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Main Article:

Playful Collaborative Exploration: New Research Practice in Participatory Design

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Abstract

Within the Participatory Design community as well as the Computer Supported Cooperative Work tradition, a lot of effort has been put into the question of letting field studies inform design. In this paper, we describe how game-like approaches can be used as a way of exploring a practice from a design point of view. Thinking of ethnographic fieldwork as a base for sketching, rather than descriptions, creates openness that invites collaborative authoring. The concept of playful collaborative exploration suggests certain ways of interacting with material from field studies so that it becomes a design material for an open-ended design process. We have carried out field studies, transformed the field material into design material, and set up a design game for working with it together with the people we followed in the field. The design game builds on an idea about the power of narratives and the benefits of constraining rules. We believe that this framework for collaboration opens for playfulness, experimentation, and new design ideas.

1. Introduction

In this paper we will present how playfulness and games can be used as a way of doing design based on field studies. Rather than aiming at correct descriptions of practice, we try to set up situations that are open enough for viewing practice from different angles. The openness is twofold; first, it allows that same situation can be interpreted differently by different participants; second, the openness allows to interpret an existing situation to be different in the future. The way of working in what is described here springs out of a group of design researchers working with developing environments for inspirational learning for design students. The design group was familiar with how the students work. As a starting point for design, we chose to start by doing a field study from which we created design material to start exploring the existing practice of the students and possibilities of changing that practice. In this process, exploration and change happened in an interwoven process. We will describe what we have experienced as beneficial with *playing around with ethnography*. This concept addresses how ethnographic methods can inspire and strengthen the contextual understanding needed by the interaction designer. The young discipline of *interaction design* borrows heavily from other disciplines when it comes to methodology, which is quite fine and pragmatically motivated, but can at times suggest new uses of established methods.

The making of digital artifacts or instantiations of interaction design, of necessity, concerns a very rich interplay, in where scientific inquiries are troublesome but important. Industrial designer Klaus Krippendorf (1995) makes some important points on a discourse of design:

- A design discourse does not rest upon facts, but is pro-active
- Design concerns the meanings an artifact can acquire in use, rather than by itself
- A design discourse must be defined on its own, from within the design community

The last point requires a clarification. A design discourse will always be dependent on the languaging of others, such as clients, users, other stakeholders, or other academic disciplines. So collaborative skills are highly needed; but at the same time designers must take responsibility for developing a meaningful language for design that does not merely "serve the discourses of others" (Krippendorff, 1995, p. 161).

These points are part of why the relation between design and research is often awkward. Design is *pro-searching* more than researching. Our understanding is of a *second order*, in the sense that it is not the designer's appreciation of artifacts that matters but the users' (an understanding of an understanding). Ideas from other fields can help, but can also bring in parasitic paradigms into the discourse. One example of that is the fascination for measurability, which has heavily influenced the Human Computer Interaction (HCI) tradition. The concept of pro-searching is close to that of design instantiation. Pro-searching aims at change, not on correct descriptions of the already existing. It does

include fieldwork and contextual understanding, concurrent design, user collaboration, and evaluation of use in a homogenous process.

The confusing boundary between theory and practice is another issue that distorts design's relation to science and the question of *making*. It is often claimed that practitioners seek knowledge to act rational, while scientists act rational to gain knowledge. The difference between theory and practice seems natural for us, but exploring the origin of the concepts reveals some problems. While Aristotle used the term *techne* for the intentional act and *phronesis* for the knowledge or wisdom that was a goal in itself, *praxis* (to act) was actually a matter of ethics. *Techne* lingers on in the word technology, but originally housed the fine arts as well. This discussion, as put forth by Liedman (1999), is not merely cultural curiosity, but has affected the scientific tradition and the scientific requirement on knowledge production. Whatever model of knowledge production we prefer, it is obvious that the designer has another agenda, different from that of both the natural and the social scientist.

Social aspects of computer technology, during the last few decades, have become a growing field of exploration. During the 1980s, HCI focused on "use qualities," and developed techniques for evaluating computer systems from a cognitive perspective. The ideas were strong, and the techniques have been progressively developed. In the mid-1980s, the interest for collaborative work grew and sociologists and anthropologists entered the field. It was within the Computer Supported Cooperative Work (CSCW) tradition that sociologists and anthropologists came to have the strongest impact (see Plowman et al., 1995, for an overview and critique). The ethnography that has been the most influential one, is what has been called "ethnography informed by ethnomethodology," a specific branch within sociology. Ethnomethodology is concerned with the methods that members of a specific group use to make sense of, and act according to, their practice.

