





## Exploring emotions from multiple angles

### The role of personal experience in defining emotions

As an appetizer in exploring emotional design, the project team began with a short exercise. Since the course had started directly after the winter holidays, each person was to pick an emotional experience from the recent holiday, spend several minutes sketching the situation and then write two words to describe the emotions felt. One participant had drawn a scene from the airport and went on to explain how she felt when seeing her boyfriend, who was waiting at the exit gate. The story brought up things like how she was usually alone when coming to this airport and how seeing other passengers with significant others waving celebratory flags in anticipation of their reunion was a bit depressing. Not this time however, she had someone as well. When hearing the story that led to the emotions, we could almost feel it ourselves. However, the two words she had chosen were “cheesy” and “bubbly”. All of



Figure 1

of what an emotion was. A sampling of ideas included describing emotions as “something you personally experience in an abstract and unique way. It’s free and happens suddenly.” Others focused on how emotions may be used to “change a situation from serious to fun, get something off your chest, get people involved by sharing, or simply to get somewhere.”

The group was then exposed to the cognitive psychology definition of emotions (Ortony et al., 1999), which says emotions are valenced reactions (positive or negative) to consequences of events, actions of agents or aspects of objects. Integral to this definition is how the experiencer construes the event. Ortony et al. give the example of a sporting event where winners and losers each have different emotions to the same event. The context is connected to emotions. The way we experience them is personal, differing from person to person. Although we also discussed how movies appear to trigger similar emotions by viewers. This was speculated to be an approach to be used by product designers. Movies do not tell us directly how to feel, but build up events (or interactions) through oral and visual depictions. This is easier than trying to describe actual emotions. To distinguish between mood and feelings, we finally came to define emotions as “an immediate, abstract reaction to events, people and things determined by meaningful context and personal experience.”

### Visually expressing emotions

In contrast to the verbal definition of emotions, we engaged our visual senses by creating a collection of related images. Commonly called “mood boards” these collages are compiled with the intention of communicating an ambience during various design processes. Mood boards may not be the appropriate term as we were interested in emotions. However, the act of creating mood boards may help us comprehend the concept of emotion by using visual means to make an abstract emotion more concrete.

We tried to base our “emotion” boards on a specific, commonly shared experience by having an student not involved with the course create a memorable incident that all project members would witness, although from their own perspective. This would have tied into the idea that emotions are reactions to events, people and things. The incident was not as dramatic and memorable as we hoped. This did lead to an emotional



agreement. However, we caution that this method of making mood boards may also limit the understanding of emotions, as it uses only visual communication. So, we look at understanding emotions through interactions.

### Interactions expressing emotions

We had everyone bring a meaningful object as an inspiration for the next exercise. This product had to be something that you love to interact with and earned your devotion, has been a pleasurable companion or just screams play with me. The personal items included two cameras (one an older mechanical model, the other new and digital), a memory stick, a playful pencil sharpener and an address book. We'll take the address book as an example and explore how the participant described the personal meaning and the interaction. This particular address book is about a decade old and has been modified to have an envelope pouch attached in the inside cover. The pouch holds business cards of friends and acquaintances and even personal items like an obituary of the person's grandfather. It is handy storage that minimizes the need to categorize objects and allows exploration and remembrance of past events.

As we wanted to relate these products to emotions, we looked at the framework by Wensveen et al. (2000) where the user's actions and product's reaction are categorized as either non-expressive or expressive. This leads to a chart with four quadrants as follows: non-expressive action resulting in non-expressive feedback (think of buttons and dials), non-expressive action resulting in expressive feedback, expressive action resulting in non-expressive feedback, expressive action resulting in expressive feedback (See figure 4). They argue that appropriate feedback is essential in emotional interaction and needs to be designed with this in mind and not added later as a feature. Working with these ideas, we then struggled to categorize the interactions with our personal products. Although we were quite willing to put most of the products in the expressive/expressive box, at a second glance, it would seem that none of these meaningful products had expressive feedback, an essential feature according to



Figure 4

Wensveen et al. For example, it doesn't matter how one puts cards in the envelope pouch of the address book, it responds the same by just keeping them. After awhile it does become full and it gets harder to stuff more in. This is a feedback inherent of the form, and not so much in the interaction. The emotions, as we saw them, were related to the context of the objects, which were then transferred to the objects themselves, rather than in the interactions.

