient uses to describe his/her complaint. When the patient says, 'I have a gastritis', s/he affirms her right to partake, like her physician, in biomedical notions and definitions of disease. If this represents a passage of transformation of perception and identity for the patient, his/her efforts are not particularly welcome, and nor do they help to narrow the gap

between patient and physician. Rather, the patient's attempt to make him/herself understood is seen as a foreign intrusion into the language of medical expertise – the borrowed words and expressions shifting the patient from the personal emotional context of somatic inner experiences (of either well-being or illness) to that of disease and clinical (authoritarian) judgment. If, for the purposes of the radiologist's reports, such statements are useless, they also, somewhat ironically, serve to bolster his status as 'the expert.' This, as Arthur Kleinman (1988: 135) suggests, is because 'physical complaints are authorized.' As he goes on to explain in his book, *The Illness Narratives,* 'The diagnosis is, in fact, a systematic distortion of the interview: only facts that relate to the disease and its treatment are sought, allowed to emerge, and heard.'

One of the radiologists vividly explains how the development and technological advance of diagnostic tools has led to a transformation of social relationships between clinical personnel and patients:

I try to talk a lot with patients. Speaking with them before their CT and MR scans – not in a situation like today. When I am alone here, then I certainly do this. Then I see every single patient face-to-face and not only in the tube. That's important for everyone. What is left otherwise? Actually a fully dehumanized and empty proceeding. One also comes to know a lot from the patient. They are so important. Yes? It's all about patients, not about myself or the techniques or the particular medical procedure.[4]

During the course of my interviews, a growing and somewhat uncomfortable sense of self-awareness among radiologists became perceptible to me, though just how this manifested itself is difficult to put into words. In an attempt to convey this feeling, I offer here a short anecdote that touches on my own experience of doing participant observation at the CT

centre. I then go on to explain how this experience informed subsequent stages of my research process.

Touching Images

After spending a few days in the CT funding room, as well as observing fluoroscopy imaging of the act of swallowing, and seeing numerous images of tumors in the bowel and other parts of the intestine, these pictures of disease carry on a disturbing afterlife in my dreams. I vividly imagine myself as a cancer patient. My body even produces painful symptoms. A few weeks later I end up seeing a surgeon, who performs a colonoscopy. An endoscope is introduced into my rectum, and a tube travels up my colon. Fortunately, this uncomfortable procedure does not reveal any sign of a malign growth or inflamed tissue. However, in a flash the imaginative power linked to radiological and biomedical procedures become somatically obvious to me. Later, when I recount this moment of revelation to a young radiologist in training in a self-deprecating manner – playing up the element of embarrassment over my own hypochondria – he is not surprised. In fact, he confesses to having had similar experiences when he first began analyzing CT scans.

In her seminal text, *The Body in Pain*, Elaine Scarry (1985: 164-5) suggests 'that "pain" and "imagining" constitute extreme conditions of, on the one hand, intentionality as a state and, on the other, intentionality as self-objectification; and that between these two boundary conditions all the other more familiar, binary acts-and-objects are located. That is, pain and imagining are the "framing events" within whose boundaries all other perceptual, somatic, and emotional events occur; thus, between the two extremes can be mapped the whole terrain of the human psyche.' In the case of my own research, a new awareness that my imagination and anxieties were playing a crucial role during fieldwork and beyond propelled me to rethink my methodological approach and engage with theoretical concepts in such a

way as to incorporate these painful experiences by systematically channeling, analysing and multisensually documenting them.

I started doing participant observation in the angiography and interventional radiology operating theatres, using a digital video camera to focus primarily on nonverbal and sensual interactions during diagnostic procedures. In other words, I used (and still use) the camera as prosthesis – as a physical extension of myself. For instance, the zoom technique enabled me to 'dissect reality' analytically, whereas my own body faced operating procedures from a relatively distanced standpoint on what Susan Buck-Morss (1994: 56) has described as an 'anaesthetizing screen.' The camera allows one to take a distanced position from the operating field, protecting oneself from scenes which are emotionally tough to watch. Thus I could document and record what I thought was important in particular situations during the intervention, without harming myself. In fact, Buck-Morss's notion of cinematic bodies and viewers that are 'anaesthetized' because 'both are absent from the scene' is useful to my own thinking around this project.