The HCI approach was criticized for not considering social dynamics. Numerous field studies have been carried out and reported, all advocating the need for considering social aspects. These studies, on the other hand, have often been criticized for not contributing to the design projects, a criticism that might seem unfair. The CSCW ethnographers are often good at doing studies, but are not trained to do design. On the other hand, designers are not trained for understanding work practices, and voices have been raised for making use of specialists in this area. Setting up a debate, Shapiro writes, "It seems odd to impose the entire responsibility for the redesign of the work on systems designers while those whose specialty is supposed to be the analysis of work run for cover" (Shapiro, 1994, p. 421). The argument appears to be reasonable, but the CSCW community seems to have reached a deadlock.

2. Our Approach

In this paper, we have taken a designers' perspective on what ethnography can contribute. Designing is to go into a dialogue with the design situation, something typically done by

different ways of sketching. What we have done is to engage in a field study of interaction design students' practices, as a first step in an attempt to augment those practices through pervasive computing technology. In the research team, we have experience with traditional CSCW ethnography (informed by ethnomethodology), but now we deliberately chose to use the field study to create design material. The idea being that *video snippets* from the field study could be used as sketching material in collaborative design sessions where designers (from the research team) and the future users (the students we were designing for) could build future scenarios together.

We carried out the field study and made a first selection of video snippets to work with. We used the snippets within the research team as a way of making initial categories (identifying interesting aspects). The result of the internal workshop, initiated a second selection of video snippets that we used together with the students.

3. The Game

Starting from the assumption that the way one works directly affects the end result, we have worked very deliberately with ways of doing design work, both in education and in our own research. In this section, our process will be described in detail. The Atelier IST project (IST-2001-33064 Atelier--Architecture and Technologies for Inspirational Learning Environments http://atelier.k3.mah.se/home/) has focused on participation and work practice based design. At a time when computational possibilities are leaving the screens and keyboards, design work must adjust to the fact that technologies are mixing, becoming both spatial and virtual (Binder et al., 2004).

Contemporary designers have learnt to work collaboratively and across disciplines. Parallel to this another, perhaps more radical, alternative strives to abandon design as problem-solving and rather turns to an open-ended design process in which the exploration of the design space leads to the outcome of the design process. Taking an interest in students' actual praxis, we have done fieldwork on student assignments, from introduction to final presentation. The fieldwork has been carried out in the mode of *participant inquiry*. With video and still cameras, we have documented a large part of what the students have done during these weeks. When the students did their field visits, we followed them. Our role became partly as more experienced designers and partly as observers.

From our field study, we made a first selection of *interesting occurrences*. We picked out approximately 15 short video snippets and 10 stills that showed something that we thought could be interesting to examine. We created plastic cards for each of the video snippets and for each still image. Each card functions as a placeholder for a photo or a video snippet and, when discussing the photos or videos, the card can be a reminder. The cards were augmented with Radio Frequency ID (RFID) tags that maintained correspondence with the videos and images. By placing the card on a tag reader, as seen in Figure 1, the media were displayed in a large projection that could be seen by all participants.

Figure 1. Left: a plastic card; right: the card is placed on the tag reader which then plays the digital media in a large projection that can be viewed by everyone.

Using video as design material, or in games, has been explored in several writings. Buur, Binder, and Brandt give us some examples of how it is possible to do "design in video." They exemplify with video portraits, improvised scenarios, and a video card game. The use of video as reflecting material is a way of "maintaining reference to the context" (Buur, Binder, & Brandt, 2000, p. 28). Buur and Søndergaard developed a video card game that is a "sense-making" exercise where a design group works with a large amount of short video snippets, each snippet represented by a paper card with a key frame from the video. Categories grow out of the material and the group arranges the cards to frame design problems (Buur & Søndergaard, 2000). Johansson and colleagues (Johansson, Fröst, Brandt, Binder, & Messeter, 2002) used a design gaming approach to facilitate collaboration among several stakeholders. In this paper, our focus is on how the open ended nature of the games forms a basis for collaborative analysis that offers an opportunity for merging ethnography and design.