Working from the emotions/mood expressed in the boards created earlier, groups of 2 students chose an emotion from the boards they were not involved with making. The task was to create a mockup of an abstract product that through the interaction an emotion is expressed. The results were impressive for such a short experiment. The created objects included a bulb filled with beads that seemed to cling precariously to the walls of the transparent plastic to express nervous, a balloon with spikes poking out that disappeared when the handle end was squeezed to also express nervous, and a wooden ring attached to a stick with strips of paper that fanned out when swirled to express exciting (See figure 5). In the debriefing session afterwards, we tried to guess which emotion each product (besides our own) was trying to express. Even though we had a limited selection of emotions since they had to be the ones from the boards, it was still hard to interpret a specific emotion in an interaction.



Figure 5

There were various ways to look at each interaction. While it is difficult to design and express emotions through interactions, it may be impossible to interpret emotions through abstract interactive objects.

The exercise in making expressive interaction mockups allowed us to learn several lessons. Emotions come from something that happens. It has a relationship with context. These abstract objects did not have a context,

although in our interpretations we tried to give them a context based on our own personal experiences. We cannot design experience, but design for experiencing is possible (Sanders and Dandavate, 1999) and this may be okay to allow an appropriate experience to form from this interaction. In relating this to the board exercise, we see that emotions of doing and interactions are very much different than visual symbols of emotion. Finally, we were left with the question of should we design from certain emotions that we've found or more towards allowing "context for experiencing" (Hummels, 2000)? The interaction only becomes emotional when people are involved.

## Quick probes lead to the injecting medicine concept

### Stretching ethnographically-inspired approaches towards participatory interviews

Design for experiencing tries to understand people's feelings, dreams and imaginations (Sanders and Dandavate, 1999). They advocate the use of "make tools" as an additional step beyond the current tools like ethnography and observation, which only gather what people do and say. Make tools are ways to encourage participatory design with users in workshop settings by getting them to create objects expressing hidden desires and emotions. As a group, we were also intrigued by the cultural probes method (Gaver et al., 1999) and wished to explore them in more detail. Cultural probes are noted for gathering user research that is very personal and highlights individual experiences and opinions in order to design more engaging products. The information collected is used as inspiration and is thought to be valuable in fulfilling unconscious and often unspoken needs.

One member of the group had prepared traditional probe packages (cameras, postcards and additional tasks) and sent them out. Unfortunately, they did not arrive in time for our analysis in connection with this course. As we were a bit dismayed by the extended time period needed for capturing results in cultural probes, we undertook a new approach and conceived of "quick probes" as a way to stretch ethnography towards make tools.

The idea behind the quick probes was to spend an afternoon creating a probe package where one could then accompany and get respondents to complete them on the spot, with the designer present. It has been noted of the importance of learning additional information when researchers visit and talk with probe respondents about the probe returns (Jääskö and Mattelmäki, 2003). This is where the quick probes differed from cultural probes. The process became more like an interview than the completing of individual tasks in a free sequence. The participants were asked to be more specific and to answer on the spot, allowing a more instantaneous and hopefully intuitive results. Designers were involved in the "data" gathering stage, together with the probe participants.

The design team of the quick probes prepared four sets to collect inspiration from users, focusing on the issues of mobility and emotions. The packages consisted of a map of the city center, 10 abstract objects on pins and a list of things to do (See figure 6). The tasks included the following: What are you carrying with you? Describe three objects from your bag. Describe three places in the city. Describe three picked objects (from the prepared set). Which objects would you bring to what places and why?

