

Is THIS 'Delight'?

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While investigating the concept of 'Delight' systems design, we believe it is imperative to consider and discuss the ways that a 'delightful' interface could be evaluated and assessed. The field of HCI incorporates a number of different techniques for evaluating systems and services. In this paper we argue that if a 'delightful' interface constitutes something different from a simple yet 'satisfying' interface, then the evaluation techniques that we currently have available may not be sufficient for the assessment of 'delight' in a system's interface and user experience. We are suggesting introducing new evaluation methods and extending *current ones in an attempt to 'capture' and 'assess' delight in light of our involvement in Serena*, a multi-disciplinary project that aims to provoke serendipitous connections among researchers. We draw examples from the field of *affective computing* in order to get an insight on how 'delight' as an emotion could be tracked and evaluated.

evaluation, delight, user experience, interface design, user satisfaction, interaction, affective computing, serendipity

1. INTRODUCTION

Prior to the evaluation of a concept, idea or a product, it is essential to look upon the definition of that concept or idea and the specification of the product. So, what exactly is 'delight'?

According to Oxford Dictionaries, 'delight' is "great pleasure" or "a cause or source of great pleasure" [Oxford Dictionaries, 2012]. Based on Agarwal and Prasad's [1999] notion of individual differences and their criticality in interface design and user perception, we can expect that peoples' perception of 'delight' may vary. For example, some people would consider 'fun' to be an element of 'delight' while others may consider 'delightful' a system interface that is fully functional (according to their perception and acceptance of functionality).

In this paper we will consider the current approaches and perceptions of 'delight' in research, whether and to what extent 'delight' is related to user satisfaction and how we can draw insight from the current themes in affective computing regarding the identification and evaluation of emotions by systems.

2. IS 'DELIGHT' RELATED TO USER SATISFACTION?

Thirty people from different backgrounds (i.e. Computer Scientists, Software Engineers, Teachers, Linguists, Psychologists, Home-makers) were asked to express in a sentence what 'delight' or something being 'delightful' means for them. Eleven responses were collected giving a response rate of 37%. Responses indicate that at least three elements of emotional behaviour are exhibited in relation to 'delight'. These are:

Excitement and Physicality

*"I'm delighted (or: it is such a delight, or it's so delightful) when you **pick me up and spin me round.**"*

Ease of Use-Usability, Intuitive and Fun

*"I find it "a delight" when a system is **easy to use, easy to understand** what is happening (clear on how it does things and **how it produces result**) and kind of **fun/pleasurable** to use."*

Functionality, Amazing GUI

"For me (as a Programmer - Software Analyst and Engineer) there is **no such thing as "delightful"** as a term of interacting with a system. All things, for me, are divided in **functional and non functional**... I could describe as "delightful" a system that **combines exceptional functionality with amazing GUI...**"

Pleasure, Satisfaction and Excitement (maybe!)

"Delightful is something that **gives pleasure and causes satisfaction and excitement (maybe)...**"

Delight is something more

"When the **expectation** is for something good and the **reality surpasses that expectation**. That's delight. True of life and true of IT..."

From these responses, it is suggested that people experience the notion of 'delight' in slightly different ways. However, one thing is prominent - that 'delight' incorporates some element of 'satisfaction' whether this is physically-bound (i.e. Physicality), operationally-bound (i.e. Functional) or emotionally-bound (i.e. Excitement and Fun). Furthermore, there is a suggestion that 'delight' is something more than satisfaction. It incorporates an element of positive surprise. It is worth noting that the above-mentioned notions of delight need not necessarily be mutually exclusive.

Having in mind these individual accounts of 'delight', a next step would be to contemplate potential ways to measure, assess and evaluate the 'delight' as experienced and expressed by the users of a system. Indeed, it would be of paramount importance to be able to identify and evaluate 'delight' in interface design, as the concept of 'delight' may provide a direct measure of a user's emotional state on a technological level.

Satisfaction is considered to be a key element of the user experience [Hazzenzahl, 2005]. In fact, it is reported that the use of technology can involve people affectively whether it is in Education [Jones & Issroff, 2004], in Human-Computer Interaction [Boehner, De Paula, Dourish & Sengers, 2007] or in Games [Chumbley & Griffiths, 2006]. In psychology, a number of studies have been focusing on identifying and explaining emotions either from a Neuropsychological perspective [Davidson, 1992] or from a Social Psychology perspective identifying emotions through facial movement [Bassili, 1979].

Affective computing is concerned with enabling and accommodating emotional information exchange

between humans (users) and machines (computers) [Picard, 1999]. How many times have people as users expressed emotions in front of a computer as a response to a computer's operation? According to Picard [1999], this information is being lost as the computer cannot recognise the emotions of the users towards it.

2. 'DELIGHT' AS A MENTAL AFFECTION

Is 'delight' an emotion? According to James [1884], emotion is the feeling generated by our perception of an exciting fact. He believes that the effects of an emotional reaction are manifest in the body as well. The bodily reaction occurs at a first stage, then the emotional reaction and the rationalisation of our feelings take place. For example, someone is afraid because he/she trembles, as opposed to trembling because he/she is afraid. As James [1884, p.194] distinctively points out:

"A purely disembodied emotion is a nonentity"

Despite the criticism that his theory received, he provided a framework to identify emotion. Based on James definition of emotion, if 'delight' follows a bodily excitement and expression of any type, then 'delight' is an emotion. Recent studies in the fields of Marketing, Human-Computer Interaction and Design have been referring to the concept of 'delight' as an emotional reaction in response to customer engagement and satisfaction [Chitturi, Raghunathan & Mahajan, 2008], user enjoyable experience [Fleck, 2003] and as a 'surprise' effect when incorporating ambiguity in design [Gaver, Beaver & Benford, 2003]. According to Gaver et al. [2003, pp.233] "ambiguity (in design) can be intriguing, mysterious and delightful".