Thus, within the context of fieldwork where surgical as well as radiological modes of embodiment are observed, bodies and viewers are both present. You could say that my use of a video camera as prosthesis methodologically mirrors diagnostic and therapeutic techniques of the body, as applied in the operating theatre (Mauss 1992: 455-477). Like my camera, X-ray devices produce moving images of staged bodies, and then project these images on screens. In this particular biomedical field of practice, physicians are dealing with two distinct bodies: the flesh-and-blood body, and a body of images. In interventional radiology, the surgeon and the cameraman (director) are one and the same person. Individuals undergoing an operation face the 'prosthetic organ' (Buck-Morss, 1994) of the screen given that most get only a local anesthetic, and can hence watch their inner 'body landscapes' on monitors. The screen as a mirror matters in manifold ways. As such mirrors are used as 'prosthetic' as well as 'anesthetic organs'.

Producing an awareness of how to utilize moving radiology images on monitors for more 'human' work with patients is only one valuable aspect of my collaborative applied ethnography in the context of interventional radiology. What follows is a description and analysis of scenes from the experimental ethnographic video, *Making Contact*. The narrative is divided into five sections: 'Staged Bodies', 'Embodied Knowledge and its Voices', 'Clothing Rituals', 'Eyes-on', and 'Hands-on'. But first, some remarks with regard to the montage itself. The technique I developed for arranging footage was based on a cut-and-paste model: colourful ink print-offs of screenshots were pasted into sections of the black and white video, thus disrupting the usual structural patterns associated with both still and moving images. My aim was to create an experimental approximation of Walter Benjamin's (1963: 31-2) argument that the cameraman and his (sic) filmic apparatus penetrate reality in the same way that the surgeon does.

In terms of the text accompanying these images, the fact that verbal exchanges between people in the operating theatre took place in German meant that I had to translate their conversations into English.[5] Selected excerpts were inserted into handwritten balloons, similar to those used in comic strips. Why this borrowing from the comic strip format? Comics are a playful medium that, in their combination of the visual with text-based narratives, manage to transcend the usual artistic boundaries dividing drawing, painting, photography, film and video. The generation of text is deeply integrated into the imaginative body – the balloons offering the viewer/reader a useful tool with which to navigate narrative storylines. In consciously avoiding computer-based text, I was also aware that I didn't want to create any associations between my work and those medical soaps on TV.

Making Contact

In the operating theatre, the head of the interventional radiology department describes his practice of diagnosis and treatment:

These are no particular gifts. Most important is to keep one's senses open for anything which could go wrong. Teaching in this field is relatively difficult. In conventional radiology one can show young [colleagues] a system allowing one to analyse an image. … In interventional radiology I perceive the picture in toto. Similarly I have to observe how the patient behaves. Does he become very quiet? Is breathing difficult for him? Does he start slightly coughing? That's more difficult and complex. I cannot only concentrate on the X-ray, but furthermore keep my eyes, ears and antennas open to the patient. … Everything is done directly on the patient and the procedures are invasive and most of them include therapeutic aims. Patients have high expectations, are anxious and often very nervous. One has to tell younger colleagues how they should inform patients and what to say. They need to learn to see the patient as an acting person and not only as a material body proper, which they will examine and treat on the following day … This can cause a problematic exchange. If it is only a standard examination, for which one does not need full concentration, then talking with the patient is fine. But if it is a more complicated examination, then I have to explain this to the patient: 'I am sorry, but I need full concentration by now, so that I don't make a mistake.' During the intervention most of the patients – they have a lot of expectations and fears – are very quiet anyway. After the examination, they are often astounded, how harmless all this was. Then they start talking and questioning.[6]