The video snippets (and the cards) also play a role as communication devices. Since interaction design most often evolves in cross-disciplinary teams, the issue of setting up situations for communication across inter-disciplinary boundaries is highly important. From this perspective, the video snippets (and the cards) also play a role as communication devices and mediators. In the process of playing the game (as described in the paragraph below), the cards became more than *mere representations* for the stills and video snippets; they also became the carrier of the discussions involving those stills and videos. Leigh Star coins this kind of objects as *boundary objects* (Star, 1989). The concept of boundary objects can be said to include any kinds of object which facilitate the growing of a shared understanding for participants coming from different communities. The boundary objects can be interpreted differently, depending on each participant's background. In confronting and discussing the differences, a shared understanding is formed. Henderson has similar ideas on *conscription devices* (Henderson, 1999).

We invited the interaction design students, whom we had been following, for a workshop. Our intention was to give them a chance to tell their stories of how they work and collaboratively sketch how it could be different. The workshop was arranged around an *exploratory design game*. The game we played was an associative one, portraying situations, feelings, or other things that had become important in the work. The game has no winner. The goal is to investigate and negotiate images of what happened. It follows

the structure of an ordinary card game, played for fun. The participants are each dealt some cards, and play their cards in turn. The cards are laid on the table as the common design material for exploration, framing an evolving theme. While the media attached to the cards were from the mentioned project; the player is free to interpret them in any way they want. In the first round, all cards are placed on the reader; the content is thus displayed. The first player places a card on the table and gives a tentative title to the story that is to be built. The second player will also play one card and continue the story. A player can also pass, just as in poker, if he or she feels uncomfortable with the story or if his cards do not match. After the second player, the third continues and so on. The game is played until there is a story on the table that the group feels is valid. There can only be four cards in a story; when the fifth player wants to add something, he or she has to choose one card to be removed. The rule is that one needs a good argument for changing the story, and it should add something new. When no more changes are done, the group tries to find a new or refined heading for the story. Each round is completed with a debriefing session where all participants write post-it notes, as can be seen in Figure 2, that comment the story.

Figure 2. Left: cards laid out which eventually forms a commented story; right: illustration of a commented story

An individual researcher or a small group of the research team has done much of the fieldwork. In an ambition to establish a collaborative design process, with participants being equal, rather than working with ethnographic descriptions as an input to design processes, we strive to impose the ethnographic perspective into the design work. Instead of having ethnographers interpreting and offering understanding and/or "implications for design", we involved a larger design group in exploring the ethnographic material, and using this material to explore the present to see how it could be different. The games were played both internally in the research group (see Figure 3) and together with the students that were both the *object* of our studies and future *users*. The design games we have been working with have rules that are explicit from the beginning; if the rules are to be changed, it has to be discussed as a part of the game. In this way we carefully started to frame the design situation and impose our order to it. In the process of exploring the practice, we started to sketch how the practice could be different, when we introduce technology to support the students and their learning. The exploration and the evolution of design ideas were interwoven in a collaborative process.

Figure 3. In an internal workshop, the research group looked into material from the field study. The large projection in the background displays the digital media attached to the cards.

4. A Game of Playfulness

Descriptions of practice tend to be rigid and respectful of the scientific demand for stringency in the use of language. The achieved clarity can be viewed as a sincere respect for the users and their working conditions. But *ambiguity* can well be used in a respectful way that invites different perspectives. As an alternative in design, Gaver and colleagues reflect on how "contextual ambiguity can question the discourses surrounding technological genres, allowing people to expand, bridge, or reject them as they see fit" (Gaver, Beaver, & Benford, 2003, p. 237).

Descriptions of space in a physical sense only rarely matter for design. The spatial layout of a site is of course of importance, but even more so are the activities taking place there. Paul Dourish (2001) uses the distinction between *space* and *place* to distinguish what is really happening in an environment. What constitutes place is a complex totality of social engagement with other people, use of artifacts, information, and *lived experience* that is hard to pinpoint. One can view place as *experienced space*. Design is a process of both recognizing and transforming place. But place is a qualitative phenomena more than quantitative. The phenomenological tradition gives us some tools to approach everyday life by returning to concrete things and occurrences rather than abstractions describing them. Bread on a table is not just a meal--it is also the hands weary of a full day's work dropping the knife, the children telling stories from school, the remembrance of youth in the taste of an old-time recipe, and so forth. This richness is hard to generalize in descriptive language since it includes *variance* and *paradoxes* as foundational parameters. Our everyday *life-world*, just as work practice, consists of this concreteness that falls between the pure *objects of science*. Understanding place calls for collecting the paradoxes and complexity of life-worlds, rather than unifying them in abstractions.

