Abstract

We live in an 'experience culture' where emotions are more accepted as an important ingredient of human life and several studies show that emotions play a vital role in almost everything we do. In the design of HCI it is important to understand what emotion the design should evoke as well as being able to evoke that emotion in the user. Capturing emotion is in using an IT-Artifact is not an easy task and there are several methods which have been evolved to do that. Choosing right method to evaluate emotion is a vital fact in capturing emotion as a thread of user experience for the designer to design user experience. This thesis studies the evaluation methodologies to capture emotions with comparative studies of two methods using single IT-Artifact. It is tried to evaluate the outcomes or what we really get to know about emotion using these methods here in this thesis studies.

1. Introduction

User Experience as a phenomenon is adopted by the Community of Human Computer Interaction practitioner and researchers. The term 'user experience' is associated with a wide variety of meaning (Forlizzi and Battarbee, 2004) starting from traditional usability to beauty, hedonic and affective or experiential aspects of technology use. Experience itself is not a new research topic. By the psychologist, sociologist and philosophers it has been studied for a long time. As an example the book written by pragmatic philosopher and psychologist John Dewey's book 'Art as Experience' (1934) can be mentioned. Inspired by this book John McCarthy and Peter Wright wrote their book about experience: Technology as Experience (McCarthy, Wright 2004). Beside this large discussion about experience, scientific world and industry as well is full of definitions of experience and user experience. (Leena Arhippainen, 2009)

Ben Shneiderman (2002) argue that we are entering an era of "new computing" where the old computing was about what computers could do and the new computing is about what users can do and the successful technologies are those that are in harmony with users' needs. He also mentioned that they must support relationships and activities that enrich the users' experiences. It is no longer considered to be sufficient to produce a computer system that is effective, flexible, learnable, and satisfying to use. The characteristics of usability according to Shackel (1990)—it must now also be useful in the lives of those using it.(McCarthy, Wright,2004) Interaction with technology is not only what people do but also how people feel. From children playing with Game Boys, teenagers gender swapping, and elderly people socializing on the Internet as it is about middle-aged executives managing knowledge assets, office workers making photocopies, or ambulance controllers dispatching ambulances; the emergence of the computer as a consumer product has been focused by attention to user experience. And it is how users experience an interactive product from their perspective rather than assessing how useful or productive a system is from its own Perspective. (Preece et al. 2002). We don't just use technology now a day but we live with it and much more deeply than ever before and we are also aware that interacting with technology involves us emotionally, intellectually, and sensually. Those who design and evaluate interactive systems need to be able to understand and analyze people's felt experience with technology.

Marc Hassenzahl (Hassenzahl, Tracktinsky, 2006) mentioned user Experience is a consequences of users internal state, Characteristics of the designed system and the context where the interaction occurs . John McCarthy and Peter Wright mentioned four threads of user experience in his book 'technology as Experience'. He defined Emotion as one of those four threads (McCarthy, Wright, 2004). Using an artifact a user experiences the use of the artifact which creates some certain feelings or emotion. Taking this emotion explicitly and informing the designer about this can come in help to design better interaction in between the artifact and the user. The emotions that take place in interacting with an artifact are the major aspect for the designer to create human centered design. Because if the emotion can be captured and analyzed properly and if it can be informed to the designer , taking those properties of emotion in consideration an interaction can be designed more effectively understanding users need , requirement or expectation. While there is a great deal of concern with emotional aspect of technology use experience in Human-Computer Interaction and related fields, both in practice and comment, it is often hard to capture and use explicitly user's emotion in experiencing artifacts for design purpose. Developing an account of felt experience with technology is difficult partly because the word 'experience' is simultaneously rich and elusive and it is also difficult because we can never step out of experience and look at it in a detached way and also experience is difficult to define because it is reflexive and as ever-present as swimming in water is to a fish. (McCarthy, Wright, 2004)

1.1 Research Question

Defining the user experience has been a challenge for a long time and scientific community has joined their forces to define user experience and finding the unified view about the principles of user experience(Law et al.2007, Law et al 2008a).In SIGCHI Finland autumn meeting(SIGCHI 2008),Nokia's principle scientist, Virpi Roto gave a speech about User Experience-From business to theory, where she showed the user experience ISO standard which is still under construction, and its work name is ISO DIS 9241-210 and it defines user experience as (Mutanen 2008, Jokela 2008).[UX is]a person's perceptions and responses that result from the use or anticipated use of a product, system or service. This has drawn a discussion of why we even need a standard for user experience. User experience is a question of one's subjective experience (Mutanen, 2008).And also the challenge in user experience is how user experience can be researched? And design for user experience is another challenge for user experience. In my thesis I have focused on one important thread of user experience out of four threads defined by John McCarthy and Peter Wright and that is emotion and how it could be studied. There are so many methods to evaluate emotion. My research question is what do we learn in capturing emotion with different methods? I have checked two methods out of so many methods in capturing emotion.

The designers need to find ways of giving people sense of what the experience might be like before the design itself is available and also it is of particular importance that a design team needs to create representations of the system to enable the capture of emotional responses of people and their explanations of why. The design team needs to identify applicable and feasible method which can be used to capture emotion. If the emotion can be captured, the explicit properties of the user's emotion can be informed to the designer or

design team to be studied, used and implemented in designing experiences in artifact designing. But there are so many methods1 to evaluate or capture emotion. Which one to choose and which one reveals which aspect of emotion and how the designer should choose the method with his/her design requirements are points to be concerned.

2. Literature Review

2.1 User Experience

The word 'user' coined with the 'experience' -'user experience' refers to an encounter with a system that has a beginning and end and how people have experienced a period of encountering a system and is a consequence of users internal state (predispositions, expectations needs, motivation, mood etc.), the characteristics of the designed system (e.g. complexity, purpose, usability, functionality etc.) and the context (or the environment) within which the interaction occurs (e.g. organizational/ social setting, meaningfulness of the activity, voluntariness of use, etc.).(Hassenzahl,M and Tractinsky,N., 2006). UX depends upon individual's perceptions and the interpretation of those perceptions and resulting emotions during an encounter with a system and each person may experience the system in a different way.

The field of UX deals with studying, designing for and evaluating the experiences that people have through the use of (or encountered with) a system. This use takes place in a specific context, which has an impact on, or contributes, to the UX. (Roto V.,Law E., Vermeeren,2010).   A wide range of factors may affect the user experience; the factors can be classified into three basic categories: the context around the user and system, state of the user, and the properties of the system.(Roto V.,Law E., Vermeeren A.,Hoonhout, 2010) Referring the context in UX basically a mix of social context, physical context, task context, and technical and information context are referred. User is dynamic in the user experience (UX) and refers to person's motivation to use a product, their mood, mental physical resources and expectations. By saying the system in user experience it's meant a user's perception of the systems properties along with its functionality, aesthetics, designed interactive behavior, responsiveness, and the properties that the user has added or changed in the system or that are consequential of its use as well as the brand or manufacturer image.

Since the early days of HCI the task became the pivotal point of user centered analysis and evaluation techniques and to ensure the interactive product's instrumental value became the major endeavor of the field. This narrow focus was challenged frequently. In an early attempt in defining UX Alben (1996) identified beauty as an important quality of technology. Importance of the non-instrumental needs were emphasized by Gaver and martin (2000).He emphasized on surprise, diversion, or intimacy to be addressed by technology. Hassenzahl (2003) argued drawing upon the concept of usability (Logan et al.1994) that future HCI must be concerned about the pragmatic aspect of the interactive product as well as about hedonic aspect such as stimulation, identification and evocation.(Hassenzahl, Tractinsky, 2006)The

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[1] http://www.allaboutux.org/all-methods

affecting computing project was one of the most important and pioneering attempts to address affect by HCI(Picard 1997) Which deals with question such as how computers can sense user affect, adapt to it, or even express its own affective response(Picard and Klein 2002, Hudlicka 2003) and it also deals with mechanism that detects and undo negative emotions and also dominated by illustrations of how interactive systems can aid irritated users, manage their frustration or prevent other negative emotions. Beside, though it deals with the recognition of affect and emotions, it is rather concerned with affective consequences on the human side (Hollnagel 2003,) focusing on positive emotion such as joy fun and pride.(Hassenzahl,M and Tractinsky,N,2006) Brenda Laurel interpreted experience of computers by analogy of theatre as an experience suggesting that "both have the capacity to represent actions and situations in ways that invite us to extend our minds, feelings, and sensations" (1991, p. 32). Her interest in the senses relates to Living with Technology concerning action, engagement, and agency in the context of people interacting with computers and relates experience as and holds it up as "a desirable—even essential—human response to computer-mediated activities" (ibid., p. 112). By Shneiderman human needs and social relations in the view of HCI is important and argues that technologies must support relationships and activities in ways that enrich people's experiences and their sense of togetherness.

Through the glance in UX literature such as 'the design and emotion' conferences(e.g. McDonagh et al. 2003), the 'Funology' workshops and publications (Blythe 2003, Blythe et al. 2004), Helander and Tham's (2003) special issues on 'Hedonomics', 'Aesthetics', work of Pat Jordan(e.g Jordan 2000) and recently Don Norman(2004a) three major perspective has been revealed-addressing human needs beyond instrumental; affective and emotional aspects of interaction; and the nature of experience.(Hassenzahl , Tractinsky, 2006)

Norman (2002) placed enjoyment at the center of his new analysis of design and according to his three-level model of enjoyment it is concerned relating people's visceral, behavioral, and reflective responses to an object or product. He also analyses the everyday and mundane activities of customization, personalization, and personification to make the case that we are all designers and that we make products our own and come to love or hate them.

