

REF 388

"Sketch and Talk"

-an ethnographic design method **opening** closed institutions

## Abstract

The aim of “Sketch and Talk” is to gain knowledge on the role the furniture and interiors play in psychiatric hospitals, prisons and similar closed institutions. Patients and clients in these settings are rarely heard or cited on the subject. The presented method intends to OPEN these environments for a critical view on design’s impact on power relations, health and habilitation.

“Sketch and Talk” is developed through an iterative process in real time-space-interpersonal situations and based on semi-structured qualitative interviews with simultaneous hand sketching/visual documentation of the physical environment. Sketching applied this way can act as a mediator, and may be perceived less threatening than other documentation tools, as photos or audio recordings. Due to situational and spatial circumstances, e.g. interviewing in the respondent’s cell, there is considerable risk of privacy violation and exploitation. However, the method’s focus on the physical environment’s power relations ‘in situ’ may reduce risk. Furthermore, the data that leaves the room is what has been transparently produced in an open process; what is captured, is openly displayed.

Through the method, prominent *and* seemingly less important features of the physical environment are made visible to reveal their meaning, intention and impact. Recent application of the method from Scandinavian prisons and forensic psychiatric hospitals illustrate and discuss problematic design issues.

Further development of “Sketch and Talk” can contribute to deeper understanding of ethnographical design methods, and improved design for mental health and prisons.

Keywords: ethnographic design methods, ethnographic drawing, design for mental health

## Background

This paper is an initial attempt to reflect over the method development of “Sketch and Talk”, which is nowhere considered set, nor claiming to be new or superior to other methods. The intention of this text is rather an opportunity for a first reflection on ongoing methodological issues, hands on aspects, and ethical dilemmas. It is an investigation of “designerly” ways of receiving useful information as basis for design decisions, especially pointed to open up for a broader and deeper understanding of what it is to experience the physical environment in closed institutions, an under-studied field, which has lately received growing attention.

In newly built hospitals and prisons in Scandinavia the architecture and interior design has been debated in media to be “luxurious” (Gentleman, 2012) feeding a populist debate on the distribution of public resources. However, current research on high secure forensic psychiatric hospitals indicate that the physical environment does have a positive impact on the care provided. This research states that the physical environment, a healing environment, can shorten the length of hospital stay, reduce drug use, lower stress levels and create a safer and calmer milieu. (R. S. Ulrich, 2013; R. S. Ulrich, Bogren, & Lundin, 2012)

Evidence Based Design (EBD), which focuses on design for health care environments, is an established field of knowledge, research and methods in the US, and becoming a popular point of reference in Scandinavian architecture and design for healing environments. Studies in the field of EBD are often cited and have become generalized knowledge. These studies emphasize, among many things, the importance of access to nature, autonomy for the patient, and single-bed rooms (R. Ulrich, Quan, Zimring, Joseph, & Choudhary, 2004). However, research in closed environments carries several ethical and methodological considerations. Research and data production in the field of EBD is essentially based on quantitative methods as surveys and registry studies. However, quantitative studies cannot alone answer questions to how the physical environment is experienced and its meaning to the people that occupy it. A qualitative approach “...is used in the exploration of meanings of social phenomena as experienced by individuals themselves, in their natural context.” (Malterud, 2001) Mixed methods may be used to give a better understanding; qualitative methods can produce knowledge and insights that otherwise risk to be overlooked. Consequently, ethical and methodological considerations articulate a need for a range of qualitative methods when doing research on humans in vulnerable positions, i.e. patients and clients in psychiatric care, jails and prisons. Incarceration produces damage to the individual through “prisonization” and institutionalization (Yngve Hammerlin, 2010). The list of loss and damage is extensive and results in mental and physical health problems as well as negative effects on family and children. From the perspective of humanism, according to government and UN standards (EUROPE, 2006; Nations, 1957 , 2076, 1977), it may be asked if, and how, these damages can be mitigated through design of the physical environment. Though, there is a problem. There is limited knowledge on damage mediated through interior design in closed institutions, and how it is exercised through materiality and physical limitations.

