Narrations and Storytelling as Methodological Key Elements for Studying User Experience

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INTRODUCTION

User Experience (UX) is a topic that overcomes barriers between various research domains in its quest to define what constitutes a positive experience. The field of Human Computer Interaction is deeply multidisciplinary; the concept of UX tends to even increase this already fuzzy domain of HCI and bringing even more approaches together. This also had the consequence that people from as many backgrounds as the domain itself tried and try to understand and explain the concept of UX, resulting in a variety of interpretations, expressions and frameworks that focus on specific parts of the user experience.

From our point of view, a user experience framework should help to provide an answer to the question "when does design optimally provide the possibility of positive experience". This goes beyond guidelines for the design or process of designing a product, and focuses on the reasons and concepts behind the "experience".

When we talk about user experience, we mean experience as indicated by [4], which embraces the totality of the whole lived experience but also can be broken up into a variety of separate "experiences" or situations. These situations are set off as self-contained wholes by virtue of an immediate "quality" that pervades each situation. These qualities are not mere feelings, but they are characteristics of situations themselves, which include natural events, human affairs, feelings, etc. Examples of such qualities are satisfying, problematic, exciting, surprising, etc. This is also referred to by Forlizzi and Ford [5] as *an* experience. But what *is* such an experience (theoretically), and how can we measure such experience (methodologically)?

BREAKING DOWN USER EXPERIENCE

User experience, from an HCI perspective, has strong roots in the area of usability research thas has been done in the past decades. With the introduction of e-Commerce, the three factors of effectivity, efficiency and satisfaction were no longer enough to cover the process of buying an item online, as this didn't do justice to other factors on which e-customers base their decision on whether or not to buy a product on the web. We needed to assign different weight to the various factors and we needed to reshift focus from general "satisfaction" towards security, privacy and trust factors to be able to gain a more complete insight in the shopping process.

As interactions drifted more and more away from the functional domain into the leisure domain, we shifted focus again, and factors such as desirability, pleasure, beauty, enjoyment, surprise and fun were introduced.

In HCI circles, the factor "usability" remained central to this approach. Usability is still important for user experience, but our experience shows that although lack of usability in a product can lead to a negative user experience, usability alone will not create a positive user experience; it it is merely a precondition [16]. Although user experience as such originated from usability, it has shifted away and has become a topic on its own.

When an "experience" occurs in the interaction with a product, then that is the user experience we want to define. The question is then, can we decompose this experience into its elements, disjunct factors, which we can analyze one by one? Several researchers have to tried to do exactly that, and found numerous factors, including personality, emotions, expectations, age, requirements, cultural factors, contextual factors such as time and place, trust, enjoyment, and many more. Each of these factors contributes to "user experience". Depending on one's background and ideas, some factors might have more importance than others, some may be easier to analyze, some harder, and some might even not be mentioned here. The user experience is influenced by many factors and vice versa. This has brought new insights from various perspectives. Much interest has gone for example in the area of measuring emotions that accompany experiences, as can be seen for example in recent studies published regarding measurement of emotional aspects of user experience (e.g. [3, 13]). Others have focused on aspects such as pragmatic and hedonic qualities [8], or pleasure [10].

This elementary analysis allows a very finegrained view on user experience and to notice that people from very

different backgrounds have analyzed these single elements makes sure that we have at least an increasing understanding of that what comprises the user experience. In analysis, however, this approach can become problematic, as such a factorial view can create a kind of *Heisenberg principle in user experience research*, as we can never assess all single factors at the same time, and by measuring one factor, we influence others. Hence, we remain uncertain about the total user experience.

Even if we could solve practical (methodological) problem, we are stuck with a more fundamental problem. The experience itself is not the same as the sum of its parts. Instead, experience is something that relates to the user's *interpretation* of his or her relation to a product as a whole. This interpretation depends on factors such as those mentioned above, but is not necessarily conscious. By only looking at user experience from a sum of factors perspective, we will always receive incomplete information.