'Experience' is the word most likely expressing something of the felt life. As a word it is very rich, discursively open and complex, and redolent of life as lived, not just as theorized. The openness of 'experience' is likely to become confusing without some ground clearing. And it is quite hard to do for a couple of reasons, like experience is ever present and we are always engaged in experience even when we are trying to stand back from it to describe it. For example if I describe a situation, the description of that situation is constituted of things and events, what they did to those involved, and how they responded. (McCarthy, Wright, 2004)

Two aspect of the technology use: its situatedness and its temporality is the main perspective in the experiential part to emphasize under UX. The product and the internal state of the user extend over time with a definitive beginning and end combines the experience of a user by this experiential perspective. Experiential outcomes have a more positive impact on ones wellbeing (Van Boven,Gilovich 2003) and they posse's effective quality and help to transform and regulate affective state.

2.2 Emotion

Emotion is becoming accepted and studied as an important ingredient of successful human computer interaction (HCI) design and it has always been important in design, but as a discipline rooted in the methods and mindset of the cognitive psychology of the 70s and 80s, HCI has been slow to accept that affect (as exhibited in feelings of happiness or anxiety) is an essential component of reasoning about the world, not an opposing force.(Waterworth J. 2000) Emotions are studied from various perspectives in the field of HCI. Mahlke (2005a) distinguishes the affective computing approach and the emotional design perspective and according to him computing systems recognize user's emotions, model user's affective states, adapt to the user's affective state and express emotions (e. g. Hudlicka, 2003).The emotional design approach (e. g. Norman, 2004) for many researchers and practitioners is the matter of advocacy in the consideration of emotions in the design of interactive products. Emotions are considered as an important part of the user experience (Mahlke, 2005b).First, results emphasize the importance of a consideration of product-driven emotional reactions for HCI (Hassenzahl, 2005) and in another way of research this perspective is labelled as affective human factors and deals with similar topics (Helander & Tham, 2003; Khalid, 2004). Hassenzahl & Tractinsky (2006) integrate this perspective and discuss the differences between their and the affective computing perspective in the area of user experience research. (Mahlke, Minge,2008)

2.2.1 Defining Emotion

Emotions are complex neuro-physiological systems with visceral, behavioral and reflective levels operating on biological, neurological and psychological systems and interacting with cognition, memory, problem-solving etc. (Mahlke, Minge,2008)Picard mentioned term 'Affective Computing' in describing systems that use any of the broad spectrum of emotions and distinguishes between 'inner experiences' and outward 'emotional expressions'. Norman uses 'emotion' to show underlying levels and 'affect' for reflective levels of emotion. There are thousands of different words and metaphors related to specific emotional states that are usually used with no definite correlation to individual perceptions and experiences of emotion. In the framework for developing a user experience evaluation methodology integrates cognitive and affective/emotional components where the Cognitive components are instrumental and non-instrumental quality assessments of the human-technology-interaction by the user (Mahlke, 2002) and the Instrumental quality aspects are criteria like the usefulness and ease of use of a system (e.g. Davis, Bagozzi, & Warshaw, 1989). In the years back non-instrumental quality dimensions-hedonic qualities or visual aesthetics, attracted a lot of attention (Hasenzahl, 2001; Tractinsky et al., 2000).Non instrumental quality aspects are distinguished from affective/emotional aspects of the user experience (Hassenzahl, 2005). Whereas affective/emotional components can be on the one hand immediate, we have unmediated affective reactions and on the other hand more complex emotional consequences that result from a cognitive appraisal process. According to Norman's (2004) three-level model of information processing emotional aspects play a role on different levels. The visceral level was studied by Katkin, Wiens, & Öhman (2001) who connected visceral perception with the development of gut feelings. Emotional consequences are more complex

in nature in emotional phenomena. Desmet & Hekkert (2002) use the theory on emotions described by Ortony, Clore & Collins (1988) to describe the development of product emotions.(Mahlke Minge ,2008) Despite the incompatible and opposing models of emotion a framework a working definition can be created for understanding and designing affective human-computer interactions. The working definition of emotion enables to construct a framework to ask experimental questions, design methodologies, and interpret results without bothering too much with psychological aspects. Considering emotions as an ongoing, ever changing process, regarding Larsen and Fredrickson's working definition (Larsen, Fredrickson,1999) the emotions are multifaceted processes that unfold over time, influenced by internal and external events, manifested themselves in multiple channels; resulting in specific physiological patterns and emotion channels are loosely coupled and may interact in complex ways.(Peter et al;2008)

2.3 The Four thread of Experiences

John McCarthy and Peter Wright in his book technology as experience talks about four threads o experience in order to be consistent with pragmatist view of experience and inquiry according to him it is important to recognize the threads of experience for what they are. They are not fundamental elements of experience but are ideas to help us think more clearly about the technology as experience and provide ways of talking about technology that heighten sensibility to peoples experience of it .The four threads that they pick from the pragmatic literature are sensual, the emotional, the compositional and the spatio-temporal. According to the picture Dewey paints about the sensual thread: it is through sense organs that living creatures participate directly in the world about them. The sensual thread of experience is sensory engagement with a situation orienting to the concrete, palpable, and visceral character of experience that draws attention to things being grasped pre-reflectively as the immediate sense of a situation in which the wonder of the material world is made actual for us in the quality of experience. The interaction between person and environment becomes participation and communication after the functions of the senses are fully realized to give this sense of the situation. The compositional thread is denoting the relationships between the parts and the whole of an experience. For example is someone is looking at a painting, 'composition' refers to the relations between elements of the painting and their implied agency, and between viewer, painting, and setting. In a technologically mediated communication, it refers to the narrative structure, action possibility, plausibility, consequences, and explanations of actions. All experience has a spatio-temporal component like an intense emotional engagement can make our sense of time change; a frustrating experience can leave us perceiving space as confined and closeting. Space and time soak our language of experience. Experiences of space and time are constructed through interaction and time may speed up or slow down, pace may increase or decrease, spaces may open up or close down, space and time may be connected or disconnected. And in the spatio-temporal aspect of an experience, public and private space might be distinguished; comfort zones and boundaries between self and other or between present and future can be recognized. Emotional thread is the color shot through the experience that holds all aspects of the experience together and makes it different from other

experiences. A discussion on emotional thread is given below as per the focus of the thesis. (McCarthy Wright p.; 2004)

2.3.1 The Emotional Thread

According to the picture Dewey paints about emotion resonating with creativity, change, and dialogue:

Joy, sorrow, hope, fear, anger, curiosity, are treated as if each in itself were a sort of entity that enters full-made upon the scene, an entity that may last a long time or a short time, but whose duration, whose growth and career, is irrelevant to its nature. In fact emotions are qualities, when they are significant, of a complex experience that moves and changes. . . . All emotions are qualifications of a drama and they change as the drama develops. (Dewey, 1934)

Emotions for Dewey are qualities of particular experiences which are the color shot through the experience that holds all aspects of the experience together and makes it different from other experiences. The emotions at work in an experience are belonging to a self engagement in a situation and concerned with the movement of events toward an outcome that is desired or disliked that does not exist separate from the person, the situation, or the feelings of the person toward the situation. According to Bakhtin, a person's unique values and feelings with respect to a situation and the direction in which he sees it developing shade his actions. Action, in this sense, is permeated according to what Hicks (1996) mentioned "the moment-to-moment 'oughtness' in which particular agents were responsive to particular situations of being." According to Bakhtin, this moment-to-moment oughtness invests each human act with an emotional volitional tone and answerability, which is particular to the person, the object, and the situation and which is more like faithfulness than adherence to a set of norms. Martha Nussbaum argues that emotion views the world from the perspective of our goals, needs, desires, and values and suggests that emotions are best seen as judgments of value:

. . . emotions are forms of evaluative judgment that ascribe to certain things and persons outside a person's own control great importance for the person's own flourishing.