As a practicing product designer I have since five years designed and developed interior products for the above mentioned environments. Institutional environments were not totally unfamiliar to me, since I had designed for elderly care, but it was still unknown terrain. The design brief I got was extensive, and indicated existential questions as well as technical challenges. Terms as “homelike”, “normality” and “non-institutional” were used by architects and hospital staff to describe desired product characteristics. These closed institutions, that were now being replaced by new ones, were focused on security issues and the physical environment was somewhat expected to compensate for damage that high security institutions are known to produce (Yngve Hammerlin, 2010; Sommer, 1974, 1976). However, design for high security environments must consider issues as patient safety, staff

security and vandalizing; features of “hard architecture” (Sommer, 1974). These features address contradictions to qualities addressed in design, such as aesthetics, semantics and function. Though, if desired, design can be used to enhance hardness and correlate solely to security issues without taking consideration to aspects of humanity and known factors from EBD, factors that may produce wellbeing for patients and clients. The dichotomy to design for both wellbeing *and* security is a tricky challenge.

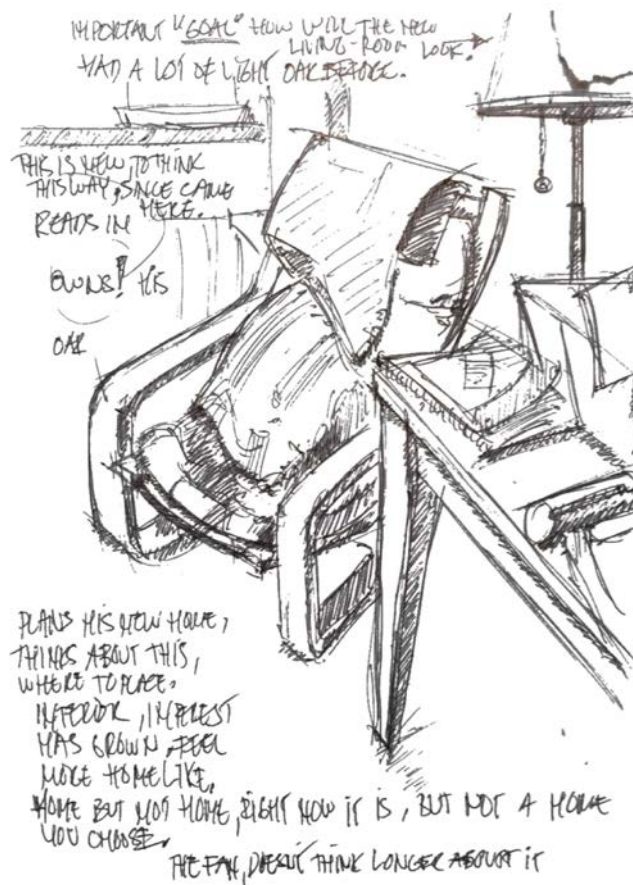
When I designed for closed environments back in 2010 I experienced a lack of knowledge on how to relate to the ethical aspects of incarceration and how ethical questions should be interpreted and become part of the design process. I still have no clear answer, but I was fortunate in 2014 to become a Doctoral student in design, which has given further opportunities to both methodological and ethical issues. The subject of the doctoral project is the physical environment’s impact on people in closed institutions. I now divide my time equally between studies and partner in a design company.

To develop a better understanding of the physical environment’s impact on patients and clients I decided early in my studies to follow architects’ and hospitals’ processes in decision making when designing a new facility. When writing this text, I am still engaged in observing and documenting a Scandinavian forensic psychiatric hospital’s approach to achieving an up to date secure new facility. However, this project would not make much sense without gaining as much understanding and knowledge as possible on what it means to be a patient at this hospital. What started as a prudent request to interview patients in their milieu has grown to become a development of a qualitative method I describe as “Sketch and Talk” that actually had its point of departure at the previous CUMULUS conference in Johannesburg in 2014.

## Method development

*Ethnographic sketching* can be understood as way of studying objects, people and surroundings through visual documentation using pen and paper or other material that mediate drawn lines. It is a well-documented skill that anthropologists, inventors and researchers have used to document findings historically, but rarely in present time. With the introduction of photo and film in the late 19<sup>th</sup> century sketching and drawing appears less. The former methods/tools are often referred to as *visual anthropology*, which also includes ethnographic research using photos and filmed material. The term *graphic anthropology* is commonly used to describe the technique of documenting and producing narratives through the form of a graphic novel (comics).