In a short 15-minute session with four university students who were not foretold of the session, two designers interviewed one student at a time (See figure 7). To open the session, we asked the participant to explain several items they were carrying in their bag. Next, we asked them



Figure 6

to pick three places on the map, which had a special meaning for the person, and to mark them with the abstract objects from the set. After they had chosen the places and the objects to represent them, we asked them to explain the relationship.

A positive aspect of the quick probes was the use of physical objects as a way to allow participants to express themselves. This triggered things the respondents probably would not have expressed had the object not acted as a mediator. By allowing flexibility in interpreting the object, this brought unconscious feelings to the surface and demanded explanation.

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Figure 7

#### Analyzing the probes

To share the results of the quick probes among the entire project team, the designers who accompanied the four probe packages took turns explaining what happened and the responses of the participants.

During this exercise, everyone was to write on post-it notes when an interesting idea or finding was mentioned (Figure 8). When coalescing the post-its into themes, we worked on trying to find the values inherent in the objects and places described. One such conversation was around the idea of luxury and shopping, a frequent notion to come up in the probe results. Was the main idea of luxury to show off or was it more self-indulgence? Was this positive or negative?

For example, one probe participant chose the foil bow for wrapping presents to signify competition as a marker for one of his favorite places in town, the stadium (See figure 9). Another probe

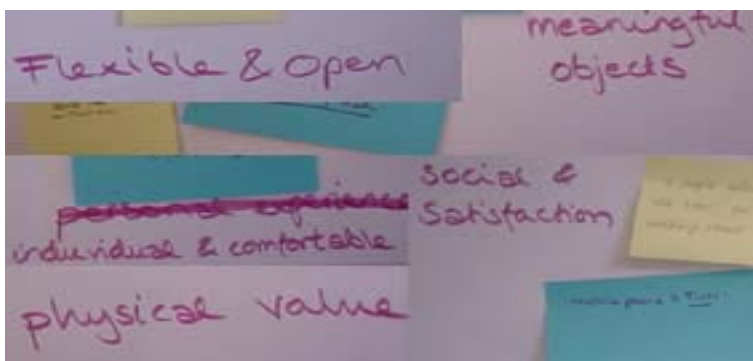


Figure 8

participant was carrying gum to ensure fresh breath. These two bits of information were grouped in the theme of social and satisfaction, along with several others. The theme flexible and open included an umbrella used in rain emergencies, the town bridge, and the

university as a ball that can be molded to one's interests. While normally one would not associate "shopping as luxury", "home as holy cave" together with "forest as natural and raw", we saw these as individual and comfortable. Physical value highlighted the



Figure 9

had it repaired when it broke, because she had used it for over two years (See figure 10). The first three themes were chosen to be the basis for the idea generation stage, as they seemed to be the most intriguing.



Figure 10

reflected in the posters filled with great concepts (See figure 11).

We felt it went to the contrary. We had lost the findings from the probes related to mobility and emotions, which were the heart of the probe. It may be that going from probes to post-its to themes to posters was just too many steps removed to use the probes as inspiration. In a later session where



Figure 11

pencil case that was big and easy to find for one respondent, but also our own ideas that the abstract objects we choose made people think, imagine and dream. The final theme was meaningful objects and included a coin keeper, a wallet and a memory stick so special that the person even

### Moving from ideas to one concept

The three themes from the quick probes were transferred to oversized posters and the post-its scattered around the poster to be used as triggers for inspiration to the design task. As one of the course organizers is working with a company interested in products for hemophilia users, the task became to design a concept for injecting medication. Armed with this knowledge and markers, the project team proceeded to "mindmap" possibilities while circulating around the posters. Drawing upon others ideas was meant to lead to better possibilities, which were to be

we were to flesh out a concept to a physical mockup, a product instruction manual for a current injecting device greatly formed our opinion and gave us many of the constraints inherent in our design. For example, the fragility of the medication at room temperature (which required mixing before

use) and the use of a needle to inject intravenously sent shivers down the spine of many team members if they would be forced to deliver medications to themselves with such an awkward product, as it existed.