Emotions are thus, in effect, acknowledgments of neediness and lack of self-sufficiency. (Nussbaum 2001,) According to the evocation of Dewey, Bakhtin, and Nussbaum people struggling for emotional unity and having a sense of their freedom, creativity and also evoke a sense of the constraints of their commitments, values, needs, and goals, and of their need for others to achieve any unity. And hence the emotional thread refers to value judgments ascribing to other people and things importance with respect to our needs and desires. Our frustration, anger, joy, and satisfaction admit our need for others in our struggle to achieve emotional unity and hence our relations with these others (people and things) change, so too do the emotions. In that sense, emotions are always becoming: lust can turn into love and ultimately satisfaction; frustration can turn into hope and joy. According to John Mc McCarthy and Peter Wright we do not perceive an objective representation of the world; rather, we perceive a unique version colored by our unique desires and values as experienced in the situation we are engaged in. This implies that in experience there is no given system of activity. Activity entails feelings and a moral response that make different people's experiences with the same system or even the same people's experiences of a system at

different times and in different activities, radically different and this is not a point about an individual's subjective state or private thoughts; moreover it is not an argument that a situation can be different in different people's heads and hearts. Experience refers to the irreducible totality of people acting, sensing, thinking, feeling, and making meaning in a setting, including their perception and sensation of their own actions. It is not the subjective state that varies from experience to experience, but the totality of people acting and making sense of their action in a setting. According to Hicks (2000), "this lived moment of intoning and responsive engagement was what Bakhtin described as the act or deed." A hick further argues that Bakhtin "depicted acts of experience as meaningful only in as much as they are felt, known, and valued in unique ways" .(McCarthy, Wright 2004)

2.4 Theories for Structuring Emotions

Two main theories are currently established among the theories categorizing or structuring emotions: a discrete approach, claiming the existence of universal "basic emotions" and a dimensional approach, assuming the existence of two or more major dimensions which are able to describe different emotions and to distinguish between them (Russell, J. A.1980)

2.4.1 Discrete Emotion Theory

Discrete emotion theories imply the existence of historically evolved basic emotions which are universal and can therefore be found in every culture. Several psychologists have suggested a different numbers of basic emotions ranging from 2 to 18 categories. But, considerable agreement was on the following six: anger, disgust, fear, happiness, sadness and surprise. Some scholars believe that these emotions have evolved in us as a way for people, regardless of communication differences, to predict what other people are thinking and feeling (Beck 2004).[2] A study conducted among the people in New Guinea who have never seen Caucasians nor been exposed to photographs or television, to see if they could identify specific facial expressions. Researchers showed them pictures of people portraying seven different emotions which are known as core emotions - happiness, anger, sadness, disgust, surprise, fear, and contempt (Ekman & Friesen, 1971). Researchers found that the people of New Guinea could in fact point out the different emotions distinguishing between them. From this experiment researchers came to a decision that these specific emotions are universal and innate. They also varied the pictures of people ranging in age from infants to elders and found that the core emotions are always same, which further supported the discrete emotion hypothesis. The result was also same with the deaf and blind children. (Peter, Crane, 2008)

2.4.2 Dimensional Emotion Theory

In describing the structure of emotion, dimensional emotion theories use dimensions rather than discrete categories. All emotions are characterized by their valence (pleasure), arousal (activation), and dominance (control, social power) by the view of Dimensional Emotion theory. Some models have suggested an even greater number of dimensions, but the additional dimensions could usually not add much to the overall variance that could be accounted for and arousal and valence have proved to be the two most important dimensions

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[2] http://en.wikipedia.org/wiki/Discrete_Emotions_Theory

(Russell, J. A., 1980). Cowie et al. (Cowie et al.1999) suggested that additional features which are not part of every emotion, but of certain ones. They mentioned from their findings that some emotions that share the same degrees of arousal and valence but are perfectly distinguishable in everyday life (e.g. fear and anger) could be better discriminated by comparing these additional features. Russell discovered a specific ordering of the words describing the felt emotions when he started conducting self-report studies on the structure of emotion with the two-dimensional approach. The ratings clustered around the periphery of a circle instead of falling in every area of the coordinate system which he called the Circumflex of Affect. (Peter, Crane, 2008)

3. METHOD

3.1 Design of the Study

There are so many user experience evaluation methods. And for evaluating emotion in user experience we have so many different methods (http://www.allaboutux.org/all-methods). Out of all this evaluation methods I have chosen 3E (Expressing Experiences and Emotion) and Geneva Appraisal Questionnaire (GAQ) as empirical methods to put in survey to capture the emotion. The Geneva Appraisal Questionnaire is the quantitative approach of data gathering while 3E is qualitative approach of data gathering. I have chosen Geneva Appraisal Questionnaire because it assesses emotion as much as possible through recall and verbal report of a participant's appraisal process in the case of an emotional episode and to do so the questionnaire designed as forced choice type with a single question with a request of verbal description. Because of these qualities this method is supposed to give the description of the event with details as well as the questionnaire based on the event is supposed to inquire the emotion and the mental and environmental context in a vivid way. It carries the description of the characteristics of the event with the causation of the event and the consequences of the event and also deals with the reaction with respect to the real or expected consequences, intensity and duration of the emotional experience with verbal description of the emotional experience which made me interested put this method into experiment to check. There are various instruments to measure emotion starting from simple pen and paper rating scales to high tech equipment's. The instrument relying on self-report utilizes rating scales, verbal protocols (verbal methods) or pictograms (nonverbal methods) are used by the user to depict his/her emotion. Two examples of self-report instrument using pictograms for nonverbal assessment of emotions are Emocard and Self-Assessment manikin (SAM). Self-Assessment Manikin represents visually three dimensions of emotion by three axes: pleasure-displeasure, degree of arousal and dominance submissiveness. Emocards Consists 16 cartoon faces (eight male and eight female faces) that depict eight emotional responses. The problem or drawback of these two methods is that they capture only emotions but not the context or cause of them. To clarify the cause or context researchers are required to do further assessment. On the contrast 3E allows the user to depict emotion with a different approach by drawing and as well as writing, so giving information of their feelings and reason behind them in a way of their preference.

3.2 Choosing Application To Evaluate Emotion

I have chosen Facebook as an application to evaluate users emotion as Facebook is the biggest social network system as per the declaration made on July 2010[3] and the features and functionally offers vast space for evaluating emotion in interaction to it. Facebook allows people who probably never would have met each other in person to communicate, creates new relationships and friendships. Facebook being a medium for communication provide space to share the day to day update of their status, pictures, comments on each other status, message etc. A user can get everything from what a gender a Facebook member is, to what religion they believe in, what school they attend, their likes and dislikes in an instance and share their emotion in building up and abandoning relation.It has given them an option to live a alternative life where existence of every kind of emotion can be found to go for study to reach my research goal.

3.3 Participants

I have taken total 22 participants both male and female to conduct my evaluation on emotion with Geneva Appraisal Questionnaire (GAQ), and 7 participant with 3E(Expressing Experiences and Emotion). Maximum of the participant are students studying in Umea University and are familiar with Facebook and have moderate to high computer experience. The ages of the participants are in between 18 to 54 years. I have chosen the participant from this age group since as per the research the people of age difference in between 18 – 54 is the major user of total Facebook user.[4]Because of the limitation of the resources I could not go to collect data outside of my campus area and had to choose maximum from the students of Umea University.

3.4 Procedure

With the experiment the Geneva Appraisal Questionnaire (GAQ) it took 10 to 15 minutes for the participants to answer all the questions. For this method I choose online survey and sent the questionnaire to people with all the guidelines and instruction mentioning in the mail and received the data and also for some participant I gave pen and paper to answer all the questions on the Geneva appraisal questionnaire. With the 3E method to evaluate emotion I let the participant to use Facebook and provided participant with a simple pictorial template for expressing emotions and experiences, in the form of sketched human body. The participants were able to draw a face to the human figure and so projecting her/his emotional state. The human figure was added with two cartoon like speech bubbles one of which was cloud like is used to depict the inner thought and the square like bubble for oral expressions. I did the experiment with 3E method in the campus area and also in the student corridor. The data collection with Geneva Appraisal Questionnaire was easy to do and it took less time than the 3E method. With the Geneva Appraisal Questionnaire it was possible to collect data without being present in the spot in front of the participant. In contrast with 3E I had to be

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[3]http://topics.nytimes.com/top/news/business/companies/facebook_inc/index.html
[4] http://www.insidefacebook.com/2010/01/04/december-data-on-facebook%E2%80%99s-us-growth-by-age-and-gender-beyond-100-million/

present in front of the participant and let them using Facebook. But concerning the privacy it was not possible to see really how they were using and sometime I felt all the emotional instances were not captured by the 3E process in their drawing by the users. There were more feelings going on inside the user which the user could not really depict and according to their words it was too abstract to explain or draw. And I felt that the user might get biased by the presence of the researcher in front of the user in evaluating emotion by 3E method. On the other hand the Geneva Appraisal Questionnaire (GAQ) allows the user to recall a memory of an emotional event of felt experience and along with that the questionnaire consisting issues of context and other inquiry based on the emotion. It was strait forward and easy to understand and reflect upon in answering; though some of the participant said that there were too many questions to answer. With 3E some of the participant was happy and spontaneous and according to them the stickman in the template for the experiment was funny and they liked to draw on it.

4. Picture of emotions Captured with GAQ evoked by the use of Facebook:

The picture of emotions by applying the method GAQ has been depicted here with the description of the method.

4.1 Geneva Appraisal Questionnaire

Under the dimensional emotion model of structuring emotion Geneva Appraisal Method is one of the prominent method in capturing Emotion. There are a number of attractions to the dimensional approach like the idea of plotting emotions along dimensions respects a fundamental observation that emotions can vary very smoothly, both as they progress in time and from case to case.The Geneva Appraisal Questionnaire was developed by the members of Geneva Emotion Research Group on the basis of Klaus R. Scherer's component process model of emotion (CPM).[5] The Component Process Model (CPM) (five components of emotion: cognitive, neurophysiological, motivational, expressive and subjective feeling) is Scherer's major theory of emotions which regards emotions as the synchronization of many different cognitive and physiological components. Emotions are identified with the overall process whereby low level cognitive appraisals, in particular the processing of relevance, trigger bodily reactions, behaviors' and subjective feelings[6].The purpose of Geneva Appraisal Questionnaire is to assess, as much as is possible through recall and verbal report, the results of an individual's appraisal process in the case of a specific emotional episode. To do so, the instrument contains questions that tap the appraisal criteria suggested by Scherer's model[7].The Geneva Appraisal Questionnaire deals with different appraisal goals like Novelty, Intrinsic Pleasantness, Goal/Need Significance, Coping potential, Compatibility with standards, and in addition the questionnaire contains questions on the timing and the social context of the

5 http://www.affectivesciences.org/system/files/page/2636/GAQ_English.PDF
6 http://en.wikipedia.org/wiki/Emotion#Component_process_mode
7 http://www.affectivesciences.org/system/files/page/2636/GAQ_English.PDF

emotional experience and the event, as well as questions on intensity, duration, and regulation of the emotional experience.