I suggest that “Sketch and Talk” can be defined as an ethnographic design method, or research method within design. However, it might not yet be necessary to label this ongoing method development, but to reflect upon how design tools can be developed to make sense of what cannot easily be understood.



The activity of sketching raises the level of consciousness to the spatial orientation of objects and the surrounding. “Sketching helps the designer to find unintended consequences...”

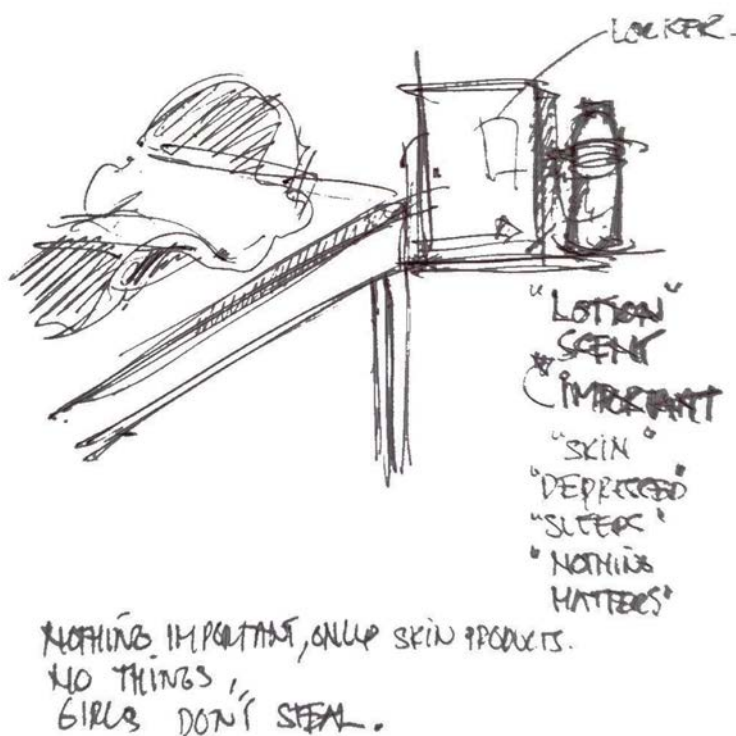
(Cross, 2007). It allows a thorough shared exposition of private space and to zoom in on activities, situations or other phenomena that reveal themselves to be essential. The sketching could be understood as a radar that searches for hidden essentials and

contributes to an understanding of objects and their meaning. An example is how the easy chair in the sketch revealed its symbolic value of hope and future freedom. And transformed itself from a simple and inexpensive piece of furniture in my eyes, to be understood as a supportive companion for its user in the struggle towards a future life outside the institution.

As earlier stated, it has been important for the Ph.D. project to conduct research *in* the environment where clients and patients have their everyday lives and interact with the physical environment, furniture and artifacts since “Conducting research in everyday settings also allows study participants to have access to the people and artifacts that define the activities in which they are engaged as they respond to requests by researchers to describe those activities (note how this contrasts with laboratory settings or interviews conducted away from the locations where the activities of interest occur)” (Blomberg & Karasti, 2012) The everyday settings in research of the physical environment in closed institutions are rarely open for insight, and the voice of their inhabitants seldom heard. “Sketch and Talk” is an attempt to illuminate, mediate and open up for design oriented narratives of the experiences of the physical environment in closed institutions or what Goffman labeled as “total institutions” (Goffman, 1961).

### Initial method development

The starting point of “Sketch and Talk” was in September 2014 when I was given the opportunity to participate in the Johannesburg Cumulus Conference *Design with the Other 90%: Changing the World by Design*. A couple of weeks before the conference I was lucky to get in contact with the research department of Johannesburg Correctional Services and was granted to visit the Johannesburg Prison, a.k.a. “Sun City”.