The interventional radiologist speaks about the complex interrelatedness of bodies, machines and images in his daily routines. Helpful here is Arthur W. Frank's (1995: 50) notion of the 'communicative body', and his suggestion that, 'The body itself *is* the message; humans commune through their bodies … Human communication with the world, and the communion this communication rests on, begins in the body.' As minimally invasive operating techniques, diagnosing and treating the blood flow with the help of video fluoroscopy images offers an

exciting insight into how such a 'communion' works, emphasizing as it does the mutual connectedness of bodies, material components and machinery in the biomedical context. It also provokes the following five questions: How are bodies staged in the operating theatre? With which voices can bodies speak during this kind of treatment? Which clothing rituals are at work and how can one make sense of the ideological, biopolitical and sociocultural shaping of corporeality in the clinical institution? How is the division of labour between eyes-on and hands-on procedures organized? And how can the video material be mirrored back to the hospital staff?

In attempting to provide some answers to these questions, *Making Contact* (2004) joins a growing corpus of work that applies a multisensual bodily approach to the field of visual anthropology. Its contribution is that it engages all of the senses to tell a story: incorporating touch, taste and smell into a surreal, sterile yet fleshly audiovisual imagination. True, such an undertaking is unavoidably bounded by the audiovisual medium and form. The challenge, thus, is to use this experiment in ethnographic video production to test out and even transcend apparent limitations. 'You ought to tell us how to speak with patients,' commented an interventional radiologist after he and a few of his colleagues saw some of my early footage in one of the department's monthly seminars. You could say that *Making Contact* is my attempt to do just that. However the applied approach I suggest is not simply about telling physicians how to speak with their patients. Video replay can help clinical personnel to improve performance (2005: 11): 'During a recent six-week experiment called "ACTION!", six radiology residents at McGill University Hospital Center in Montreal were videotaped while discussing cases at teaching rounds. The residents' performances were reviewed and critiqued by an academic radiology "coach", Jeffrey Chankowsky, MD, and then the residents were taped a second time to see if they improved. At the end of the six weeks, the residents' communication skills ranked higher as did their case based knowledge.'

Staged Bodies:

Arthur W. Frank (1995: 118) has observed how illness narratives are often framed as 'quest stories', and thus recounted in the form of a journey. I contend that such a framing aptly applies to people undergoing diagnosis and treatment in interventional radiology: the road, in this case, being one that leads them through a number of different stages. Although my focus here is on the part of the journey that finds patients in the operating theatre, one cannot isolate *communicative bodies* in this particular clinical setting from the social and emotional worlds they habitually live in. The storylines I develop in *Making Contact* start in the 'Abliegezone' – a room where patients, confined to hospital beds, are prepared just prior to being wheeled in for their operations.

FIGURE 5.2 HERE

The word Abliegezone is significant in itself. 'Abliegen' means to 'lie at a distance,' and though there is no exact translation for the word in its entirety, the objectified status of the (sick) person who 'lies at a distance' is implied. After watching the *Making Contact* video, medical technical assistants in the department discussed how they would react if they had to wait for the procedures to begin at the Abliegezone. Their reactions were empathetic and they realized how patients who have to wait in this area feel.

After this period of anxious waiting for the procedure to begin, a male nurse transports the patient to the operating room and gets the patient prepared. People are washed, shaved, positioned on a bed, covered with surgical cloth, and hooked up to sensors and other devices that control bodily functions like breathing and heart rate.

Nurse: Now comes a curtain. You already know this from last time.

Patient: I had this already twice.

The body itself gives hardly anything away. Its shape is artfully concealed. One cannot even localize the person's head or toes beneath the sterile cloth landscape. Only a small square of exposed skin signifies the operating field.

Patient: Through the artery in the liver – the first time one gets a painkiller. Afterwards doctors always want [you to do] without [a painkiller]. But I don't want this. Then they gave me twenty drops.

Through pain and imagining, 'framing events' are created within those boundaries that stage and fix bodies. A 'good story' should be the result of diagnostic and therapeutic operations.

Radiologist: Now you will feel warm again. We will take a control picture. If it does not look beautiful we need to introduce another stent prosthesis.