4.1.1 Affectivity and appraisal systems

According to Roseman's (1984) description emotion and affectivity is a multifaceted phenomena consisting of:

1. Cognitive appraisal. Only the events which are judged or appraised to have Significance for our goals, concerns, values, needs, preferences or well-being elicit emotion.

2. Subjective feelings. The appraisal is accompanied by feelings that are good or bad, pleasant or unpleasant, and calm or aroused.

3. Physiological arousal. Emotions are accompanied by autonomic nervous system activity.

4. Expressive behaviors. Emotion is communicated through facial and bodily Expressions, postural and voice changes.

5. Action tendencies. Emotions carry behavioral intentions, and the readiness to act in certain ways.(Gabrys´-Barker 2011)

Roseman (1984) emphasizes the significance of our value judgments as factors conducive to how we act in life and he points to the importance of our appraisal systems for effective functioning in life.According to Lazurus and Smith Appraisals are generally seen as mostly affective and idiosyncratic in nature, based on one's own evaluation of values and factors that contribute to one's 'wellbeing' (Lazarus & Smith, 1993).

Each positive emotion is said to be produced by a particular kind of appraised benefit, and each negative emotion by a particular kind of appraised harm. The emotional response is hypothesized to prepare and mobilize the person to cope with the particular appraised harm or benefit in an adaptive manner, that is, to avoid, minimize, or alleviate an appraised harm, or to seek, maximize, or maintain an appraised benefit. Whether a particular set of circumstances is appraised as harmful or beneficial depends, in part, on the person's specific configuration of goals, and beliefs. Appraisal thus serves the important meditational role of linking emotional responses to environmental circumstances on the one hand, and personal goals and beliefs on the other. (Lazarus & Smith, 1993, p. 234)

Generally, if a given event is expected to be positive, it gives rise to positive feelings such as joy, pleasure and happiness, whereas, a negative picture of something that is about to happen will result in negative emotions of fear, anxiety and sadness (Scherer, 2001).

Scherer (1984, 2001) understands appraisals as a complex network of interacting variables of:

- *Novelty that demonstrate the degree of familiarity of the stimulus in terms of the task itself, type of input data or action/strategy followed in performing the task (Output);*

- *intrinsic pleasantness, which express how pleasant the stimulus is as a factor conducive to the type of approach to the task taken, manifested as either (enthusiastic) indulgence in the task or its avoidance;*

- *goal/need significance, expressed as relevance value for an individual, in other*

words, the significance and immediate value the stimulus (i.e. task or action) has for an individual;

- *coping potential, expressing one's perception of ability to perform a task (action) or to change the stimulus to adjust to one's performance potential; it is influenced by emotions resulting from previous experience (Lazarus, 1991); and*

- *norm/self-compatibility, demonstrating one's evaluation of how appropriate in social/cultural terms the stimulus is understood to be (Gabrys´-Barker, in press).*

*(*Gabrys´-Barker ;2011)

The GAQ contains both descriptive questions when the subjects are expected to produce a narrative text and also specific questions of the Likert-scale type where the subjects are asked to choose their responses from the following options: not at all (no), moderately, extremely (yes) and does not apply.The GAQ is provided with specific instruction in answering the questions:

> *In this questionnaire, we ask you to recall moments when you experienced an intense emotion, either positive or negative. It could have been something that really happened or that you expected to happen (whether it finally happened or not). The events might have been brought about by you, by someone else, or by natural causes. Now try to remember some of the strongest emotional experiences that you have had in recent times (for example, during the last year). Of those, please select X episodes that you thought of spontaneously. Try to recall as many details as possible that are pertinent to the chosen emotion episode. Please respond to the questions on the following pages by placing a check mark in the appropriate space for the respective scale. If a particular question does not make sense in a specific situation, please mark the circle 'does not apply'. It is extremely important that you answer all the questions and that you select only one alternative for each question.[8]*

The content of the questions consist of event description (a narrative text), occurrence of the emotional experience (q. 1_3), general evaluation of the event (q. 4_5), characteristics of the event (q. 6_11), causation of the event (q. 12_17), consequences of the event (q. 18_25), reactions with respect to the real or expected consequences (q. 26_28),intensity and duration of the emotional experience (weak, moderate and strong/seconds, minutes, hours, days and weeks; q. 29_32),verbal description of the emotional experience (a narrative text) The emotion terms listed related to the event.

4.1.2 The event description

In the beginning of the questionnaire the user was requested to describe the event on Facebook that produced your emotional experience in few sentences, mentioning what happened and the consequences this had for you. The emotional content of the selected events can be seen as critical incidents (CIs) which are a set of procedures used for collecting direct observations of human behaviour that have critical significance and meet methodically

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[8] http://www.unige.ch/fapse/emotion/resmaterial/resmaterial.html

defined criteria. These observations are then kept to track incidents, which can be used to solve practical problems and develop broad psychological principles. It can be described as one that makes a significant contribution—either positively or negatively—to an activity or phenomenon. The studies of Sir Francis Galton (circa 1930) are said to have laid the foundation for the Critical Incident Technique, but it is the work of Colonel John C. Flanagan, that resulted in the present form of CIT (described in Psychological Bulletin, Vol. 51, No. 4, July 1954)[9].

Informants	Event Description(Incidents)	Comments
1.	...someone tagged me in an inappropriate picture of a night out i got very angry.	
2.	Last year, I have lost one of my dearest one. His comments, picture is so lively that even after one year of his death I can't believe that he is not in our world.	Unexplainable
3.	I love because of music, and art.	
4.	Two months before I met one of my grade 5 classmates on Facebook. We have not seen for over 10 years. She changed a lot; I did not almost believe my eyes. After seeing her several pictures, then I got to recall our wonderful childhood memory. Was so excited and happy. Therefore, I left a message on Facebook.	
5.	It was a celebration of the New Year of Bengali culture. It reminds me my past days back to my country, spending fun time friends. The consequences are like increase my interest to take part in various way of the program.	
6.	I saw a link on my wall from one of my Facebook friend. When i click it was some virus which messed with my browser and i have to spend whole day to fix it.	
7.	When I get connected with my childhood friends or school friends I feel good, I have some memories with	

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9 http://en.wikipedia.org/wiki/Critical_Incident_Technique

	my friends, but for the busyness, I detached from my Bangladeshi friends. It's a good social connection, and when I see photo of my friends feel good too.	
8.	When I first got the picture of my younger brother. He lives in Germany, Berlin. He is there bout 1 and half year. That was my fist emotional experience.	
9.	It was a call for apology to west Indies player after the incident of throwing stone to their bus in last ICC world cup .at the same evening this group page opens and they arranged a event to say sorry to the player next morning .So I am considering the apology as the main event (not the throwing stone ,though it created the apology event)	Shameful, Guilt
10.	Some photos from my friend profile shocked me whether they were real or edited.	Outstanding
11.	I had a teacher in my university who has migrated to USA a few years ago. We were not in a very good relation when he took my classes. He always used to give me lower grades. After his departure he did not contact that much with his students other than occasions and the most mentionable thing is that he did not keep even his most favourite students in his Facebook friend list. Nevertheless, one morning I logged in my Facebook and found a friend request. When I opened the notification, I found the fried request from him and become very much happy. I doubt he will accept any friend request from any of his students. There I found a friend request from him. Thus I found that he keep a soft corner in his heart for me.	Completeness
12.	Some of the video's made me emotional while watching them. it's somewhat hard to explain the feelings. Some videos make me angry, some will be fun and some are very sportive and some make me think a lot of life of the people around us with nothing.	
13.	Yes I have some good experiences, when I connected with my very childhood friend by the Facebook, I just really word less, cause I got them after a long time, I got one of my fried after 20 years. So I am very happy with	

	this.	
14.	Spoke with a friend on Fb i haven't spoken to for a long time. I felt happy of course.	Wonderful
15.	it depends about the situation in that moment, in general I'm happy when I meet talk to old friend, see friends news	Happy
16.	A blog of a young lady. I get influenced to read her blog .The blog is in Swedish, so it helps me to practice Swedish as well.	Fantastic

Table1: Critical Incidents

The Positive Emotional episode focuses on:
- the pleasantness of entertainment user getting from music, art etc.
- the ability of communicate with old friends, family members
- Joy of sharing special events.
- Surprising instances that created some good experiences,
- the funny content in video enables the user to be happy
- happiness seeing the news and photos of friend and family member
- the links of other sites or blogs let them explore more from it and make them happy.
- the ability to create event to show apology or to say sorry.
- the descriptive term used as: happy, wonderful, fantastic, outstanding, completeness,

The negative emotional episode focuses on:

- the inappropriate pictures tagged on wall,
- emotion of sadness seeing some lost ones pictures
- the unexpected disturbance created by virus evoke the angriness,
- the video content sometime evoke angriness to the user.
- the descriptive terms used as: shameful, guilt, unexplainable.