In creating the concept, we focused only on emergency situations, where users would need to inject medication while on the go, away from home or hospital. The product is shaped like an armband and is thin enough to be worn daily without making it obvious under a shirt. In an emergency, the vein finder flips out to show a screen for finding a good spot to place the needle. When found, the screen goes green to indicate that this is the perfect vein to use. The user places a meddisc (containing the medication, needle, adhesive sticker for the vein finder) in the opening left by the vein finder. One pulls on a tab to release the needle, which also causes the medication to start mixing. The armband tightens up to force the vein to fill up. Now one inserts the needle into the hole in the vein finder. It is made at a 30-degree angle and only will allow the needle to penetrate to the correct depth, avoiding over insertion (See figure 12). The medication starts to pump slowly and automatically over 5 minutes, one can see the progress on the transparent cover of the meddisc how much is left. When finished, the needle can be tucked back into the meddisc and stored in one's pocket until a suitable receptacle can be found for disposal.



Figure 12

The idea for this concept is to make it easier for others who might need to help in an emergency and also children who would need to do self-injections. In a way, we hide the needle from view, making it more socially acceptable, hopefully more comfortable and less scary for others who may witness such

an emergency.

#### **Did analyzing quick probes towards a specific design task steer us off track?**

As the design task was somewhat a serious proposition, the values from the probes became muted as we focused more on “would this work?” and less on the feelings and meanings inherent in the quick probe results. An alternative approach may have been to create extreme characters based on the probe respondents and explore what makes them tick (Djajadiningrat et al., 2000). This may have allowed the probe findings to remain in a loose context or even more inspirational.

We may be too harsh in our reflection on the concept, as it does seem to harbor the experiences described in the three themes we worked from: social and satisfaction, flexible and open, individual and comfortable. The linearity of the process is not as clear-cut as one would hope. That is the difficulty when one chooses to work with probes, how you get to a concept is not obvious, how the designer's mind makes use of the information and inspiration remains an untapped area.

Some may caution against our approach of using “normal” respondents in our quick probes to design for those who might use such a concept are almost always patients. As we focused on mobility and emotions, there is a universality that makes us human, based on our personal experience. We may have different emotional responses to events because of our meanings and experiences, yet they do often overlap with others who have similar experiences. We wanted to learn more about the experiences around mobility and learn how we can transfer them to additional contexts. Our understandings lead us to believe we need to take into account an individual's responses and emotions and learn how to transfer this into a context for experiencing which allows the freedom of others to create their own personal experience.

On reflection, we see that if the design task had been less defined, the quick probe results would have been more inspirational and might have led to directly related concepts. Ideally, this would be the preferred approach, but our process may mimic

how the constraints of product development within a company, focused on particular business lines, may squeeze the probe findings to fit into an already preformed concept.

## Creating “Extreme Characters” from User Studies

### **The User Studies**

One of the members of the group is collaborating with a local elderly nursing home to develop a concept that enables their members to experience personal and global memory. The particular student’s aim is to create an interaction style that is enjoyable for the target group to use. This project was also used as an application for a group exercise, with the aim of identifying users emotions and values and incorporating them into a real design task.

In this case the users were not given the opportunity to express their emotions consciously, like the previous cultural probes. We wanted to bring in the users emotions with an ethnographic approach. The members of the nursing home was carrying out one of their daily social activities while the observer took a passive role and captured the incident on video without a dialogue with the participants.

The one-hour video showed all the members carrying out different kinds of craftwork. To fit the user studies into a short group exercise, we decided to focus on only three users. The material was cut down to three short series of clips, capturing some of the actions/activities each of these users did during the workshop.