The concept of playful collaborative exploration suggests certain ways of interacting with field material that do not constrain analysis in a search for objectified knowledge on user activities. Instead, the ambiguous nature nourishes a *dialogue* between different actors in the design process. Design can be to create *fantasy worlds* (worlds of hypotheses) where designers experiment with ideas and concepts as chemists in a laboratory. The design game we created draws upon the studies of practice and places them in what we call the *design lab*. Donald Schön (1983) has described the way architects work and Louis Buccairelli (1994) have done the same within Design Engineering. Schön writes about "design worlds," describing how sketches talk back and how a conversation with the design situation is established with the sketch. Buccairelli (1994) writes about "object worlds" as both the physical place where design work takes place and as the mental images that designers create. In collaborative design processes, the search for meaning is a large part of discussions and negotiations. The design lab is a place for the fantasy world, and the design game is the structure. This place allows experiments, mistakes, poorly developed ideas, and so on. The rhetoric of such experimentation is typical in the very nature of playing. "The most fundamental experimental question is, 'What if?'" (Schön, 1983, p. 145)--a question that open up alternative views on how things can be explained.

The games are set up to facilitate imaginary situations that complement reflective understanding of practice. They do so by introducing a playfulness that follows from the non-constraining use of language. The use of games as mediating tools in participatory design processes has been explored, for example, by Ehn and Sjögren. They argue against correctness of descriptions and focus on how linguistic artifacts are used rather than what they state to be true (Ehn & Sjögren, 1991). The argument is in line with how Wittgenstein (1953) developed his view on philosophical inquiry: starting from a view of language as depicting reality, he moved on to a focus on how it is used in context. His idea of *language games* is close to how design games can form foundations for collaborative exploration. Meaning arises not in how exactly a statement is formulated, but rather by the intertwining of different voices that shapes language in the specific situation.

In this sequence, the player Si lays a card depicting the studio the day after a major clean up. While the story is about the changing nature of the studio, he has no definite analysis ready at hand, but he 'tries the card out' and the thread is picked up by Th, another player. An utterance like, 'I'm not quite sure what that means,' is far from the stringency most often displayed in scientific reports. Instead it is the way the meaning of the card evolves by the engagement of several actors that is important. By laying out the card, he is pushing the story without prompting analytical excellence--he is playing around with 'truth.'

The goal of the game is to tell good stories about practice and not to achieve an ultimate description. Narrative styles of analysis of ethnographic studies are a discipline of inquiry

Transcript E

Si: The day after the cleaning it looked just as before the cleaning. **I am not sure what that means, actually...**
Th: We discussed it quite a lot actually, after the project ended. That it was like a kitchen. In a kitchen, when you cook, it is always messy, and you need to clean up, but just as you cleaned you start over again. You do not clean to make it clean but to create the possibility to make something new. And we thought that it perhaps is an image of why you had to clean up.

NB: The transcript snippets appear thematically in the text, to provide the opportunity for the reader to recreate the chronology; the transcript label represents the actual order.

in itself, which will not be thoroughly reflected here. Howard Becker (1998) advocates asking 'how' rather than 'why.' While 'why' seems to prompt for answers without logical inconsistencies, 'how' encourages a more straightforward storytelling. This makes part of the playfulness that eases up participatory design processes.

So far, many spectacular methods for inquiry and collaboration have been explored, inspired by domains other than science. Much attention has been given to the concept of *cultural probes* developed by Gaver and colleagues. They transformed the situationist movement's use of *psycho-geographical maps* into a package of devices for *self-recording*. These were handed over to the users, who made different annotations and recordings, in quite playful forms, which were then returned to the design team. The designers viewed the collected material as *inspiration* rather than information (Gaver, Dunne, & Pacenti, 1999).