The patient is dissociated from his or her body during the intervention. Quite literally, s/he *has* a body – a body that is completely in the hands of clinical personnel and technological devices. As Arthur Kleinman (1988: 26) has emphasized, 'Each of us *is* his or her body and *has* (experiences) a body. In this formulation the … person is the body and also recognizes that he or she has a … body that is distinct from self and that the person observes as if it were someone else.'

FIGURE 5.3 HERE

The body's 'initiation' is performed through the puncturing of an artery. For this the patient gets local anesthesia accompanied by the radiologist's words: 'You will feel a little

stitch now.' Henceforth, the exchange between radiologist and patient is reduced to technical explanations, questions and responses pertaining to what is being done. The vocabulary used by the radiologist could just as well be from the field of engineering.

Radiologist: This is quite a plug you have here. Really, it's tough.

Patient: What are we doing now?

Radiologist: Now we are dilating. Immediately you will feel a pressure.

Patient: Yes.

Radiologist: We leave the balloon blown up. Let's see whether it [the blood vessel] remains open. If not, we will put in a stent.

…

Radiologist: What sluice is this?

Assistant: A six.

Radiologist: Fits with the stent.

…

Radiologist: You will feel warm now [of the contrast, which is introduced in the blood vessel]. We are making a control angiography. Don't move.

Patients undergoing the operation now 'lie at a distance' on the surgery table – their fleshy interiors transformed into abstract X-ray landscapes that appear on a screen before them. Bodies are staged as 'damaged commodities' that, with the help of minimal-invasive devices and embodied techniques, can be fixed.

Embodied knowledge and its voices:

In *Transcultural Cinema*, David MacDougall (1988: 53) suggests that, 'We make contact with others not by interpreting the meaning of their conduct, but by imitating what Merleau-Ponty

calls a much more generalized postural schema … This means that in viewing a film a viewer is usually responding not only to the content of images (the postures of the subjects, for example) but also to the postural schema of the film itself, embodying the filmmaker.' Following MacDougall, I argue that what he refers to as the 'phenomenon of physical communion' (ibid.: 52) applies as much to the biomedical practice of (interventional) radiology, as it does to the practice of film-making. Bodies are mutually interpenetrated, leaving deep though invisible somatic traces; filling perception with multisensual flesh.

It is this idea of mutual interpenetration that I want to address now, drawing on Laura Marks's (2000) notions of tactility in her book *The Skin of the Film* to lend texture to my 'thick' descriptions of those surreal landscapes that emerge from the examination/treatment of arteries and veins through various imaging devices and material components, such as metre-long wires, tiny balloons, and catheters. In this particular field of practice, embodiment of knowledge takes place 'under the skin.' The noise of the X-ray machinery almost drowns out the exchange between radiologist and assistant.

Patient: Until I noticed that there was something wrong I never had complaints during menstruation.

Radiologist: Mm, did this still hurt?

…

Radiologist: Did you feel any improvement since last time [since the last intervention]?

Patient: It improved … although because of my diabetes – and the wounds, the wounds are very painful.

Radiologist: I understand. It's mainly on the right side?

Patient: [screaming]

Radiologist: This is a small stitch only – the punctuation.

In the realm of interventional radiology, tactile abilities should be taken seriously. The sense of touch as 'learned' and the whole concept of 'embodied memory' are crucial to this biomedical field of practice. As Laura Marks (2000: 146) explains: 'The interestedness of perception depends upon the memory of what counts as useful information: for example what counts as useful in a given culture will inform whether one perceives an object visually, tactilely, olfactorily, or (usually) in some combination of these and other modalities.' Through learning by doing, young physicians in training simultaneously explore blood vessels with their eyes and their hands, coordinating their somatic repertoire of perception with the tactile qualities of anatomical and pathological bodily exploration. At the start they imitate their teachers. It is through this mimetic process that a sense of embodiment emerges.

Radiologist: One has to feel tactile resistance. If moving the catheter forward is becoming more difficult, this is an alarming sign. Can I see anything significant on the picture? There is as well something wrong, if the patient is in pain.