The purpose of this exercise was to design a product for experiencing meaningful digital memory for the people living at this particular elderly home, focusing on the three selected users. However, the video clips only revealed the users behavior in this particular setting, and did not directly provide us with the emotional aspects and values we wanted to adopt to our concept. Even though we had some user studies to direct our design process, we still had to make assumptions on what the users would want from our concept. However, we wanted to avoid designing for a stereotypical “old user”.

### **Extreme Characters**

Djadjadingrat et al suggest the method of designing for “extreme characters” as “a technique which tries to steer away from the usual designing for a prototypical character from a target group. In fact it takes the opposite approach. Instead of designing for characters that are emotionally shallow, we design for characters that have exaggerated emotional attitudes” (p.67). Designing for extreme characters is a method based on fictional users that highlights cultural issues. By creating characters like a pope, a drug dealer and a polyandrous twenty-year old, Djadjadingrat et al focus on extreme emotions that can be used to design interesting and enjoyable products for real users.

Inspired by this method of designing for “extreme characters”, we developed three fictive personas based on the user in each series of video clips. Instead of creating a general and emotionally shallow character “an old lady”, we imagined emotional aspects around each user. Even though our characters had imagined qualities, likes and dislikes, they were still inspired by their behavior in the video clips. Based on the persons’ way of interacting with the objects around her as well as with the people around her, we imagined what this particular person is like, or how she could be like. This exercise was not about “getting it right”, so we allowed ourselves to be imaginative and even a bit extreme to create more inspirational characters.

We developed three outstanding characters: The Proud Liberated Activist, The Informed Passive Positivist and The Cozy Organized Floater. These characters were defined from studying the users actions and behavior in the workshop. For example a woman who came across as very social and outgoing inspired “The Proud Liberated Activist”. In the video clips this particular woman was talking loudly to everyone, she was interfering with what others were doing by asking questions and commenting. We interpreted this behavior as indication of qualities like bossy and nosy. The woman was also being very active during the session, she was constantly swapping from different activities like smoking,

pouring coffee, looking through craft material and picking up and studying craftwork that the others had made. She was using big gestures and whole body movements, she was standing up several times, and she also reached over the table to grab different things (See figure 13). We imagined her to be a very active person, maybe a member of a political organization fighting for equal rights. We started imagining things she would like, from her Harley Davidson to the Olympic games. We pictured her to like functionality as well as simplicity, she would treasure her Swiss army knife, and she enjoys traveling with her friends in the nudist community. Things she would dislike would be lazy fat people,



Figure 13

something she started doing without any hesitations. During the whole workshop she did not talk to anyone, and sat “in her own world” while she was carefully concentrating on only this one task (see figure 14).

Our last character was The Cozy Organized Floater. This woman is less extreme than the previous mentioned characters. Her character was inspired by a user that came across as calm, but social and structured as well as creative. During the workshop she seemed to both enjoy and mastering the



Figure 14

different craftwork as well as little chats with the other members while having her coffee and cigarettes (See figure 15). We imagined her to be patient and realistic, and that she would value family, cooking, traditions and comfort.

old-fashioned attitudes, jewelry, soap operas and romance.

The Proud Liberated Activist was quite a contrast to the two other characters, especially to The Informed Passive Positivist. This character was defined as a calm, open-minded, caring and nature-loving person who dislikes big crowds, making decisions and competitions. These qualities derived from a woman that behaved very differently than the previous mentioned user. In the beginning of the workshop this woman was given a task to cut up small bread pieces for feeding the birds,

### Concepts for the Different Characters

Because of the specific design task, we also imagined each character's attitudes towards their memories. For example we imagined the Proud Liberated Activist to enjoy both global memories as





Figure 15

her own. We imagined this woman to be very protective over her personal memories, and that she would not like to share them. The issue of privacy and security was brought up, and several concepts contained key-like features to lock and unlock sensitive information. As for our last character, The Cozy Organized Floater we came up with several concepts that allowed creative activity not only for viewing memory, but also by creating “albums” as part of the experience. We thought she would be very sentimental about her memories, and that she would like to spend time on both recreating and



Figure 16

re-experience them. These values led to several fiddly interactive concept idea, for example a memory puzzle where different components will be put together to recreate a memory in the form of images.