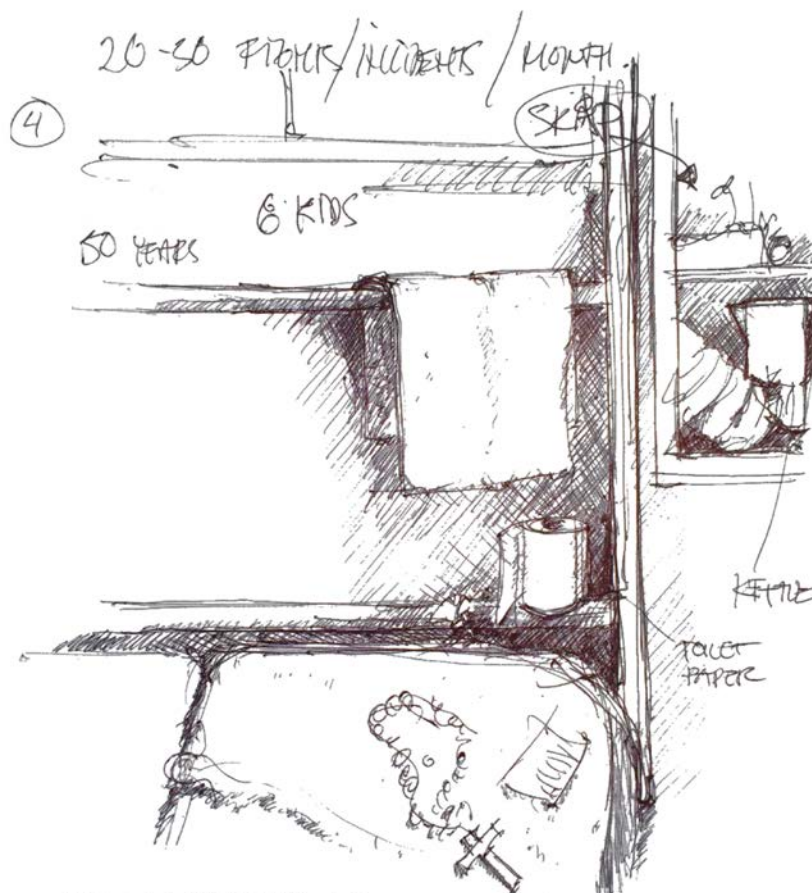
I had requested permission to take photos. However, my request was denied and it was clearly stated to me that recording, photographing or filming was out of the question. When visiting the prison wards I was permitted to bring my sketchbook and a pen, nothing else. As the generosity from staff and inmates provided plenty of time for interviews, sketching and informal talks with both staff and inmates my planned one and a half hour became five. By the end of the day I had eleven sketches.

When I interviewed the inmates I sketched simultaneously as we talked about the interior and objects in the room. The quotes and the content transcribed in real time from the interview surrounded the sketches and framed what had been most important about the inmates narrative. In the interview situation I found that sketching created an active interest and possible point of discussion.

The interviews were unstructured as my visit did not include planned interviews, therefore precluding preparation. The subject, however, was clear and the interviews came to circle around the interior, objects and 'feeling at home'. In all interview situations I asked permission and I assured the respondents that I would anonymize my material.

I found that the respondents were surprisingly willing to share their experience of prison life, even though they sometimes were without answers to my questions. When interviewing a young woman she expressed that nothing of the physical environment was of importance to her, she said that, "nothing matters", and I felt that I would not get any further in the conversation. I then spotted a bottle on a shelf next to her locker and asked her about it. She engaged in the conversation and told me that it was her skin lotion and that it kept her sense of being 'herself'.

Talking to a man of my own age I learned that objects that are specifically valuable in the prison context can be a root to violence. He told me that he spent the day in bed to guard his objects, whereas toilet paper was one of the sought after valuables. They were forty-eight inmates that lived in a crowded room, designed for twenty-four. The men shared one toilet and were given two rolls of toilet paper per week, in total. Fights were common and theft between inmates a cause to the fights.



\*DOUBLE BUNK BED, 2 PUT TOGETHER TO SAVE SPACE  
 TOILET PAPER VALUABLE, THAT'S WHY HE KEEPS IT CLOSE.  
 TURNS TO RIGHT SIDE TO CRY AT NIGHT, HIS WIFE HAS  
 LEFT HIM, CAN'T SEE THE KIDS  
 CIGARETTES CAUSE PICKUPS - ALWAYS STEALING EVEN  
 BREAKING IN TO LOCKER.