FIGURE 5.4 HERE

During these operations, the bodies of the physicians, assistants and patients are wired up so as to resemble marionettes. The communing body performs a 'secret' choreography in which 'one has to feel tactile resistance' in the arteries and veins as one moves catheters forward, pulls wires out of the body, and inserts stent grafts to keep the blood vessels open. The body, as Marks (2000: 190) suggests, becomes a 'terrain through which we travel.' As she explains: 'Medical technologies such as X-rays, ultrasound, CT scans, and colonoscopy render our viscera visible. They offer not an embodied visuality, but a visuality that makes our bodies objects to us.' Marks, here, is making reference to the artist Mona Hatoum and her video installation, *Corps étranger* (1996). In this piece, viewers literally travel through

Hatoum's body via an endoscopic device attached to an invasive camera eye. According to Marks (ibid.: 190), 'Hatoum can "afford" to treat her body as an object; the effect of this work would be quite different if it were performed with any body but her own.' In my own case, the moving images perceived in the operating theatres of interventional radiology are X-rays of the blood flow. As a layperson, these images haunt me. Devoid of flesh and sinew, the blood vessels look transparent, even ghostly. That said, the patients themselves seem all too aware that what they are seeing on the monitor mirrors the interior of their own body. As regards the overall impact that these images have on patients, it is hard to generalize. Many of the people with whom I have worked have told me, prior to the intervention, that they are not interested in the pictures. However, once they are in the actual situation, they often change their minds. One of the patients – a television journalist – with whom I had intensive contact during one stage of my field research, sent me an email about his experiences:

Not flesh, not blood, not twitching tissue, angiography images are 'clean' like the pictures of a bomber, which releases a precision bomb. I'm not irritated at all by this. I can look at the pictures during the intervention without feeling tension or nausea. The 'filter' that [means] colour and details are invisible creates calmness and distance. That's what one needs as a patient in this situation. Realizing how the physician manages to penetrate a tough plug in the vessel, setting the balloon, one shares his success. Seeing that the contrast fluid marks the unhindered passage through the former problem zone one experiences incredible relief. In a few minutes only one gets liberated of complaints, which one had for months and made one anxious and depressive. In this moment one experiences an enormous gratefulness.

Interestingly enough, the popular name for the disease that the above patient was being treated for is 'shop window illness' ('Schaufensterkrankheit' in German) – a condition of the leg that makes standing up for long periods of time, and walking great distances, incredibly painful.

Window-shopping, obviously, is an activity to be avoided if you suffer from Schaufensterkrankheit.

Unmaking Contact

Cloth as a metaphor for society, thread for social relations, express[es] more than connectedness … The softness and ultimate fragility of these materials capture the vulnerability of humans, whose every relationship is transient, subject to the degenerative processes of illness, death, and decay. (Weiner and Schneider 1989: 2)

FIGURE 5.5 HERE

Clothing Rituals:

Cloth has a particular meaning in surgery in general, and interventional radiology specifically. In the section that follows I argue that clothing rituals give the communing body and its staging in the operating theatre its unique sociocultural character. The more a medical practitioner is wrapped in sterile cloth – which is donned with the help of others in a ritualized mode – the more one gets in touch with the patient's body, and the closer one gets to the operating field. Proximity and distance are structured through cleaning rituals involving the body – especially the washing of hands – and through the donning of hygienic clothing. The more cloth one wears, and the more the procedures of pulling on sterile garments are ritualized, the higher up one is in the hierarchical chain of surgical labor.

Sterile clothing rituals are performed like a dance. The patient is already artfully covered with green drapery. Only a small square of skin is exposed – the operating field. According to Drew Leder (1990: 25-27), visceral processes are instances of a 'corporeal

disappearance'. For patients undergoing interventional radiology, this corporeal disappearance takes on a different form to that of conventional surgery. Most of those who undergo the former only get a local anesthetic. They consciously experience the whole process: being prepared, hearing the noise of the machinery, seeing the equipment and the material components, waiting for the operator and the medical technical assistant who, after an often considerable delay, finally enter the sterile field. Depending on the nature of the intervention, radiologists either work in conjunction with surgeons or perform the operation on their own. Interventional radiology is one of those fields that transcend disciplinary boundaries.