From the mind mapping sessions we were left with various incomplete concept ideas. We wanted to work further on finalizing on concept that would be suitable for all the users. Therefore we left the extreme characters behind, and looked into the concepts that seemed realistic and more enjoyable for all the members of the nursing home. We decided on the concept ideas that we liked, and combined some of the features we thought were interesting. These features were drawn from concepts for all the three characters, however the ideas around a memory puzzle for The Cozy Organized Floater became our main source of inspiration. Through discussions, brainstorming and acting out scenarios we finalized our final concept.

### Final Concept: Interactive Image Wall

The interactive image wall is a concept that allows the members of the elderly home to view both personal and public digital photos in an easy, yet enjoyable way. The wall contains several screens or tiles displaying different pictures. As soon as a user approaches the wall the screens display a random selection of digital photos. The user is then invited to guide themselves through a gallery of personal and global memories by simply touching the picture he/she likes. The rest of the screens will then automatically change to related images. The user also has the opportunity to easily enlarge pictures by pressing the screen; the longer and harder the screen is pressed, the bigger the picture gets, until it fills out the whole wall of tiles. If the image is then presses again, the picture goes back to normal size, making the rest of the photo series visible again (See figure. 17).

The nursing home will have their own database of photographs available for their members. The staff will update the collection on a regular basis with pictures related to their surroundings, local or global history etc. In addition to this, each member of

continued the exercise with a mind mapping session were we did quick sketches of concept ideas aimed at this particular user (See figure 16). The result was various concepts mainly focusing on the idea of displaying memory and sharing memory. Most of the ideas were using elements of game and full body movement. For The Informed Passive Positivist the concepts were more similar to traditional photo albums and scrapbooks that she could experience on

the nursing home will also have a personal account where friends and family can post pictures on a webpage. The system will identify the user by fingerprint, and will only display personal images to the right user.

To be able to let the members keep the memory found in a picture for a while, the tile with the photo can be taken off the wall. The user might want to bring the photo to her own room to keep until it needs to be taken back to the wall for recharging. This feature also allows the users to bring photos around to be able to share their memories.



Figure 17

Because this concept derived from concept ideas for all the different characters, it addresses different needs and values that are significant for each of them. First of all the concept allows the users to

both browse through personal and public images to experience both individual and global memory. The importance of these different types of memory was different from character to character, and therefore they should be able to decide which kind they would like to explore. The removable tiles also fits each of the characters, The Proud Liberated Activist gets to share and show off her memories, while the Informed Passive Positivist can bring the tile back to her room to experience her memory in private. The system is operated by big gestures and has a playful game-like feel to it, something that the Proud Liberated Activist would appreciate. Our creative character, the Cozy Organized Floater, is also allowed to create her own journey through the memories. The personal account and the finger print recognition also fits with the Informed Passive Positivist that would like to keep her personal memories to herself.

#### **What is the appropriate use of extreme characters?**

Djadjadinigrat et al argues that the method of designing for extreme characters is a beneficial method for designing for real users because the extreme emotions might lead to more interesting and enjoyable products. This method certainly gave us the inspiration to create more innovative concepts. However, because the characters are fictive, these concepts are fully based on imagined emotions, values and needs. We believe that we have developed a concept that is enjoyable for our characters, but we cannot claim that this concept is ideal for the real users, the actual members of the nursing home. There is a danger that the extreme needs might be far from what the real users would want.