4.1.3 Stimulus Evaluation Checks

By the assumption of Scherer and other appraisal theorists of emotion (e.g., Roseman et al., 1996; Smith & Ellsworth, 1985) people check perceived information according to different criteria. These checks are built in in our system, but normally remain unconscious. Scherer named these checking mechanisms "stimulus evaluation checks" which are executed in a fixed order.[10]Scherer distinguished five different stimulus evaluation checks :

- Novelty Check
- Intrinsic Pleasantness Check

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[10] www.posbase.uib.no/posbase/.../P_Scherer%20(1986)%20SEC.ppt

- Goal/need Significance Check
- Coping potential Check
- Norm/self Compatibility Check

Novelty checks

In novelty checks people check if external or internal stimulation has changed and if a new event has happened or have to be expected. The data that we have got as per the question that evaluate the novelty checks are shown below:
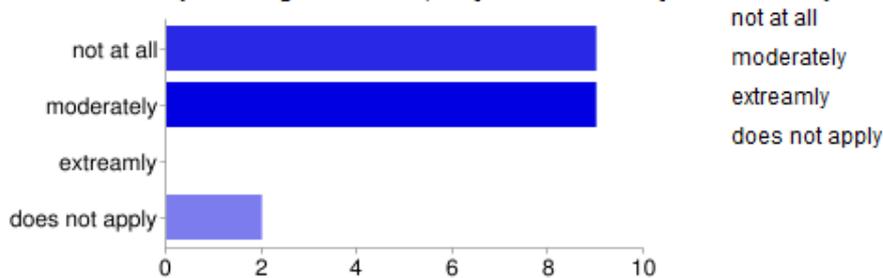
At the time of experiencing the emotion, did you think that ... - the event happened very suddenly and abruptly ?
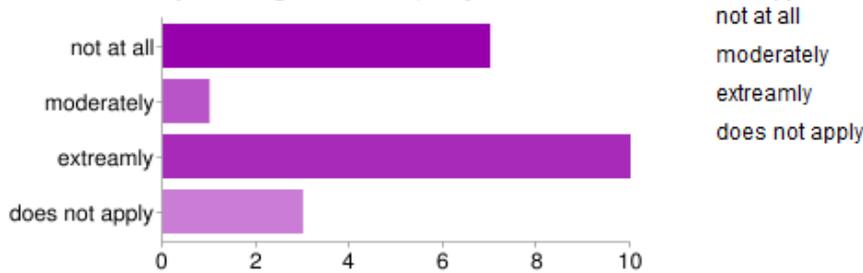
At the time of experiencing the emotion, did you think that ... - you were familiar with this type of event ?
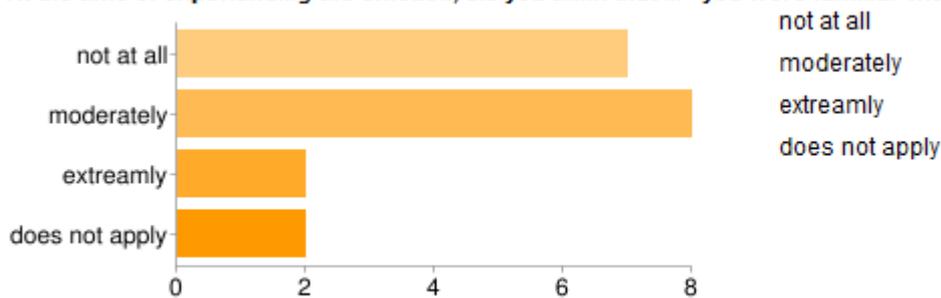
At the time of experiencing the emotion, did you think that ... - you could have predicted the occurrence of the event?

As per the data collected we can see that the 45% or the 10 informants responded experienced that event extreme suddenly and abruptly and for 7 people it was not that sudden. With the familiarity of event maximum percentage is reporting the event as familiar to them and as per the question if they could have predicted the event answers the same portion of percentage for both the not at all and moderate prediction. The overall data expressing the

extreme suddenness in most of the events even though the event was equally predicted or not predicted by them.

Intrinsic pleasantness

Intrinsic pleasantness checks whether the stimulus is affectively positive or negative where an affectively positive stimulus elicits approach tendencies, whereas an affectively negative stimulus elicits avoidance tendencies.[11]

How would you evaluate this type of event in general,independent of your specific needs and desires in the situation you reported above? - pleasant
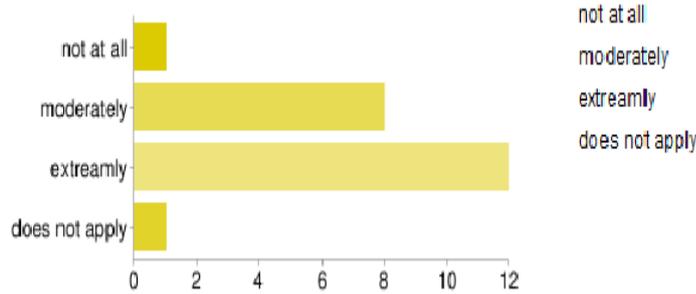
How would you evaluate this type of event in general,independent of your specific needs and desires in the situation you reported above? - unpleasant
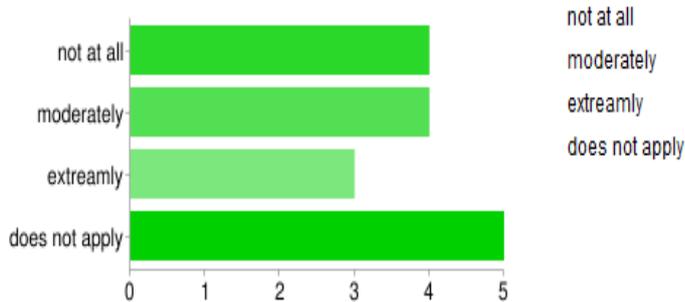
As per the data the event using the Facebook was extremely pleasant for 55% user and extremely unpleasant for 14% user, moderately pleasant for 36% of the user and moderately unpleasant for 18% of the user and not at all pleasant for 5% of the user where ae not at all unpleasant for 18 % of the user. The positive evocation for pleasantness is maximum for this application.

Goal / Need Significance

The Goal/Need Significance consists of four different sub checks: The Relevance Sub check tests whether a stimulus is relevant for a goal or need. The Expectation Sub check tests if an outcome fits expectations for this stage of an action sequence. The Conduciveness Sub check checks whether a stimulus is conducive or hindering to goal achievement. The Urgency Sub check measures to which degree a behavioral response is urgent.[12]

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[11] www.posbase.uib.no/posbase/.../P_Scherer%20(1986)%20SEC.ppt

[12] www.posbase.uib.no/posbase/.../P_Scherer%20(1986)%20SEC.ppt
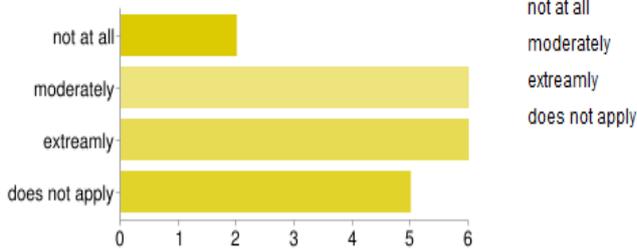
Cause: Agent

At the time of the event, to what extent did you think that one or more of the following factors caused the event? - chance, special circumstances, or natural forces
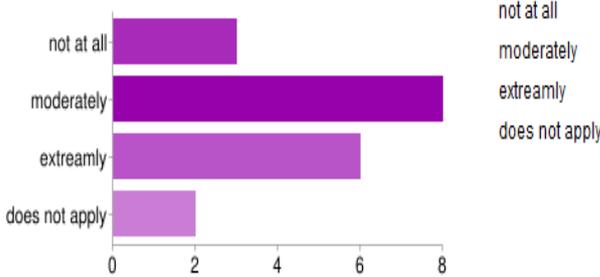
At the time of the event, to what extent did you think that one or more of the following factors caused the event? - your own behaviour
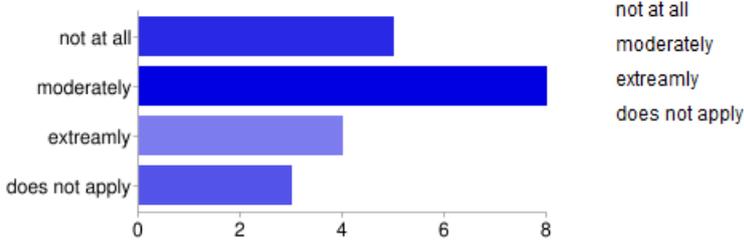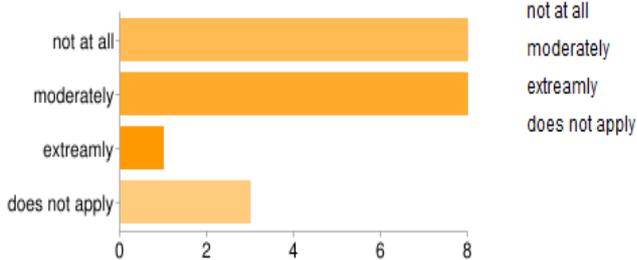

At the time of the event, to what extent did you think that one or more of the following factors caused the event? - the behavior of one or more other person(s)?