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The more surgical/invasive the procedures are, the more rigidly the body of the operator is enveloped. The cultural development of clothing rituals is embedded in the history of invasiveness within this radiological subdiscipline. Thus, it was not from the beginning that the settings where angiography image-based interventions took place were coded as surgical. Of course, radiological personnel have always had to wear lead aprons in order to protect themselves from diagnostic radiation. However, the sterile field in this area was defined step by step, and still means something quite different from that of conventional surgery. As Katharine Young (1997: 93) elaborates:

Once I brushed the back of the sleeve of a surgeon's gown with the corner of my notebook and he turned around and snapped, 'Watch out for the sterile field.' The boundaries of the sterile field, palpable and impalpable, are clear to its inhabitants. Along its rim, the field

pouches in, as it were, refitting its boundaries around the bodies of the surgical team so that their costumes and accoutrements serve as its finely articulated edges. Surgeons never enter the sterile field in their own bodies. Rather, the boundary of the space is rendered a flexible membrane, which they poke in and which closes around them so that they can manipulate what is inside.

As objects, image devices dominate the creation of the sterile field within most contemporary invasive radiological procedures. Pictures of the body's interior are perceived on monitors and not through surgically cutting into flesh. Tactile epistemology in this particular biomedical field is mediated through digital screenings of the blood flow and other organic inner structures, which are then projected onto TV screens in real time. Thus the sterile field and its boundaries are wired and electronically framed. For this, bodies are washed, prepared, clothed, positioned, staged, moved, touched, perceived, made and unmade in a highly complex choreography.

FIGURE 5.8 HERE

FIGURE 5.9 HERE

As it simulates the sterile operating field, the screen has a double function: it works both as 'anesthetic organ', and as 'roadmap'. In this way, it enables radiologists to navigate material components through blood vessels and inner corporeal structures. The wired hands of the operating team seek out their pathways: exploring the carnal terrain beneath the skin; detecting tactile resistances with the help of technologically-rendered moving X-ray landscapes. As such, the sterile field is embedded in continual operations of digitally-mediated simulation. Flesh and blood is simulated on screens in a real time setting, which

allows direct manipulation of pathologically defined 'problem zones' inside the patient's body. The epistemological fabric unfolds on video pictures, instead of peeling off skin and tissue.

The radiological gaze explores and palpates the screen as if it were an organ, isolating particular information within complex framing and montage processes. The operator enters after the patient is enveloped and has been properly positioned. One of the medical technical assistants pulls on a sterile surgical gown. S/he will assist the radiologist with the 'hands-on' procedures – passing the catheters, wires and other material components. His or her colleague will take care of the 'eyes-on'[7] operations – the positioning of X-ray tube and monitors, the framing and editing of electronic images during and after the intervention, and bringing over sealed packages of sterile gloves, cloth and other material. In other words, the latter's function is comparable to that of a nurse in conventional surgery.

In order to explain how the 'choreography' that preserves the sterile field in the operating theatre is designed, I offer here a description of some of the video taped scenes from the *Making Contact* footage. Initial cleansing and clothing rituals are highly staged – a prologue to the dance. In an alcove, the radiologist washes his or her hands and forearms with a scrub brush, and enters the operating room, holding hands and fingertips up. S/he wears a heavy lead apron, a surgery cap, and a mask that covers the mouth and nose. Assistants are in attendance. The assistant who is technically 'sterile' opens a folded long-sleeved gown, shaking it out in front of the radiologist 'so that he can walk into it, leaving the opening at the back' (Young 1997: 95). Then the dance begins. At least three performers participate in this complex choreography. The 'non-sterile' assistant comes round and ties the radiologist's gown at the back. In the meantime his colleague takes a pair of gloves from the sterile table, holds the left one by the cuff while the physician inserts a hand. Then, as Young (ibid.: 95) goes on to explain, 'they both take hold of the cuff of the other glove and pull it onto his right

hand.' The radiologist wriggles his or her fingers. Finally, s/he hands the 'sterile' assistant one of the ties, turns around, and attaches the gown on the left hand side.