3. SERENDIPITY FROM 'DELIGHT' OR 'DELIGHT' FROM SERENDIPITY?

Could serendipity then, which incorporates the element of surprise [Sun, Sharples & Makri, 2011] be considered a mental vessel of 'delight'? Or could 'delight' provoke serendipity? Investigating 'delight' in the context of design-for-serendipity is an intriguing goal for SerenA, a multi-disciplinary research project which aims to provide a service that will accommodate serendipitous connections among researchers and between researchers and resources. Designing an interface and a service that supports and promotes this state of mind aligns with the notions of affective computing and emotional design.

Despite the fact that 'delight' has not been thoroughly considered and investigated in relation

to serendipity, it has been referred to as an emotional state that could be an effect of serendipitous connections. For example, Leong [2009] contemplates that serendipitous encounters involve the elements of 'magic' and 'wonder' to delight and thrill. Similarly, Andre, Teevan and Dumais [2009] recognise that 'delight' and the unexpected are one key aspect to serendipity while sagacity is another one.

4. EVALUATING EMOTIONS – THE CASE OF 'DELIGHT'

Affective computing and emotional design appear to be the mediums for providing an insight into 'delightful' design for a 'delightful' experience; an experience which will provide a deeper user engagement and satisfaction. There are currently two main strands of evaluation approaches for emotions in affective computing: the informational account and the interactional account.

Informational account

This account is based on the dominant information-processing model of cognition in Human-Computer Interaction. Emotions are just considered to be another piece of information. Examples of such approach include measuring bodily effects such as facial expressions, galvanic skin response and tremor in response to emotional states through sensors and cameras [Bassili, 1979; Boehner et al., 2007] or mood states through the use of I/O devices [Zimmermann, Guttormsen, Danuser & Gomez, 2003]. However, in real life people do not rely solely on body reactions to form a judgement on someone's emotional state. Despite the 'objectiveness' and ease of measure that such metrics offer, they cannot constitute a complete evaluation method for assessing emotions such as 'delight'. Measuring 'delight' based solely on body reaction metrics can mislead the evaluator regarding the factors that led to the expression of an emotion of 'delight'. Imagine the situation where someone faces a glucose crisis (and therefore sweats) while interacting with a system. A computer can potentially detect the sweat (galvanic skin response) but it cannot detect the right reason for this response.

Interactional account

According to this account, emotion does not occur internally – as it has been considered by the strict informational account – but instead it manifests dynamically in relation to external factors such as culture. A number of studies have suggested that an interaction exists between culture, social elements and emotions [Boehner et al., 2007]. An expression of a particular emotion i.e. 'delight' may occur as a result of a long-term and location-based interaction rather than as a result of a momentum

interaction. This may happen, for example, in a situation where someone experiences 'delight' at a particular time (i.e. while interacting with an interface). This experience of 'delight' may be due to a number of different factors such as memory (he/she remembers something from the past and feels 'delight') or topological/environmental settings (i.e. sitting at a place with a nice pleasant breeze). An interactional account cannot pin down automatically the reasons for causing 'delight' to the individual.

Setting aside the accounts that exist for detecting and evaluating emotions, it is critical to be able to determine whether an emotion is considered to be of 'delight' or not. 'Delight' as an emotion is of positive nature. However, other emotions are considered to have positive nature such as happiness, excitement, contentment. How is it possible to differentiate these positive emotions? Or just it does not matter?

Zimmermann et al. [2003] have adopted various types of evaluation measurements to emotions (physiological, psychological and behavioural measurements) while other studies such as the Sensual Evaluation Instrument (SEI) [Isbister, Hook, Sharp & Laaksolahti, 2006] allows the users to interpret and detect their emotions through touching particular (emotionally-unassigned) objects. A potential attempt to detect and evaluate 'delight' could be the adoption of a combination of objective (physiological metrics, momentum responses) and subjective measures (self-reports and reflections).

Furthermore, the complexity and dynamic nature of the concepts of 'delight' and 'serendipity' urge the development of new ways of exploring and evaluating such concepts. For example, dynamic self-assignment of emotional states by the users of a system while capturing physiological and behavioural metrics may be a potential direction for evaluating complex states such as 'delight' and 'serendipity'. However, what aspects of an interface could contribute to a user's notion of 'delight'? What constitutes a 'delightful' interactive experience with a system? Is it only certain aspects of an HCI with a system that contributes to the experience of 'delight' or is the overall interactive experience that determines that? Nonetheless, detecting and evaluating 'delight' is far from straight-forward. The main reason for that is the fact that 'delight' incorporates different core components that are not necessarily self-attached exclusively to the concept of 'delight'.

5. CONCLUSION

This paper discussed the concept of 'delight' in design under the light of user satisfaction, user experience and serendipity. From our research it is suggested that 'delight' incorporates notions of pleasure, satisfaction, functionality, excitement, physicality, all of which constitute the user experience. However, it has also been suggested that 'delight' is something more than satisfaction. Therefore, there is a need to investigate how it could inform systems' design and how we could evaluate 'delight' in this context. As 'delight' being suggested to be part of user experience, it is imperative the HCI field to consider 'delight' as such and explore the need for appropriate evaluation methods to assess, identify and include 'delight' in HCI and in design in particular.

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