The data express the chance, special circumstances or natural forces and the subjects behavior worked as an agent as a cause of the event extremely and it is 36% for both of the cases. The behavior of the other person worked as an agent rated 36% as an extremely and does not apply for 23%.

Cause:Motive

At the time of the event, to what extent did you think that one or more of the following factors caused the event? - -if so, did you cause the event intentionally?

At the time of the event, to what extent did you think that one or more of the following factors caused the event? - -if so , did(this) these other person cause the event intentionally?

not at all
moderately
extreamly
does not apply
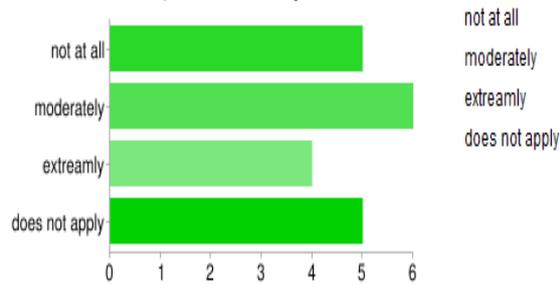
As per the data 36 % did the event intentionally as well as 36% also did not do it intentionally at all by their own behavior.18% of the event was caused extremely by the other person's intention. The rate of the event was27% which was moderately occurred by other person's intention.

Outcome Probability

At the time of experience the emotion , did you think that the real or potential consequences of the event .. - had already been felt by you or were completely predictable?
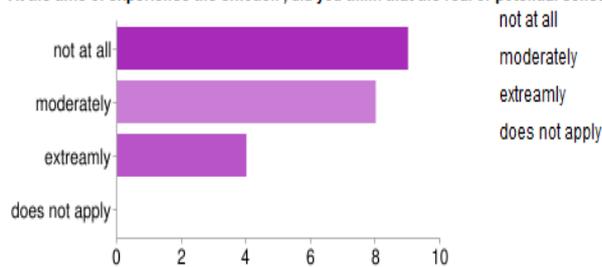
not at all
moderately
extreamly
does not apply

At the time of experience the emotion , did you think that the real or potential consequences of the event .. - could be clearly envisaged and might occur in the near future(with a fairly high probability)?
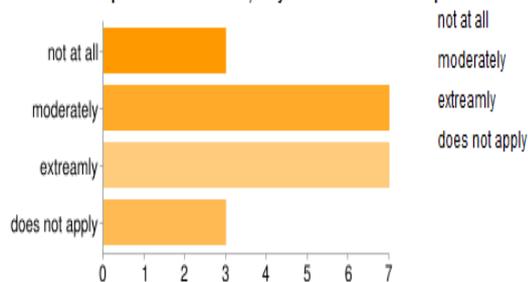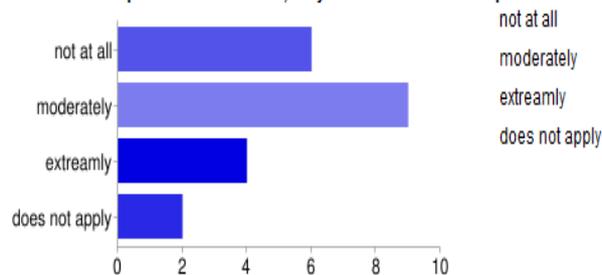
not at all
moderately
extreamly
does not apply

At the time of experience the emotion , did you think that the real or potential consequences of the event .. - were rather unpredictable but might occur in the distant future(with uncertain probability)?
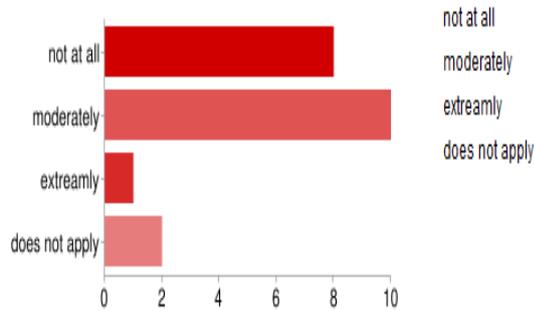
According to 41% of the response the real potential or the consequence of the event were not at all been felt by the participants. Only 18 % of the participants think that the real or potential consequences of the event were extremely predictable by them. The consequence of the event could be clearly envisaged and might occur in the future extremely forecasted by 32% as well as moderately by 32% participant where as 14% voted for not at all. 45% participants moderately believe that the consequence of the might occur in distant future whereas 36% voted for not at all.
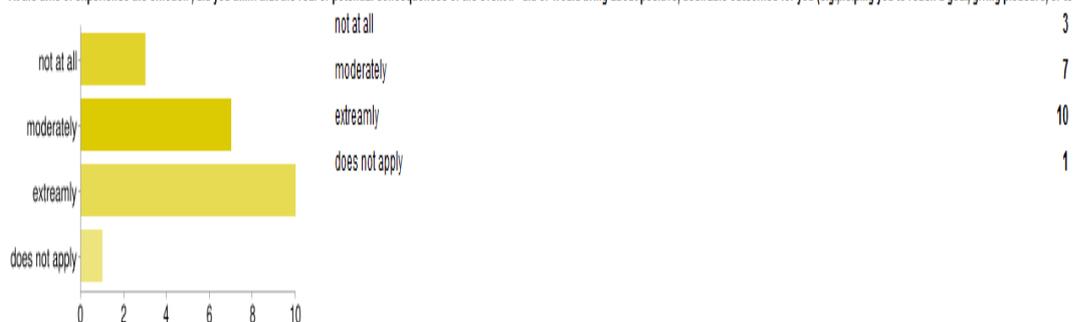
Discrepancy from Expectation

At the time of experience the emotion , did you think that the real or potential consequences of the event .. - had been expected to occur that time and in that specific form?


41 % of the participant thought at the time of experiencing emotion the real or potential consequences of the event had been moderately expected to occur that time and in that specific form whereas   27% voted for not at all and 18% for extremely.

Conduciveness

At the time of experience the emotion , did you think that the real or potential consequences of the event .. - did or would bring about positive, desirable outcomes for you (e.g.,helping you to reach a goal, giving pleasure, or terminating an unpleasant situation)
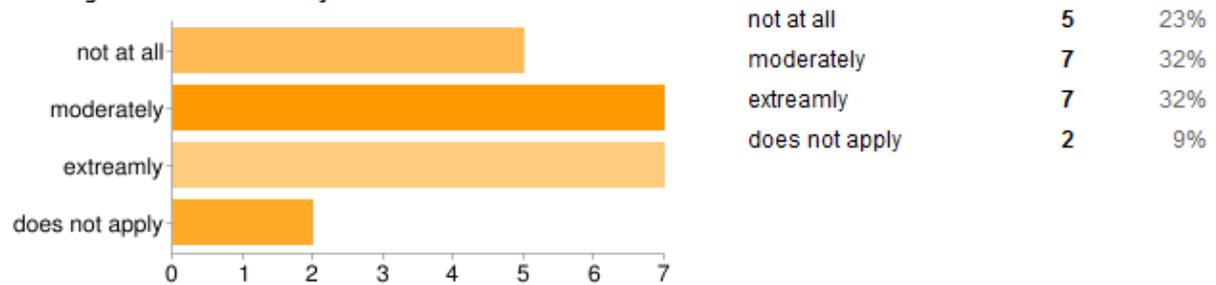
At the time of experience the emotion , did you think that the real or potential consequences of the event .. - did or would bring about negative,undesirable outcomes for you(e.g.,preventing you from reaching goal or satisfying a need,resulting in bodily harm,or producing unpleasant feelings)?

not at all	10	45%
moderately	3	14%
extreamly	3	14%
does not apply	5	23%
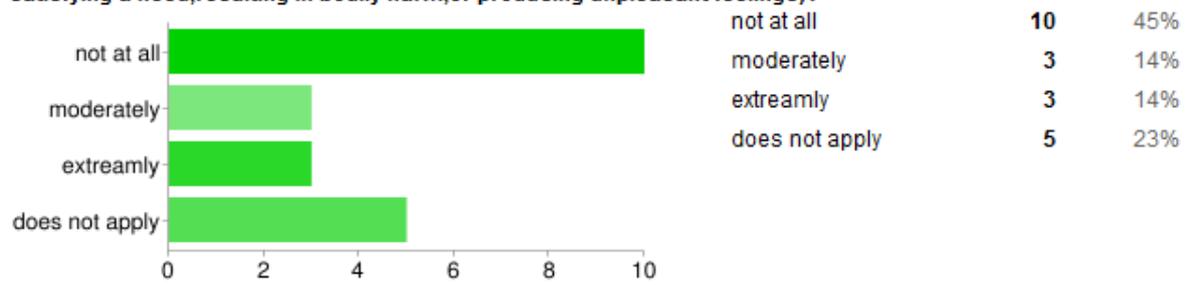
Urgency
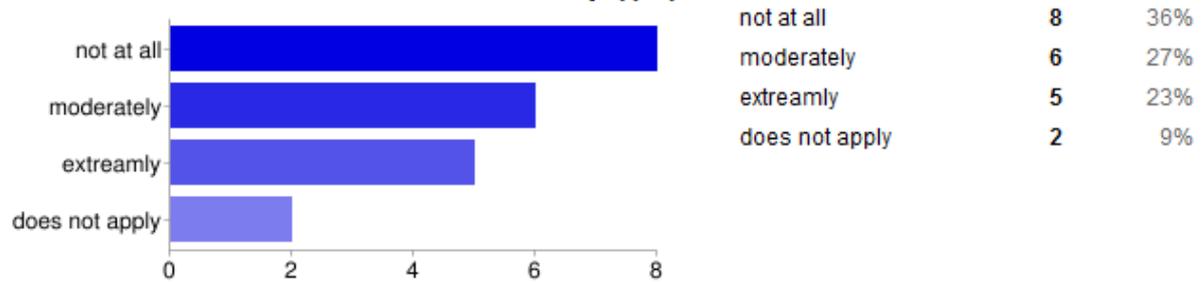
After you have a good idea of what the probable consequences of the event would be, did you think... - that it was urgent to act immidiately?