Djadjadinigrat et al believe that the extreme characters help the design team to avoid designing for a stereotypical user. We agree that this is an important goal as a stereotypical user is never a real user, but really just a set of assumptions. This stereotype is a creation of how the design team thinks the users might be, and what they might want and need. However, in a group discussion we were debating if the right solution would be to swap the stereotypical user with an extreme character instead of real users, after all they are both made up characters. The method seem to go against the approach of user-centered design, where every design process ideally should start with the real user.

In our exercise we did a similar thing: we used our own imagination to create three different characters that were more or less extreme. However, in contrast to Djadjadinigrat's extreme characters, our characters were based on video footage of real people. They were inspired by real users, their behavior and how they interact with products and people. The details around each character, for example that one liked her Harley Davidson, while another loved cooking, was pure imagination. However, these specific facts were not directly used for the concept, they served more like a set of symbols that created a common understanding of characters. It could be argued that what we did was simply translating what we observed into something more graspable. The final concept does to some extent support the real users behavior. For example the big gestures versus fine detailed gestures while operating the system supports the different ways the users were interacting with the objects and the space in the workshop. The personal experience versus the social

activity when experiencing and sharing memories supports the different levels the users were interacting with each other.

Even though our character was based on real users we have to keep in mind that they are fictive. If we agree that the specific facts about each character only operated as symbols to express the users qualities, needs and values, the symbols are still just based on assumptions. Our interpretation of behavior and interaction might not be a correct representation of the users. In addition to this, the user behavior in these few video clips might not represent the users' general behavior. The video only showed the activities each person was doing during this one workshop. Therefore the qualities of our characters had only derived from the real users behavior during one hour, in this particular setting. This fact, together with the assumptions we made while moving from interaction to character qualities might have lead to misinterpretations of the real users. Therefore we believe that this method should not replace real user input, and cannot be used as a justification of the design. Similar to the quick probes, the material should not be treated as user facts and needs, but as a tool for inspiration. The method certainly broadened up our views and triggered creative, original and interesting concept ideas. It also helped us steer away from designing for stereotypical elderly. However, to find out if the concept ideas would benefit the real users, we would recommend further investigation.

## Discussion

When designing the two concepts, we feel that there is a danger that we have not addressed the emotions of real users. The injecting device was based on emotions of random students while the interactive image wall was based on emotions of fictive characters. We also question if the final concepts are centered around emotional interaction, even though they are inspired by emotions. In our reflection on the outcome of the design exercise, we came to the conclusion that there are little or no opportunities to either express emotions or to get an emotional reaction. For the injecting medicine concept users do not express any emotions during the interaction with the product, and the product itself does not express any emotions in the feedback of the vein finder when it changes color. In the interactive image wall the user touches an image to select one they like. It can be argued that touching an image can be an a form of expressing that one is fond of, however, the interaction does not allow to express other emotions, only the one of liking. In spite of expressing only one emotion, there can be various levels within the emotion. This issue is visible in the interaction of enlarging a photo for detailed viewing. The user can express the level of passion about a photo by pressing harder on the image, and the system will respond to the level of emotion by increasing the size of the photo based on the pressure.

Although there may be little emotional interaction in the concepts, it might be reasonable because we have discovered that emotions have a direct relationship to context. We have geared ourselves towards designing for experiencing, rather than designing the experience. For example in the injecting concept, we have not redesigned the interaction of inserting the needle. However, we have redesigned the involvement of sticking the needle into the arm. Now, one sticks the needle into an object, not the person and so the experience appears less dangerous. Finding a vein is easier and more enjoyable with the implicit metaphor of a magnifying glass and not a medical product. As the context is usually public, what might have been an unpleasant experience for others has been made less objectionable.

From our project we felt that designing for supporting emotions and experience through interaction is more important than the interactions themselves expressing emotions. These findings are based on learning by doing and reflect the outcome of our experiences. In another context emotionally rich interactions may be more crucial.

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