Other art movements have generated similar speculative methods for collaboration in the form of games taking place during face-to-face interaction. Originating from the idea of *autonomous writing*, the surrealists borrowed methods from academic disciplines such as sociology, anthropology, and psychology to elaborate methods in the form of games for exploring the mechanism of imagination and intensifying collaborative experience. They subverted academic modes of inquiry to undermine rationality and invented playful procedures to release collaborative creativity (Gooding & Brootchie, 1991). An example is the game of *Exquisite Corps*, which made use of open-ended fragments. Drawings were made on a piece of paper that were folded in a way that showed only a part of the drawing and the next player continued the drawing on basis of what he could see and then passed it on to the next player in a similar way.

The open-ended nature of the cards in our game makes interpretation complex, but at the same time, it is also a strength. The cards are representational artifacts and they do carry a portion of evidential content. Augmentation of the cards is crucial. They are not symbolic game pieces, but before being placed on the table and into the story, the content (video

clips, still images) must be displayed to everyone in the game. But they are not stereotyped statements; rather they are placeholders for different voices and trying to create situations where different perspectives can meet. The mesh of different professional, social, or ideological perspectives and interests is typical for design processes. Many professionals and researchers (Saunders & Dandavate, 1999; Star, 1989) have made interesting work on different methods for using objects as mediators in participatory design processes. It is not only a question of blending the different perspectives, but also to create a situation where the participants can step in and out of their own perspective. While watching the media, participants can immerse in their memories of the occurrences. As the conversation continues, they can reflect on what has been viewed from what has been coined as an *analytical distance* (Karasti, 2001). At the core of the game is to try to build on visions of the others. The final story lies ahead and must be negotiated.

The collaborative nature of the storytelling allows different stories being told on the actual observations, while not going off in any one direction. As the game succeeds, the group narrows down to a version of the story. The rule that says that some cards can be exchanged at the end of the story increases the experimental space.

In Transcript C, the use of different material in the studio is being discussed. Player Be thinks that she is not adding anything to the previous cards; but she is encouraged by the others in two aspects. Player Ol affirms that this is something different to her and player Fr, who now has got a good knack of the rules, reminds that what is being played can be changed later.

Transcript C

Be: I am not really sure how I should take this story further. I am just confirming this. I am saying the same thing as the previous. We have seen this one, where Richard was illuminated. It is a bit of the feeling, new material... How do we do it? What do we do? I mean the experimental state. Just as the tags on the previous picture, so it is not taking the story much further.
Ol: Yes it does, it says something else, doesn't it?
Fr: Otherwise we will take it away [later].

The hybrid nature of the cards makes an interesting prop or boundary object. The physical side of the card acts as gesture. Many observations were made on how the cards are fingered while thinking, waived while articulating, turned towards a specific player while exchanging arguments, and so on. They also form physical nodes in the hypertext that can evolve in the game, something that persists in the room and can be manipulated to have other meanings. The virtual content grounds the storytelling. One can test its

meaning out, while any player can argue about the content. So while being representational of practice they are still subject for structural change.

Lucy Suchman (1995) writes that the creation of representations of work is always normative, and does create stereotypes. She makes an important point in stressing that maps and representations are created from a specific location. Field data not only carries a lot of noise in themselves, but the selective way in which it is merged into mappings can never be free from value and interpretation. In collaborative design, it is the design participants that need access to the field material. Those who are expert readers of field material within other traditions are not per se good readers for a design project. Reading field material, for the purpose of design, needs the perspective and attention to details ethnographers have developed. The design game we developed tries to create the preconditions for this, as described in the following section.

5. Rules of Freedom

We now describe in some detail how we set up the (pre)conditions for the playful collaborative exploration we are arguing for. The focus of this paper is on the relation between field studies and design, a relation that, if wanted, has to be created.

Doing design and playing games have many similarities. Using design games as a way of setting up a design process helps one choose what to focus on. Habraken and Gross (1987) made a report about a number of "concept design games" they had developed. The games were used as a tool for research in designing built environments, the aim being to improve the working of design communities, designing buildings and urban environments. By observing the games being played, they studied how designers manipulate and transform artifacts during a design process while negotiating agreements and rules about how to go about their work. By developing a set of games, Habraken and Gross managed to isolate and focus on "single aspects, each giving a clearer picture of what just some of designing is about" (1987, p. 1-2 - 1-3).