Another observation from "Sun City" was the absence of anti-ligature<sup>4</sup> furniture and fittings. According to the officer who guided me through the male section of the prison they would have at most one or two suicides per year. This is low at a prison with 4 500 inmates. These figures may be compared with Norwegian statistics where there were 59 suicides in prison 1990-2007 which is the equivalent of 3-4 per year. (Yngve Hammerlin, 2010). According to the officer that guided me there were two reasons to low suicide rates, one; it is cultural, two; the crowding keeps suicide low.

The experiences from "Sun City" made me realize that I didn't need a camera to document what I had seen, felt and interpreted. The notes and sketches in real time had been produced in the prison; they were now a physical memory of the prison. The sketchbook and the sketching had not been an agent for creating boundaries

between the informant and me, rather something we had shared. This might be a naïve thought considering the power relations in play between a visiting Swedish doctoral student and inmates at a prison, but at its best the sketching may be seen as an agent for communication, distracting from obvious power relations.

After "Sun City" I began field work in Sweden at a forensic psychiatric hospital<sup>7</sup>. I got the same answer there regarding photography as in South Africa and quickly proposed sketching instead, which was accepted by the administration.

<sup>4</sup> Anti-ligature is a term that represents products that resist attempts of self-harm or suicide.

<sup>7</sup> Hereafter referred to as "The Hospital".

## Sketching and Talking at The Hospital

Patients at The Hospital have been assessed as mentally ill at the time of committing a crime and are commonly judged as a risk to society, and/or themselves. The average treatment is five to seven years, but usually never shorter than eighteen months, and there is no maximum time set for their care.

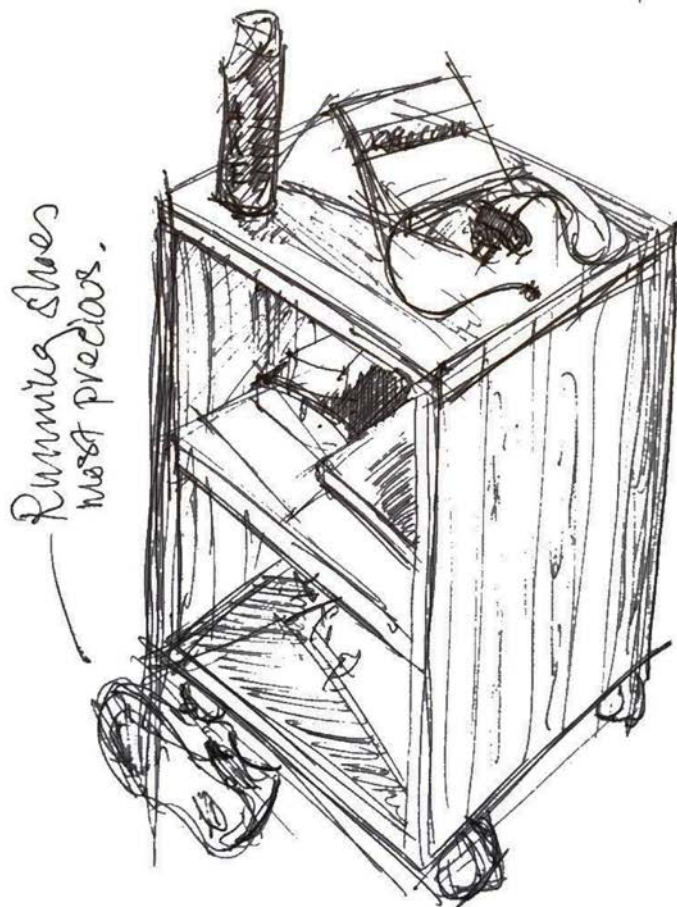
One of the first patients I met, "L", had been in treatment for almost twenty years. He was now in his late forties. The following text was noted at our initial meeting:

*We had already met in the morning, it was easy to pick up again and I said that I would like to see his room, and if we could talk there. He said that he hadn't tidied up his room. I said that's fine, I'm interested in how it is, not how it looks.*

*The room had the same set up as the others rooms. It was furnished with a wardrobe, a security mirror, a laundry basket, a desk, a wooden bed frame with a mattress, an armchair with a padded seat, a shelf above the bed, and a wooden stool. There was also a TV stand with a media storage compartment, a three-story shelf on the wall across from the bed, and window curtains. To this L had added a wardrobe and a worn office chair - the only piece of furniture L claims ownership to.*