Radiologist: So, Mr. XY, how are you doing? Good morning.

Patient: I feel a little bit constricted right now.

Radiologist: Sure, beneath the drapery. No doubt about this – and in addition?

Patient: Not too bad.

…

Scrub nurse: [Helps the surgeon in his sterile gown and gloves, and because the circulating nurse is not in the room she asks me.] Are you able to close this coat? Here?

As to this last directive aimed at myself, my layperson status made me feel nervous about touching the surgeon's sterile gown. Within seconds, I realized the significance behind this seemingly simple request, and was slightly taken aback. In effect, I was being invited to touch the 'sacred boundaries' of the sterile field – a moment of initiation indeed.

'Eyes-on' and 'hands-on':

The scrub nurse included me in the communing body of the operating team. The sense of touch – making and unmaking physical contact – is crucial for the creation of a sterile field and its boundaries. However, the tactile epistemological framework works differently in radiology. In radiological practice 'eyes-on' tactility is embodied with the help of digital X-ray devices, whereas in traditional surgery surgeons are 'hands-on' practitioners, the surgeon's hand literally 'entering the body and cautiously feeling its way around the organs' (Taussig 1993: 31). In fact, and as suggested earlier, interventional radiology combines both modes of embodiment: the 'eyes-on' organ of the screen is wired to 'hands-on' prostheses, which become all the more obvious in the operating theatre.

Radiologist: [to the patient]

Please,

don't breathe, don't move,

don't breathe, don't move.

…

Assistant: Continue breathing.

The radiologist tells the patient what the images are showing, and explains what is about to be done. With his finger he points out sections on the screen. He says:

Radiologist: We take this away, this part there.

Patient: Aha.

Then he continues the 'hands-on' procedure of embolization, filling up blood vessels with tiny liquid plastic pearls. The material is introduced through a catheter. Frequently control angiographies are performed. For this the patient is injected with 'contrast media.' In this way, the blood flow is chemically enhanced and rendered visible on moving fluoroscopy pictures.

Radiologist: Mr XY, please …

Don't breathe. Don't move.

Don't breathe. Don't move.

…

Assistant: Are you okay, Mr. XY?

Patient: Yes, though I can't get enough air.

Radiologist: Why? Are you in pain?

Patient: No, you did not say, ‘continue breathing’.

[Personnel break out laughing]

…

Radiologist: If I don’t say anything than don’t breathe just for ten or fifteen seconds – until the noise of the machine leaves off.

Patient: Ah…

In other words, a ‘hands-on’ procedure in interventional radiology is a wiring mode. Catheters and sluices are moved in and out of the blood vessels. In fact, it is through wires that the bodies of the patient, radiologist and assistant become intimately connected with one another and with the imaging device. Embodied ‘eyes-on’ and ‘hands-on’ procedures are mutually interpenetrated. The eyes of the physician are on the screen, isolating necessary information from the X-ray map of the blood flow, and this enables him or her to navigate material components through the tiniest of vessels. For radiologists, the screen as a prosthesis functions like a window, casting light on the body’s innermost crevices. As for the patient-viewer, s/he is bodily dissociated – quietly following the scene on a monitor. The operating field itself is but an opening in the drapery. Through a sluice, which is placed in this opening after the artery has been punctured, thin wires are pushed in and pulled out of the blood vessel. These are the threads, keeping the ‘communicative body’ and its various parts together. Only a few stitches are required to sew up the wound after the operation is finished. Minimal-invasive interventions leave hardly any visible trace on the body surface.

FIGURE 5.10 HERE

Radiologist: So, that’s it.

Patient: Thank you.

Radiologist: My pleasure.