In our work, we have picked up on the gaming idea, and created a set of design games that helped focus on certain aspects (Johansson, 2005). Our ambition is not to study design, but to impose preconditions that (i) set a perspective on designing and (ii) create a ground for collaborative design work. Here we illustrate how an exploration of a design domain could be carried out as a game. In the following example, we can see how the cards are given meaning by the participants.

From the look of it, Ja made his selection of a card, based on the label (see Transcript A). The next card was also chosen from the text written on it. Fr finds that he expected one thing from the video connected to the card, but finds that the content was something else (see Transcript B).

Transcript A

Ja: I have a good beginning. First I want to see what it is... It is the first day.
Be: The first day
Thomas: Did it look like this?
Ja: Yes, the first day when we did not knew what we should do.
Be: I can't remember that it looked like this. Yes, this was the first day when you presented. Then we still had a great distance to the room, still.
Th: So what is the story?
Ja: The story is... before we knew anything. When we were to find out what we should do, this became an introductive state; and from this it was shaped further.

Transcript B

Fr: Now I followed the headline on this, ehh. Aha it was that... It was not at all the same meaning that I...
Th: But you are allowed to interpret it.
Fr: Yes... What I read from the headline here "everybody looks, no one sees." It was a bit more like in the beginning. Everybody looks but no one sees any connection, but it was not like that. It was about...
Be: But it is something with that with insecurity with the material.
Fr: And something with uncertainty in the beginning.

Transcripts A and B are collected from the beginning of a game session. The first two players start with the headlines of the cards (in Transcript A, "the first day" and in Transcript B, "everybody looks, no one sees"). In Transcript B, the person that chose the card realizes while looking at the video snippet that the clip is about something else than he thought, the group then rearranges the story. The situation and the openness of the interpretation allow other participants to take part in the exploration (as in Transcript B). The outcome of the "everybody looks, no one sees" card is a combination of what the card says and what the group remembers from the beginning of their project.

To use games like the one described here is a way of driving the exploration as well as the design process. It sets the rules for how to collaborate, and for how a *theme* is established. But it is also a process that can evoke resistance from the participants. If you want to say something that lasts, it has to be said with the video card, and need to be related to the actual video; including something new is an act of negotiation. If a new aspect of a theme is introduced, it starts new discussions. We could that the setup with physical representations makes the participants continuously connect back to earlier discussions, pointing at stories created previously and referring back to earlier discussions about a card. Using games is a way for us to set up the rules, and we use this to open for collaboration and to lessen the power differences between people. We found that we did not have to concentrate so much on procedures once the game was underway.

The exploration that we suggest here has its basis in design work and in making changes. In comparison to more descriptive explorative practices, such as Interaction Analysis (Jordan & Henderson, 1995), this approach is more open in the sense that practitioners can bring experiences that are not immediately visible in the video snippets or the stills. This approach does encourage multiple interpretations to broaden the view of the practice explored, whilst more descriptive traditions tend aim at creating one account. The purpose of the exploration is different, what designers have acknowledged as the "turn to the social" (Grudin, 1990). There is no striving to describe anything but rather to create a starting point for grounded design work. We want to adopt the turn to the social as a perspective with a "flair for practice" (Johansson, 2005) brought into the design process. The perspective is represented by a way of working, assuming relevance of the video material and still photos from the study, and sensitivity for what we can learn from the material.

The role of the game facilitator becomes visible in the next transcript. In Transcript D, Be comments on Ol's move, by saying, "to take over the room." Being the facilitator, Th repeats this statement and continues, "that is rather good"; later he also refers back to what Be said (in Transcript A) by stating, "I can't recognize it [the room] either." This way of repeating what he finds important helps the group connect with what has been said and the emerging theme of the story.

Transcript A

Ja: I have a good beginning. First I want to see what it is... It is the first day.
Be: The first day
Th: Did it look like this?
Ja: Yes, the first day when we did not knew what we should do.
Be: I can't remember that it looked like this. Yes, this was the first day when you presented. Then we still had a great distance to the room, still.
Th: So what is the story?
Ja: The story is... before we knew anything. When we were to find out what we should do, this became an introductive state; and from this it was shaped further.