*I asked L if he knew what type of wood the furniture was made from. He said he had no idea. I went through each piece of furniture and then he said he could see a difference between two pieces because one was darker. The media storage was the only piece of furniture made*

LIKES SPACE, SHELLS GOOD.  
LIKES THE LAITH IN SCHOOL  
WOULDN'T LIKE TO DO IT HERE. WANTS TO KNOW THAT HIS BACK IS FREE, "COULD GO TO HELL"  
NO THOUGHTS ABOUT A FUTURE HOME.  
WOULD LIKE A SHELF, WIDE WITH A LOT OF SPACE  
AND A DIGITAL FRAME TO KEEP THE FILMS,  
LIKE A PIECE OF FURNITURE, CAN HIDE, CLOST.





*from pine so I asked him if he recognized the kind of wood. L didn't, then he said that he had enjoyed woodcraft at school and helped the teacher once when the teacher had an order to make and deliver. L had enjoyed helping out and he said that he likes spruce, "it smells so good". L started to talk about turning wood and how much he liked doing that at school. (He really livened up at this moment) I asked L if he can't use the lathe at The Hospital's workshop, but L said that he wouldn't like to do that because he wants to know that his back is free, otherwise it, "could go to hell", (meaning that someone could hurt him if he doesn't watch out.)*

*Next time I met L I asked if The Hospital was home to him. He answered immediately, "NO!" and went on, "I'm not going to live here my whole life, and then it will come someone else after me, who thinks something different" [of the physical environment]. "Me, it's important that this is not [home]." I asked how he makes sure that it doesn't become home to him. L said, "It would be stupid of me to make this my home. If you make it into your own home, cozy and nice, then you don't want to move. It costs money to furnish."*

## Admittance

My request to do field work at The Hospital was granted with a wish, but not demand, that I would share my reflections and give advice from a practicing designers point of view. As they were in the process of building a completely new facility they saw me not only as an administrative burden, but also as an opportunity for free expert feedback. Their project leader (PL), whom I had contact with previously through my practice, became the "gatekeeper" (Fangen, 2005) who's importance cannot be underestimated. A gatekeeper not only holds the function of approving the fieldworker to the group of people inside the research area but can also be an important ally to share uncertainties with. In many cases of fieldwork, the fieldworker and the *gatekeeper* develop friendship. This friendship can have two sides, Fangen quotes Öygarden: "The fieldworker's need of a friend should not be underestimated, the friend's need of a fieldworker should not be overestimated". (Fangen, 2005, p. 72) The quote does describe a relevant part of fieldwork. Field researchers are not part of the group that they study, you are invited under special conditions, and in best case are seen as a friendly visitor with a specific quest. When visiting The Hospital I needed to stay overnight, PL offered me to stay with his family, which I gladly accepted. Not only was it positive for my budget and a welcome change of environment to the other house I had stayed alone at, it also gave time to socialize and develop a better understanding of working at The Hospital. In return I have mediated accommodation for PL and family where I live. The exchange of favors has not been an intentional strategy, nevertheless, it gave me an opportunity to repay the offered hospitality.

When I was given admittance to The Hospital I was asked to go through a security introduction and a background check of my criminal record was done. I also signed a security agreement to not distribute any security-classified information. This dedication to security requirements create a rigid frame to do research in. The benefit of these agreements is that it has given me admittance to security classified data such as drawings, surveys and a mock-up room, which has provided a deeper insight into their process. But, the agreement may also regulate what images or data I can publish. So far I have been open with my material and do not see any risk with it remaining so.

## Situational considerations

At forensic psychiatric hospitals and prisons visitors are restricted to visitor's rooms, never to the ward or patients' rooms. I had asked to meet the patients in their rooms since it was

specifically these environments I was interested in. I understood that staff found this odd since client/patient rooms could be messy and that the room functions as part of the patient's rehabilitation where aspects of morality and norms are connected to keeping order and a sanitary environment. Another reason to the skepticism of meeting patients in their private rooms is that the visitor's room can be a safer environment. At a couple occasions institutions have stated that a caretaker shall be present, but commonly I have been alone with the respondent.