MEANING – AN INTERPRETATIVE ACCOUNT

The user who is undergoing the experience, is also the one that *creates* the experience. The user is not passive in the interaction, instead the user actively gives *meaning* to what is going on and only in the interpretation of an experience, the experience is given meaning (cf. [1]). By analyzing factors in the user experience, we can observe physiological reactions, we can count and rate and interpret, but in such analysis we cannot observe the meaning of an experience, and we will always fail to see the "why". Additionally, we have the problem that no matter how many people we observe or analyze, exactly the same situation can generate very different experiences, depending on the personal, cultural and social context of the user. Meaning is not created before it is interpreted within this context, a context that we cannot afford to ignore without losing the central part of analysis: the meaning and sense-making by the user.

The generation of meaning is central for user experience: Users create experiences by applying meaning to the whole quality of a situation [4]. This means the user takes a very active role rather than a passive form of receiving perceptions and product quality. This understanding implies that the user is active from the beginning; this starts already with deciding which things are important in the first place An example that clarifies this point can be found in such trivial things as product wrapping: no matter how much a designer wants to strive for an exciting experience of unwrapping, a user might interpret the unwrapping as a meaningless step and go through the well designed package the same way he might go through a simple wrapping, or he even might experience the process as an annoying delay in reaching his goal - the unwrapped product. No matter how much we design for all users, an idiosyncratic experience is created; the experience is shaped by the meaning that the user gives to an interaction which varies for each user.

This active meaning-giving role of the user is not considered enough in sum-of-factor approaches. Before being able to understand the user experience, it is essential to understand which meaning users give to interactions, and what the context of generation of this meaning is. When we want to target our effort of studing user experience towards the aspect of the generation of meaning by the users, severeral characteristics of meanings have to be considered. For one, meaning is not the same as emotion: "It felt good" is not the same as "It was a good experience"; even when emotions are seen as a cognitive process, meaning-giving is a longer-term process, and meaning evolves over time. The trouble with meaning then is that we cannot "measure" it in a classical sense.

Meaning is created in a *social and communicative process* [1], sense-making and interpretion have a large social aspect. Communication with others is also part of an experience, a part that helps give meaning. Every time a user tells about an experience, the memory of that experience changes along with the judgement and reflections on the experience. When someone give his or her opinion to an experience, the same effect occurs: communication shapes meaning and affects experience in hindsight.

Meaning is also fundamentally *relational*. It is in the relation between the user and the product that meaning is given, and meaning says something about this relation. It cannot be reduced to relate only to the product or only to the user; it's only in the relation between a user and a product that meaning exists. In addition, meaning is *relative* in that all products will be given meaning relative to other products.

Finally, the only way we can access meaning is by means of *communication* (see e.g. [9]). meaning is elementary subjective and is not expressed in any other way than through direct communication. This also implies that meaning can not be measured or observed unobtrusively: we will always have to ask users what something means *to them*. Communication might still not be the most optimal solution as experiences evolve over time and are shaped by telling stories about them. However, it is also the only way we can reach the "why", to find out what interpretation is given to experiences by a user.

Due to the characteristics of "meaning" it becomes clear that research focused on the subjective aspect of user experience must use methods that allow to assess the subjective structuring of the users world in their own structure and language in an integrated approach.

THE NEED FOR AN INTEGRATED, INTERPRETATIVE APPROACH

Our aim is to deal with user experience from a holistic, integrated approach, one that is not broken down into fragments up for individual analysis but assessed as a whole, providing a solution for this sum-of-factors, similar to e.g. [4, 18]. From an integrative point of view, it is the user who cognitively gives meaning by interpreting the

world around him or her. When we want to understand the concept of user experience, we need to get hold of this interpretation to be able to get more insight into the concept, and this interpretation can only be assessed as a whole.