|		
not at all	5	23%
moderately	7	32%
extreamly	7	32%
does not apply	2	9%

Coping Potential

Control

At the time of experience the emotion , did you think that the real or potential consequences of the event .. - could have been or could still be avoided or modified by appropriate human action?

not at all	8	36%
moderately	6	27%
extreamly	5	23%
does not apply	2	9%

Power

After you have a good idea of what the probable consequences of the event would be, did you think... - that you would be able to avoid the consequences or modify them to your advantage(through your own power or helped of others)?

not at all	5	23%
moderately	10	45%
extreamly	5	23%
does not apply	1	5%
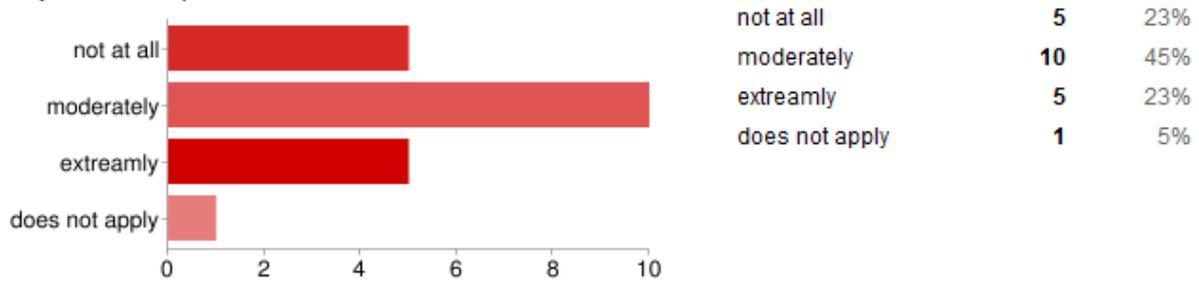
Adjustment

After you have a good idea of what the probable consequences of the event would be, did you think... - that you could live with, and adjust to, the consequences of the event that could be avoided or modified?

|		
not at all	3	14%
moderately	9	41%
extreamly	7	32%
does not apply	2	9%
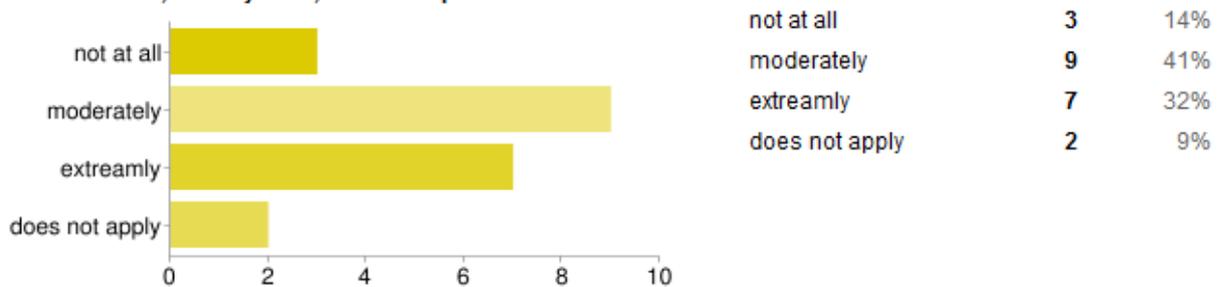
Compatibility with Standards:

Compatibility consists of two different sub checks. The External Standards Sub check judges whether an event, especially an action, is in agreement with social norms, cultural conventions, or expectations of other people. The Internal Standards Sub check judges whether an event, especially an action, is in agreement with internalized norms or with standards that are part of one's self-concept or ideal self.[13]
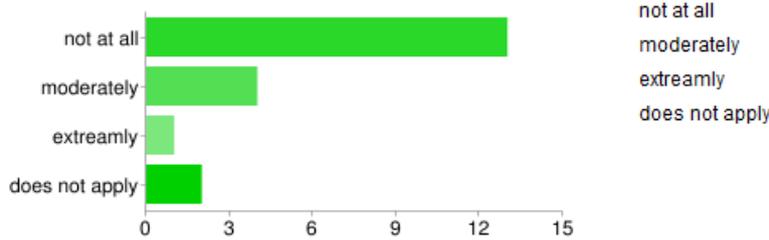
External

At the time of experiencing the emotion, did you think that ... - the action that produced the event were normally and ethically acceptable?


not at all
moderately
extreamly
does not apply

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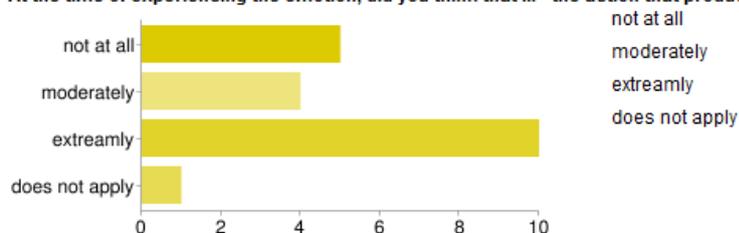
[13] www.posbase.uib.no/posbase/.../P_Scherer%20(1986)%20SEC.ppt

At the time of experiencing the emotion, did you think that ... - the action that produced the event violated laws or social norms


not at all
moderately
extreamly
does not apply

At the time of experience the emotion , did you think that the real or potential consequences of the event .. - were or would be unjust or unfair?
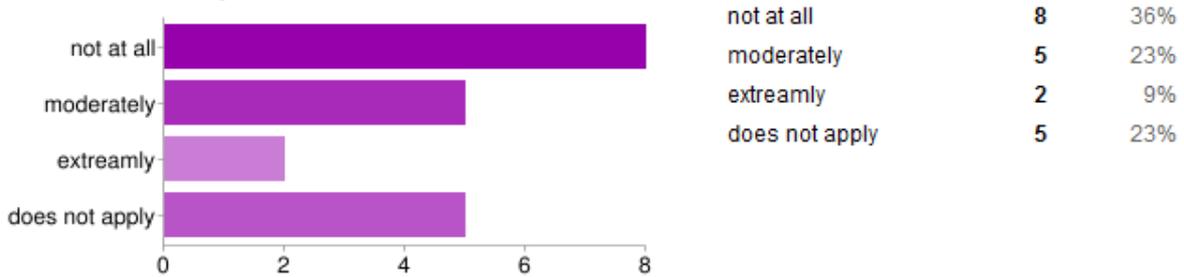
|		
not at all	8	36%
moderately	5	23%
extreamly	2	9%
does not apply	5	23%

Internal:

At the time of experiencing the emotion, did you think that ... - the action that produced the event were normally and ethically acceptable?

not at all
moderately
extreamly
does not apply
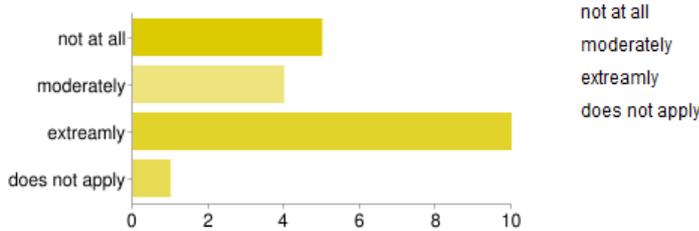
At the time of the event, to what extent did you think that one or more of the following factors caused the event? - -if so, was your behavior consistent with the image you have of yourself?

not at all
moderately
extreamly
does not apply
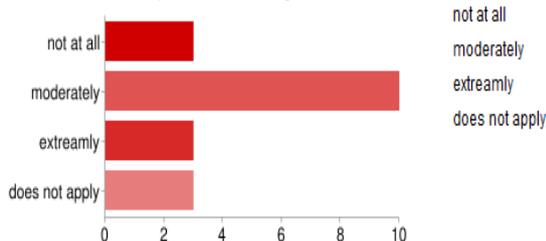
5. Picture of emotions Captured with 3E (Expressing Emotion and Experiences) evoked by the use of Facebook:

3E is a novel method for evaluating emotions combining verbal and non-verbal user feedback of feelings and experience in a usage situation. 3E is a method to asses' emotion to collect rich data of users emotions and related context in using an application or service.3E is a self-reporting method containing both pictorial and verbal reporting.