## Methodological considerations

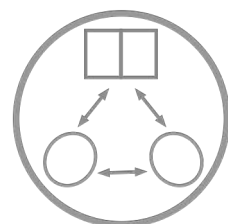
The development of Sketch and Talk has so far focused on developing a method with the aim to produce data of patient/client experience of living in closed environments. Collecting data in high security environments is time consuming and dependent on staff's possibility to aid. The activity of waiting is not unknown to field work. It takes time all together to get to the interview, however, most of this time is not lost time. Plentiful information comes through chit chatting and observations.

If possible it is important to schedule time after an interview for transcription, but not always possible. An interview with transcription takes around three to four hours, not counting the time waiting around or talking to staff. It is time consuming to book interviews, wait for answers and have meetings cancelled on short notice. As a cause of much time spent on field work, it has left little time for methodological consideration of analysis methods. An important aspect to this research and coming dissemination of the material is the under-researched field of patient experience of the physical environment. Therefore, it will be essential to give a rich description of the collected material to elucidate the voice of the participants.

The sketch offers a selective focus on specific objects or phenomena and can exclude surrounding visual clutter. It is an important methodological issue to critically reflect to the subjective data embedded in a sketch. The subject of the sketch is subjectively chosen and it does not render a "true" documentation like the capture of the camera. However, this comparison is not an issue this paper will discuss in depth, nor is it necessary since the idea that a photo is true by nature has been long dismissed. Other methods such as Photovoice can be an alternative method to photo documentation. It gives the respondent/participant ownership of the captured image and brings important democratic and critical issues in play. (Wang, 2001)

The image of the designer, or design researcher, that is commonly communicated in popular media appears to disseminate the idea that a designer is an expert who can judge interior design and tell if it is right or wrong. It is a preconceived idea, but if not paid attention to it may influence the collection of data since the informant can feel less superior and will try to "give the right answers". On the other hand, I have experienced situations where respondents have been eager to share their opinion, for instance of a mock-up room, because they see me as an "expert", and an ally, who does not represent the hospital and whom they can confess to and give their personal opinion. When interviewing "XY"; I asked if he felt at home in his new room. He answered that, "We are not at *home*, it is apparent!" This type of answer is on one hand simple and short, on the other hand it contains values and implicit feelings that likely would not have been communicated through traditional quantitative methods such as surveys or structured interviews.

In the situation of talking and sketching where there is mutual focus on an object, it not only situates the object spatially, it also situates the researcher and respondent in relation to the object *and* to each



other. The researcher is not the center of the sketching, nor is the respondent. We both agree to the situational understanding/construction of space and interrelation where the object is central.

## Technical Tools

Pen and paper are uncomplicated and reliable tools for visualizing, communicating ideas, and documentation. Personally, I still find sketching to be a functional tool at meetings and in my work as a professional. An advantage at meetings, even if I do use the computer on and off, is that the attention to the other participants is displayed through the active notification in a sketch book, and will not be mistaken for reading e-mails or using social media. In other words, notification and sketching that is openly displayed can show engagement in the other.

The specific tools used when documenting have been the Whitelines Link notebook and commonly a Pilot G-Tec pen. This may be considered to be “nerd information”, however, it does have an impact on the result and have been a subject of conversation several times. The sketches have been scanned using a cell phone and the Whitelines app which scans the page automatically when it detects printed corner symbols. The positive side of using the application is the simplicity it affords for quick digital storage (which has saved data from being lost) and removal of the sketchbook’s grey background and white lines, the Whitelines concept. The downside is that the application settings provide poor contrast and resolution. Nevertheless, I have so far found these tools helpful and smooth to use.

## Ethical considerations

When I have met respondents in their rooms I have tried to be aware that I invade primary territory which can be defined as a person’s home or living space. In this situation there has been an unfamiliarity to the informant’s boundaries of “personal space”, “...an area with invisible boundaries surrounding a person’s body into which intruders may not come” (Sommer, 1969), which calls for caution due to the risk of exercising power by neglecting these boundaries. However, I have found that this can be reflected upon together with the informant and overcome rather early to be able to proceed, or otherwise there is a risk of not connecting. Interviewing the same person in the same room a number of times has advantages since we both learn how to relate to personal space and can modify spatial and relational positions, and then reflect upon these positions.