Epilogue

How do patients see themselves as they watch their own inner bodily workings during these kinds of radiological operations? In the course of my research I tried to get as close as possible to this wired communicative body as it is staged, palpated, profanely illuminated, manipulated, diagnosed, treated, cut open and sewn up. To do this, I drew upon the magic qualities of mimesis through the help of the prosthetic eye of my video camera. Bodies of patients as well as medical personnel are staged through particular acts of framing. The postural schema of imaging technologies produces physical communion between radiologists and patients. Proximity and distance are controlled through cleansing and clothing rituals. The sterile field is created through image devices. I argued that a multisensual approach would encourage empathy and create a deeper sensibility amongst health professionals at a teaching hospital.

Instead of closing here with a conclusion, I will unfold the perspectives of this particular applied bodywork approach, which I have developed for interventional radiology. Since my clinic project is being continued (at least) until the end of 2009 in different biomedical fields, I am already able to report on a follow up project, *CORPOrealities* (www.corporealities.org), which started in October 2004. This work includes case studies in reconstructive and plastic surgery, working with cancer patients, collaborating with interdisciplinary clinic teams and elaborating expressive modes and experimental tools together with two artists, Barbara Graf and Catherine Rollier, and with a curator, Cathrin Pichler, who is not only experienced in the conceptualization of exhibitions and fine art events

but has additionally been trained as a medical doctor, psychologist and sociologist. Unfortunately she contributes to the research in a double role, as scientist and patient. Cathrin has multiple sclerosis (MS). She was diagnosed ten years ago, but developed MS more than twenty years ago. Her experiences of living with this disease are extremely influential in our transdisciplinary research collaboration. Our own 'nervous costumes' react more sensitively. We have developed an awareness of how difficult life with such a threatening and painful condition can be.

Another section of *CORPOrealities* involves the use of digital media in a patient record system, *Unified Patient*, which is being developed at the department of Medical Media Services (MMS) at the university hospital and includes research on how this tool is used by clinicians and medical students. The methodological framework goes hand in hand with a problem-oriented approach. Research questions are posed within the different biomedical fields at the hospital. For instance, for the head of the plastic surgery department, Manfred Frey, the socio-cultural background of women who will get reconstructive operations on their breasts is an important issue for planning surgeries. He wants to get a better feeling and understanding of the 'meaning of the breast' for women, and the individual expectations of his patients. Aesthetic problems and suffering are inseparable in reconstructive surgery. Thus the general aim of an applied visual anthropology approach in the context of biomedicine is the development of communication tools and multimedia applications, which provide mediation between subjective experiences of bodily processes and objective forms of knowledge of the human organism and its inner structures. Notions like empathy and embodiment are investigated to bring apparently unapproachable emotional worlds, which are vividly active at the hospital, to a treatable and manageable surface. For most of the clinicians the development of qualitative standards in their work with patients is at the foreground of their interest in the research.

Patients and clinical staff live with artificially, technically and socioculturally produced artefacts. They embody them in manifold ways. In biomedical practice and beyond the *Unified Patient* becomes part of one's identity. Bodily aspects and tactile qualities are central observational patterns. Within these ethnographic research activities art meets biomedicine through the performance of fieldwork. The results will advance sensitivity to the emotional and imaginary modes of treatment and diagnosis which are involved in biomedical fields of practice.[8]

Filmography

Making Contact. 2004. Christina Lammer. MedArt / somafilm (Vienna, Austria). 20 minutes.

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Notes

[1] An 'anamnesis' is a patient's story.

[2] The interviewed radiologist is head of the interventional radiology department at the Medical University Vienna (MUV). The interview took place 2004 as part of the field study I conducted at the department. We spoke German. I translated the transcript into English.
[3] The interviewed radiologist is head of the surgical unit within the department of radio-diagnostics at the MUV. The interview took place 2002. I translated the German transcript into English.
[4] The interviewed radiologist is also staff member of the department of radio diagnostics at the MUV. He is mostly responsible for magnetic resonance imaging (MRI). I translated the transcript into English.
[5] Actually the ethnographic video materials are used within the clinical context. Only for screenings of *Making Contact* at international conferences, I needed to translate the documented conversations into English.
[6] See footnote 2.
[7] These are typologies (made up by myself), which I use to analyze and explain the complexitiy of sociocultural patterns, relationships and modes of embodiment in interventional radiology.
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