Transcript D

Ol: Here it has begun.
Be: To take over the room.
Ol: Yes, exactly; to get to know the material, somehow.
Fr: You could exchange the one I put out.
Th: You could see it like this, if you take these two as extremes. "To take over the room" that is rather good... I would also say when I look at this (pointing at the card Ja put out) I can't recognize it either.

Th who acts as the game facilitator tries to open up the interpretation and suggests another look at the card (the media) by asking, "Did it look like this?" and later "So what is the story?" (in Transcript A). The facilitator's role is about making the participants look thoroughly at the material and make them articulate what they are thinking. At the same time, he summarizes what has been said so far. The facilitator has to balance between running the game and letting the participants have control. The game is set up so that no single participant can dominate the story. However, one's own ideas can be seductive; and every now and then someone is pushing an idea hard.

In this design game session, one of the participants started the round and wanted to keep the theme he had initiated. The first thing that happens in the game is that Ja puts forward a card with the label "the first day" (as shown in Transcript A). By this Ja suggests a chronology. At the end of the round, Ja still thinks of this game as a chronology when he presents an ending following the actual process.

Transcript J

Ja: I am going to ruin this a little. I take this one. It was the last day, so this was about what we could accomplish.

Ja, who starts the game, has a considerable impact on which way the game goes; still he is not in control of the story. In Transcript J, he tries to bring the story back to where he started it, but the story is already concretized, by this time. Too much has been said, and an interesting aspect has grown out of it.

At other occasions, the game facilitator has stopped the game, saying "Wouldn't it be a pity to ruin this story?" and that could very well have been said here too. However the group had such strong consensus of what the story was about that it perhaps was not necessary. The structure of the design game becomes a part of the design material, as a collaborative sketch.

Schön and Wiggins stress the importance of the medium in the design process. Design artifacts, such as the sketch, reflect design "moves" so that designers can see the consequences (intended as well as unintended) the move generates (Schön & Wiggins, 1992).

The design game is a way of building stories. The format is a durable and available sketch. The process is one of co-authoring and the stories are owned collectively. The

material is the narrative physically represented by the plastic cards and the media it links to. The material of the design game can be viewed as an alternative way of making sketches. Video is engaging and a highly participative medium and, therefore, it has great value when used in collaborative design sessions. Material that comes out of a field study helps the designers relate to the context they are designing for. The plastic cards are tangible, easily available, and easy to manipulate.

6. Conclusion

In this paper we have presented the idea of using games as a structure for playful exploration of field material for design purposes. As a contrast to most of the work done to inform design with ethnography, we have studied participatory exploration done in design sessions. Placing our approach between the ethnographer that creates a detailed description but "runs for cover" and the more artistic approaches that let their material from an inquiry serve only as a source of inspiration, we have found a balance between grounding design work in existing practice and creating the necessary distance from the material. We describe a design process that is exploratory, rather than problem-oriented. This alters what is useful and results in ways of working that differ from the more descriptive inquiry approaches. We are searching for possible future practices; what we need is vignettes that can say something about how things are done and which can be give us the building blocks to create stories. The story becomes a sketching material, with which we can carry out experiments.

The design game and the rules are a way of getting structure in the collaborative design work. The plastic cards have the function as placeholders and mediating objects. Since they are augmented and carry links to digital media, which can be immediately played and viewed collaboratively, the actual field recordings have a strong presence in the game. Story creation is central to our design game; and the co-authoring process is fun while it broadens the perspectives.

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References

Becker, H. S. (1998). *Tricks of the trade: How to think about your research while you're doing it*. Chicago, IL: The University of Chicago Press.

Bucciarelli, L. L. (1994). *Designing engineers*. Cambridge, MA: MIT Press.

Binder, T., Michelis, G. de, Gervautz, M., Jacucci, G., Matkovic, K., Psik, T., & Wagner, I. (2004). Supporting configurability in a mixed-media environment for design students. *Personal Ubiquitous Computing*, 8(5), 310-325.

Buur, J., Binder, T., & Brandt, E. (2000). Taking video beyond 'hard data' in user centered design (Paper presented at participatory design conference, 2000, New York.). Retrieved February 27, 2005 from http://space.interactiveinstitute.se/Space_Publications/buur_TakingVideobeyond.pdf

Buur, J., & Søndergaard, A. (2000). Video card game: An augmented environment for user centred design discussions. In *Designing augmented reality environments* (Proceedings of DARE 2000, Elsinore, Denmark, pp. 63-69). New York: ACM.