In the context of The Hospital I have been referred to as “the researcher”. This says something about how I am perceived and that the persons who I met may not have a similar academic position. However, in many situations respondents have been eager to share their own experience from academic studies or ideas of future studies. Fangen points out the importance of self-reflection that structural differences between the researcher and the informant have an impact on data. (Fangen, 2005).

In closed institutions social life is limited to a group of people that the patient/client has not chosen to socialize with, hence a visit and an interview with a researcher can break up monotonous life. One respondent recently said that she was happy to help with research because she sees the researcher as a “temporary friend”.

Respondents who I met at The Hospital did so voluntarily. Prior to the interview respondents at The Hospital were informed that the interview was to be about the physical environment and nothing else. I also informed them that the material would be translated to English, making it more difficult to identify them. Any information on why the respondent was

incarcerated or on his or her medical status has intentionally been left out. The respondents were informed that they could stop the interview at any time and that the data was to be used for the doctoral project. The interviews at “Sun City” were not planned which gave the respondents short time to reflect upon participation. Some inmates declined.

### **Further development of “Sketch and Talk”**

In closed environments that afford few opportunities to express personal identity and create a space of belonging it is important to recognize the strong symbolic values embedded in objects and furniture. In society outside institutions, these may be the objects that create a *home* and thus express the identity of the homeowner. Qualitative methods such as “Sketch and Talk” that can contribute to further research on the impact of the physical environment are an important contribution, not only to the growing field of evidence based design methods but to design methods in general. “Sketch and Talk” will be further developed in an upcoming research project concerning adolescents’ experience of the physical environment in secure youth care.

## References

- Blomberg, J., & Karasti, H. (2012). *Positioning ethnography within Participatory Design*. New York: Routledge.
- Cross, N. (2007). *Designerly ways of knowing*. Basel: Birkhäuser.
- European Prison Rules, Rec(2006)2 C.F.R. (2006).
- Fangen, K. (2005). *Deltagande observation*: Liber AB.
- Gentleman, A. (2012, May 18 2012). Inside Halden, the most humane prison in the world. *The Guardian*. Retrieved from <http://www.theguardian.com/society/2012/may/18/halden-most-humane-prison-in-world>
- Goffman, E. (1961). *Asylums: essays on the social situation of mental patients and other inmates*. New York
- Hammerlin, Y. (2010). Å bryte livet i fengsel. *Tidskriften Suicidologi*, årg 15( nr 2).
- Hammerlin, Y. (2010). Samfunnets og hverdagslivets lidelseproduksjon og selvmordsproblematikken. *Suicidologi*, 15(2), 30-36.
- Malterud, K. (2001). Qualitative research: standards, challenges, and guidelines. *Lancet*, 358(9280), 483-488. doi:Doi 10.1016/S0140-6736(01)05627-6
- Standard Minimum Rules for the Treatment of Prisoners, (1957 , 2076, 1977).
- Sommer, R. (1969). *Personal Space: The Behavioral Basis of Design*
- Sommer, R. (1974). *TIGHT SPACES Hard Architecture and How to Humanize It*: Prentice-Hall, Inc.
- Sommer, R. (1976). *The End of Imprisonment*: Oxford University Press, Inc. .
- Ulrich, R., Quan, X., Zimring, C., Joseph, A., & Choudhary, R. (2004). *The Role of the Physical Environment in the Hospital of the 21st Century: A Once-in-a-Lifetime Opportunity*. Retrieved from Report to The Center for Health Design for the Designing the 21st Century Hospital Project.:
- Ulrich, R. S. (2013, JAN. 11). Designing for Calm. *The New York Times*. Retrieved from [http://www.nytimes.com/2013/01/13/opinion/sunday/building-a-space-for-calm.html?\\_r=1&](http://www.nytimes.com/2013/01/13/opinion/sunday/building-a-space-for-calm.html?_r=1&)
- Ulrich, R. S., Bogren, L., & Lundin, S. (2012). *Toward a design theory for reducing aggression in psychiatric facilities*. Paper presented at the ARCH 12: Architecture/RESEARCH/CARE/HEALTH, GOTHENBURG, CHALMERS.
- Wang, C. C. (2001). Photovoice Ethics: Perspectives from Flint Photovoice. *Health Education & Behavior*, Vol. 28(5), 560-572.