So far, we've argued that a sum-of-factors approach cannot provide us with a complete image of user experience, as it does not place enough value on the sense-making and interpretation that is part of the cognitive process of an experience. The idea of an holistic approach to user experience is not new (see e.g. [12, 14]), however, the main difficulty lies in the analysis of user experience, which usually means breaking an experience into pieces to be able to analyze these in detail.

An example of a method that does assess the user experience as a whole, is the cultural probe [6]. This method allows users to choose what they want to send back to researchers, and thus provides a qualitative method for assessing user experience, without decomposing the experience. However, although they do provide a general overview of local users' opinions and views, formal analysis of the results of the probes is difficult and subject to creativity of the researcher. Another example of such a method can be found in the Experience Sampling Method [2].

NARRATIVE INTERVIEWS TO ASSESS UX

We argue in favor of an other approach that tries to capture the holistic nature of experiences, using an interview-style: assessing user experience using *narration and storytelling*. Narrative interviews can help us realize what users experience and what they feel when they interact with technology and can help us gain a better understanding of experiences that take place in a real context when interacting with products. The narrative interview is an interview approach that is focused on starting narrations about real-life experiences, based on the work of Schütze [16]. Such a method allows us to capture integrated experiences without the requirement of breaking down user experience into multiple smaller factors. See also [15] for an overview of narrative analysis.

The focus on eliciting narrations allows us to make use of the structural peculiarities story-telling follows, e.g. the need to make meaningful selections, the need to provide sufficient details for the listener or the need to close a once started narrative figure [11]. The emotional content of the story is re-enacted during the narration, therefore stories provide a more direct access to the experience than evaluative questions [17]. Moreover, with stories as base material, the analysis can also consider structural elements of the narrations and characteristics of the used language.

In a narrative interview, users are asked to narrate stories about situations in which they interact with a product and elaborate on the precise circumstances under which the situation occurred, how they felt during the experience, et cetera, to create as complete a picture as possible. Here, it is it is important to bring people to really switch from "reporting" an event to telling a story. Story-telling and reporting are fundamentally different; whereas reporting provides a rather objective recount of the situation as it occurred, only story-telling allows participants to really re-live the experience including the related emotions that came up at the moment of the experience.

NARRATIVE INTERVIEW APPLIED – A CASE STUDY

User Experiences with everyday technology

We applied this approach in the context of an intelligent environment project. Here we study the consequences of the application of intelligent systems and advanced computer vision technology (also known as cognitive vision) on the users' experience. The goal of the study was to gain more insight in user experiences when interacting with everyday technology with a focus on "intelligent systems". Our aim was to identify types of experiences, to better understand the content, generation and progression of these experiences and to derive implications and recommendations for designers based on these findings, see also [16]. We also communicated our goal to the participants of the study: to better understand the experiences of the interaction with systems of all kinds, e.g. mobile devices, robots, personal computers, personal digital assistants (PDAs) and consumer electronics.

Each interview started with open questions about "encounters with technology" which introduce the interviewee to the focus of the interview and creates the right mindset for follow-up questions. Users were asked to remember any situation with technology in which they experienced emotions. They were asked to recount these memories in detail and to induce stories as complete as possible.

After these relatively unfocused questions, we asked participants for negative and positive experiences, and then focused on specific experiences mentioned by the interviews. Probing questions on these experiences were focused on retrieving general experiences, both positive and negative, as well as social experiences, such as connectedness to other people and sharing experiences with others, and personal experiences, such as feeling intimate with a system, trust in a system and flow. For each kind of experiences, participants were asked to narrate stories about situations in which they experienced it and elaborate on the precise circumstances under which the situation occurred.

The analysis of the interviews took place in two steps. In a first step in the analysis of the interviews we summarized the content of the narrations and classified them to see what type of experiences are actually mentioned, how they might describe emotional experiences, and to which devices and situations they relate.