Dourish, P. (2001). *Where the action is: The foundations of embodied interaction*. London: MIT Press.

Ehn, P., & Sjögren, D. (1991). From systems description to scripts for action. In J. Greenbaum (Ed.), *Design at work: cooperative design of computer systems* (pp. 241-268). Mahwah, NJ: Lawrence Erlbaum Associates.

Gaver, B., Dunne, A., & Pacenti, M. (1999). Cultural probes. *Interactions*, 6(1), 21-29.

Gaver, W., Beaver, J., & Benford, S. (2003). Ambiguity as a resource for design. In *Proceedings of CHI 2003: Conference on human factors in computing systems* (pp. 233-240). New York: ACM Press.

Gooding, M., & Brootchie, A. (1991). *Surrealist games*. London: Redstone Press.

Grudin, J. (1990). The computer reaches out: The historical continuity of interface design. In J. Carrasco Chew, & J. Whiteside (Eds), *Empowering people* (Proceedings of CHI 1990: Conference on Human Factors in Computing Systems, pp.261-268). New York: ACM

Habraken, N. J., & Gross, M. (1987). *Concept design games* (Book One: Developing, Book Two: Playing) (Report submitted to the National Science Foundation Engineering Directorate). Cambridge, Massachusetts: Department of Architecture, MIT.

Henderson, K. (1999). *On line and on paper: Visual representations, visual culture, and computer graphics in design engineering*. Cambridge, Massachusetts: MIT Press.

Johansson, M. (2005) *Participatory inquiry: collaborative design* (Ph.D. Dissertation). Karlskrona, Sweden: Blekinge Institute of Technology.

Johansson, M., Fröst, P., Brandt, E., Binder, T., & Messeter, J. (2002). Partner engaged design: New challenges for workplace design. In T. Binder, J. Gregory, & I. Wagner (Eds), *Proceedings of the participatory design conference* (PDC 2002, Malmö, Sweden) (pp. 162-172). Palo Alto, CA: CPSR.

Jordan, B., & Henderson, A. (1995). Interaction analysis: Foundations and practice. *The Journal of the Learning Sciences*, 4(1), 39-103.

Karasti, H. (2001). Bridging work practice and system design: Integrating systematic analysis, appreciative intervention and practitioner participation. *Computer Supported Cooperative Work*, 10(2), 211-246.

Krippendorf, Klaus (1995). Redesigning design. In P. Tahkokallio, & S. Vihma (Eds), *Design--pleasure or responsibility?* (pp. 138-162). Helsinki: University of Art and Design.

Liedman, Sven (1999). *I skuggan av framtiden: modernitetens idéhistoria* [In the shadow of the future: the modern history of philosophy]. Stockholm: Bonnier.

Plowman, L., Rogers, Y., & Ramage, M. (1995). *What are workplace studies for?* In H. Marmolin, Y. Sundblad, & K. Schmidt (Eds), *Proceedings of ECSCW 1995* (pp. 309-324). Dordrecht: Kluwer

Saunders, E., & Dandavate, U. (1999). Design for experiencing: New tools, In C. J. Overbeeke, & P. Hekkert (Eds), *Proceedings of the first international conference on design and emotion* (pp. 87-92). The Netherlands: TU Delft.

Schön, D. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.

Schön, D., & Wiggins, G. (1992). Kinds of seeing and their functions in designing. *Design Studies*, 13(2), 135-156.

Shapiro, D. (1994). The limits of ethnography: Combining social sciences for CSCW. In *Proceedings of the 1994 ACM conference on computer supported cooperative work* (pp. 417-428). New York: ACM

Star, S. L. (1989). The structure of ill-structured solutions: Heterogeneous problem-solving, boundary objects and distributed artificial intelligence. In Les Gasser, & Michael N. Huhns (Eds), *Distributed artificial intelligence, Volume 2* (pp. 37-54). San Francisco, CA: Morgan Kaufman.

Suchman, L. (1995). Making work visible. *Communications of the ACM*, 38(9), 56-64.

Wittgenstein, L. (1953). *Filosofiska undersökningar* [Philosophical investigations]. Stockholm: Thales.