5.1 Description of the method and captured picture

The inspiration for a new method called expressing emotions and experiences (3E) was the idea that the emotional expressions could be used not only as direct representation of the user's emotional status, but also as a social language which the user can use in communicating with the researcher. There is research evidence that, for example, facial language should be interpreted more as a social language used in a social interaction than as direct representation of the emotional status of the user (Kraus and Johnston, 1979; Fernandez-Dols and Ruiz-Belda, 1995). For example, people may smile when they want to communicate that they are friendly and loving even though they feel sad inside.The 3E method provides the user a structured way of expressing emotions by drawing and writing (Ta¨hti and Arhippainen, 2004).[14]

To evaluate emotion with 3E method the researcher required to invest more time and effort to construct a drawing representing their feelings. Comparing with Sam and Emocards method the process takes more time involvement ,effort from user also.The goal of the SAM and Emocards instruments is to provide a quick and easy way for collecting emotional responses, because it is assumed that the less the person needs to invest cognitive effort for selecting the picture, the better the selection corresponds with the real inner emotional status of the user. (Desmet,2002)

The user here in this method gets scope of using emotional gesture to communicate issues such as heir gratitude's, opinions, user experience. In this method the drawing options enables the user to describe a positive and negative attitude he/she had towards the application. 3E is a self-reporting method where the user is provided with a simple pictorial template for expressing emotions and experience, in the form of a sketched human body. The user is allowed to draw a face to the human figure projecting her/his emotional state to the figure. In a later version of the method two cartoon like speech bubbles were added to the human figure.
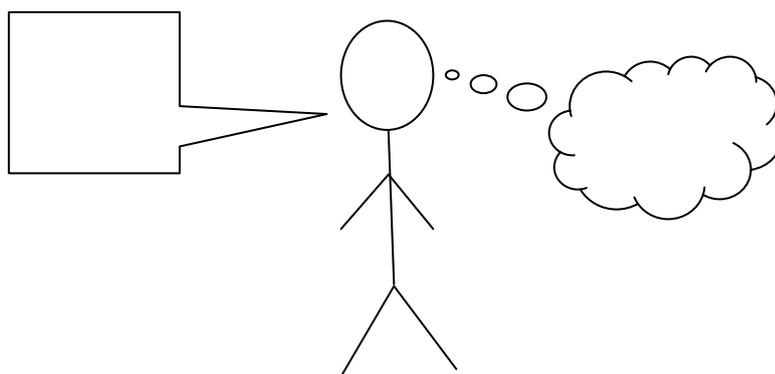

Figure 1: The 3E template

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[14] Experimental evaluation of five methods for collecting emotions in field settings with mobile applications Minna Isomursu , Marika Ta¨hti, Soili Va¨ina¨mo¨, Kari Kuutti

The bubbles can be interpreted so that the cloud-like one is used to depict inner thoughts (whether they are pictorial or verbal) and the other square-like bubble is for oral expression.It gives the user the freedom to express their emotion both by writing and by drawing. According to Marika Tähti and Marketta Niemelä 3E helps different individuals to communicate their feelings as they can choose the way of their preference. And as a projective test, 3E may help users to express negative feelings. The basic idea behind projective tests is to provide neutral stimuli to users and let them to respond in an individualistic way, for instance, interpret the stimuli, fill in the blanks, or make associations (Atkinsonet al.1993).

> *This approach may help the user to safely express negative emotions, which might be difficult in other kind of evaluation situations, for example in an interview.*
> *(Tähti , Niemela)[15]*

The 3E method enables the participants to depict their emotions by drawing as well as writing, so giving information of their feelings and reasons behind them in a way of their preference, and without the simultaneous intervention of the researcher. The picture used in this method not only depicts the feelings of the user but also clarifies the reason behind them and helps to understand the mental context of the user. As per the experiment about the application of the method so much interesting data have been found that really speak up themselves about the emotion felt by the participants in using Facebook. How the application and its functionality along with aesthetics and overall interaction with the contents evoke emotions were found so vividly. For example one of the participants commented on the speech bubble-

> *I want to change my status but the menu in the left side disappears.*

In the square bubble he commented,

> *I want to change the setting of my profile but there is many choices .I don't know which one I will choose to do it.*

The irritation he was feeling using the Facebook in that particular moment is carried out through these comments so vividly. With another comments the depression was expressed in a clear manner,

> *Now a day's unwanted spam is posting in my wall. Many unknown people also connected. Many fake id in Facebook which is hampering us.*
> *We can use it for our betterment and good communication tool.*

In a comment of one participant he mentioned his joy in using Facebook,

> *I feel good to use Facebook when I find my childhood friends or I see some friends whom I can't reach often….i feel good to see my photo album.*
> *It's a good option to spend free time.*

In provided the options of verbal means to explore emotion also being semi structured. Depicting emotion it's so much free in nature and all the emotional dimensions can be opened in one space to have a bird eye view on all the aspects of felt experience one having using an application or artifact.

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[15] http://www.sics.se/interaction/wp9ws/doc/niemela-wp9ws.pdf

6. Conclusion

As per the GAQ the description of the event in the opening of the questionnaire ask people to memorize a memory of a past experience. The findings here with collected data is vividly pointing to the issue how people are emotionally attached using the particular application (Facebook). In the description of the event every one describe a story of their life that has touched them emotionally and made an emotional attachment with the application or artifact that it has become a part of their everyday life. As per the process rather than only being an event it is expressing more than just an event but emotionally loaded experience of attachment with the artifact(or Facebook as an application).The method can be seen as another dimension rather than only the results of an individual's appraisal process in the case of a specific emotional episode. And according to Marc Hassenzahl   true user experience is how people relate the artifact with their life as an emotional attachment. Emotion to be valid as a thread of user Experience is needed to be considered by this perception as per Marc Hassenzahl description. The other question despite of evaluating the positive and negative aspect of episodic emotion deals with inquiring the felt experience surrounding it with its stimulus evaluation checks. On the other hand the 3E method captures the moment by moment   emotion that the user feels with the usage of the application or the artifact. The pleasantness or unpleasantness or the emotions evoked by the artifact and the mental context of the user in usage of particular artifact is the concern of this method. As a method 3E does not apply well to the situation where very precise information or evaluation of detailed properties of emotion is required but it is good for the multi-faceted interaction situation(Tahti,Niemela).Particularly it is a god method if we need to understand the context in which the feeling is evoked in the mind of the user. As a projective method and with no researcher present 3E may facilitate expression of negative feelings towards the evaluated application or system. (Tahti,Niemela).As a method in it is more time consuming.by the Hawthorne effect which is is a form of reactivity whereby subjects improve or modify an aspect of their behavior being experimentally measured simply in response to the fact that they are being studied(McCarney et al.2007) with the presence of the researcher then it might produce wrong result.Another main disadvantage of 3E research is that the responses are subjective and open to interpretation for the researcher. A researcher might find it difficult to make respondents feel comfortable enough to fully disclose their true opinions and feelings. The participants may answer in such a way that they think will please the researcher or adhere to socially acceptable standards. When collecting and interpreting the data from 3E research method, the researcher may make interpretations that fit with his/her intended conclusion. The researcher may also have difficulty analyzing and interpreting the findings. Unlike most of quantitative method the Geneva Appraisal Questionnaire does not have complete lack of causation since it ask for the description of the event that produces emotional experience. The researcher might get some clue of the cause from it though it does not ensure or promise the causation since it is a self-reported data and the participant might not answer properly and if the questionnaire is filled up in front of the researcher he/she (participant) might give data such a way that he think will please the researcher or adhere to socially acceptable standard. The Geneva appraisal questionnaire has tried further investigation to inquire the cause through some question (question no 12to 17). Despite this it tries to find the characteristics

and consequence of the event as well as the reactions with respect to the real or expected consequences. This method (GAQ) also goes for inquiry the intensity and duration of the emotional experience which by 3E is not confirmed. But the 3E allows the user with more freedom to depict the method context freely which is somehow not that open to express by the Geneva Appraisal questionnaire. As a summery it is vivid that the study shows that the two different methods of capturing emotion show two aspect of emotion with sharing some common aspects. The outcomes of the study shows that the 3E method shows the spontaneous emotional instances in using artifacts and GAQ mostly reveals whether the evoked emotion is positive or negative.

GAQ (-ve Emotion) •———————— **3E** ————————• GAQ (+ve Emotion)

Figure: Captured emotion by 3E and GAQ

The figure above shows the two poles (positive and negative) of evoked emotion captured by the Geneva Appraisal Questionnaire (GAQ) and the Expressing Emotion and experiences (3E) method sharing some of the emotion with GAQ. 3E deals with the emotion that the user is experiencing right at the moment he is using it and the GAQ deals with the aspect of the emotion by which the application or the artifact is attached to his life relating to the story created by the experience. Both method captured emotion but the aspect of emotions are not all same. Since it is important for the designer to identify applicable and feasible method that can be used in designing experience and evaluating experience what the experience might be like before the design is available, this approach for the evaluation of method learning might come in help. Because by this approach it is possible to inform designer about the aspect of emotion these method captures and using these information the designer will be aid to choose appropriate method to apply for their specific design purpose. I have tried to evaluate method learning with two out of several methods. The other methods can be studied and evaluated by capturing to find what they really tell us.

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