The second step of analysis concerned the common structural aspects of the different experiences and their

implications for design. For analysing this aspect we followed the classical "grounded theory" approach as suggested by [7]. We first approached the data without specific hypotheses in mind and developed analytical conceptualisations based on the data (so-called codes), searched for contrasting occurrences and cases for the identified codes and then integrated the results. Additionally knowledge from the field of structural analysis of oral narrations was used to enhance this approach [11, 17].

Using this narrative method, we were able to identify interesting phenomena in everyday experiences evoked by today's technology, e.g. the overlap between emotion theory and technology practice as well as the differences between them, the dominance of negative experiences and the influence of usage on the user-system relationship. One main result of our analysis regarding the intelligence of current technology is that people didn't tend to characterize systems as intelligent at all. Attributions like "intelligent" or "clever" were not found anywhere in the interviews whereas characterizations like "stupid" or "dull" appear from time to time. On the other hand interviewees frequently mentioned negative and annoying experiences with systems that behaved "pseudo-intelligent". The typical dramaturgy in these cases consisted of the arousal of expectations regarding the system which then was disappointed. What is characterized as intelligent system by researches and developers doesn't mean to be filed the same way by users.

Lessons learned in using the narrative interview

We observed some interesting phenomena in using the narrative interview in this setting.

Firstly, participants are generally not familiar with an interview method in which they are asked questions very freely. This can create the uncomfortable situation where participants want to answer the request of the interviewer, but are afraid to give a wrong answer, and thus decide it'd be better not to say anything at all. These situations are not uncommon in free association interviews, but can be avoided by giving the participant some focus points for what kind of experiences you're looking. The participants then can go through their memory more easily, searching for experiences that fit specific leads instead of experiences in general and feel more confident to narrate about the experience. In our study, we used very broad focus points as 'positive experiences' or 'negative experiences', which give direction to what we are looking for, but still provide enough room for association on the participant's side to come up with 'free' past experiences.

As people get more comfortable with telling stories about their experiences, the questions also got more personal, and participants were able to find events in which they experienced the broadly described situations. Then, we found that it is useful to ask for extreme events; the 'best experience' and the 'worst experience' provide more powerful expression and allow for easier interpretation than just any positive or negative experience. Finally, we found it easier to reach closure in the interviews when we balanced the questions about experiences; about equal time was spent on both positive and negative experiences. This balanced the interviews and e.g. avoids it from turning into a rant against unusable technology. By putting a positive experience next to a negative experience, it made it easier for the participants to also see where the interview was going.

Finally, it is interesting to see how similar the stories were that were told by our participants. We expected that participants would tell us many stories with very different kinds of experiences and emotions, but it was relatively easy to make sense out of the gathered data. On the one hand we have the idiosyncracy of 'meaning', on the other hand we did find similar stories. The meaning of this discrepancy is still unclear to us as of what conclusions we can draw from it.

These narrative interviews help us to gain insight in user experiences with current technology, and provide meaningful insights on user experiences with intelligent systems. Narrative interviews mostly teach us a lot about user experience with current technologies in a *real* setting filled with context information, which is insightful from a field in which we want to understand the user but only have just started developing the necessary tools to do so. This 'state of the art' view on user experience can also provide us with valuable information regarding future interactions with an intelligent system. However, such an extrapolation towards a new kind of system, towards a system that crosses the boundaries between the virtual and the physical worlds, towards a system that "invades user space" remains a step associated with uncertainty, for which other methods may be more applicable.

CONCLUSION

Firstly, we have argued that although the decomposition of user experience into its elements is necessary and provides us with indispensable information, we also need an holistic view of user experience. A sum-of-parts approach cannot provide us with an overall image of user experience, as it cannot place enough value on 'meaning'.

On a methodological level, we need to move past the UX-version of the uncertainty principle and look at the "why" of user experience, for which an integrative view is required. We believe that narrative interviews can be used to assess the meaning that users give to experiences, and can give us an answer to this why-question.

Although it is not a perfect solution, it is a method that gives us an holistic view on user experience that can complement the knowledge that has been gained so far.

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