

Experience as ‘Meaning’: Creating, Communicating & Maintaining in Real-Spaces

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Introduction

Designers of interactive systems have two main goals to attain. The first is to design a system with “appropriate” representations, interactions and functions. And the second is to see how the users use the designed system and what their experiences are. The first is the primary goal but depends heavily on the second. In this paper we focus on the second goal. The proliferation of novel computing technologies into our day-to-day social lives has imposed development of new perspectives to analyze different human activities and their attitude towards the technology. These technologies play a diversity of roles – widely beyond the traditional computing device, placing the non-technical product qualities such as pleasure, fun, trust, etc. amongst the set of main goals of system design. This new era of *user-experience* has challenged designers to understand human experiences and apply them into the design process.

Experience is a *subjective* and *holistic* phenomenon [11] where users *construct* the eventual experience within the settings afforded by the environment. Clearly, the context where this interaction takes place plays an important role in defining the experience. Context has been interchangeably used to address spaces and places. However, Harrison & Dourish [7] argue that spaces are three-dimensional physical representation of context where the human activities are possible. Whereas places are referred to as the lived realities where the actual experience comes about. To them, “*Space is the opportunity and place is the understood reality*”. In this position paper, however, we focus on conceptualizing user-experience and see how context plays its part in it. We conceptualize experience as ‘meaning’ that is created, communicated and maintained by users during their interaction with the system.

Experience as ‘Meaning’

Forlizzi & Battarbee [4] have categorized different approaches to understand user experience into three major categories: User-centered, Product-centered and Interaction-centered approaches. The user-centered approach focuses on different human aspects that contribute towards the experience with the system. They go beyond traditional usability criteria and target different ways to capture and understand user’s motivations, actions, etc. The product-centered approach focuses on different attributes of product’s design (e.g. appearance, user interface, novelty, etc.) and their influences on user’s experience. The interaction-centered approach follows a pragmatic way to understand experience. This approach views experience as a dynamic process where both the user and the product contribute towards an unfolding experience in real time and real context. In this approach context is not defined by the physical environmental settings, but by what users do and what its outcome is [3].

By following the interaction-centric approach, we conceptualize experience as ‘meaning’ that is created, communicated and maintained by a user during his interaction with the system. Dourish [2] points out that *the source of meaning is not a collection of idealized entities but it can be found in the real world in which we act, and which acts upon us*. From a phenomenological point of view, the world is already filled with meanings. For us, the way we encounter the world gives it a specific meaning. And the way we act upon it gives it a different meaning. Hence, it is only our actions (that the environment affords us) can determine a meaning in the world. In his work, Dourish [2] also refers to “*Philosophical Investigations*” by Wittgenstein [10] that focuses on ‘meaning of languages’. Wittgenstein argues that meanings are not attached to the language or its

linguistic expressions, but rather the way in which the language is used. He compares language with human activities, and argues that meaning of a language can only be determined by the way the language is used in a particular activity to accomplish something. To him ‘truth’ was not in the statement itself, but in the appropriateness of the statement i.e. the context in which the statement is used.

During a user’s interaction with a system, the quality of an experience depends on how ‘valuable’ or how ‘meaningful’ it is for the user. From a designer’s point of view the phrase “designing experience” means communicating a specific experience to its user through a designed system. And a successful “experience design” means that the user perceives an experience exactly the way the designer has intended to. In this paper we do not talk about designing, but we provide a conceptual base for designers to understand experience. In the following part of this section we will investigate how the meaning is ‘created’, ‘communicated’ and ‘maintained’ by users.

1. Creation of the meaning

In his work ‘Art as Experience’, philosopher John Dewey [1] provides a pragmatic view to understand human experience. He argues that in our day-to-day lives, we continuously experience things happening around us. However, he suggests that it is very important to distinguish the ongoing, continuous experiences with a specific and identifiable experience. He defines an experience as “*experience is the result, the sign and the reward of that interaction between organism and environment which, when it is carried to the full, is a transformation of interaction into participation and communication*” [1]. To Dewey, such an experience is a whole and carries with it its own individual quality and self-sufficiency that gives a meaning to the experience. Dewey identifies four conditions that help for creating or defining an experience. However different these experiences may be, they all have to satisfy these four conditions and without which an experience cannot come into existence.

To Dewey, the first and most basic condition is set by the fact that an experience is a result of interaction between a live creature and an experienced object in a specific environment. They both contribute to shape the quality of an experience. The second condition is that an experience has a beginning and an end. In an experience the flow is always from something to something, in which every successive part flows freely without seam and without unfilled blanks. As one part leads into another and as one part carries on what went before, each part gains distinctness in itself. Dewey also mentions that in an experience there can be halts, interrupts, etc. but they define or punctuate the overall quality of experience. The third condition is that an experience has a unity that gives it a name. The existence of this unity is constituted by a single quality that pervades the entire experience in spite of the variation of its constituent part. The fourth condition is that in an experience a user ‘does something’ to the object or performs some action (e.g. a man lifts a stone) and in consequence he ‘undergoes something’ (he suffers its weight, for example). And the undergone properties help the user determine further doings. And this process goes on until the experience finishes its course. Dewey also points out that the quality of an experience depends on the relationship between this – doing and undergoing processes. This action and its consequences must be joined in perception. They form a meaning of an interaction and hence the meaning of an experience. This fourth condition clearly gives us a hint that in order for an experience to be successful the doing-part and undergoing-part should complement each other. Dewey also points out that if the doing and the undergoing parts are not balanced, it could lead to an undesired experience.

We represent Dewey’s ‘doing’ and ‘undergoing’ parts, respectively, as action and feedback between a user and his environment. Here, the action and the feedback could be mental or physical. Based on these action and feedback, the meaning is ‘created’ by the user using his information processing and sense making skills.

2. Communication of the meaning

J.J. Gibson’s [6] work on direct perception (also known as the ecological approach) has been very influential for interaction designers. Gibson was a strong opponent of the cognitive approaches, which separated *seeing* from *doing*. Gibson termed the concept of ‘affordance’. Here, we provide a brief summary for the concept of affordance. Gibson defines affordance as following,

“The affordances of the environment are what it offers users, what it provides or furnishes, either for good or ill.”

Affordance can be thought of as a combined ‘user-environment system’ whole and not as user-only or environment-only views. Affordance is not a property of an environment but it is better thought of as the common ground between the user and his environment. E.g. the glass of a window will afford a person looking outside, because the person has eyes to which the glass is transparent. But in the rainy or foggy atmosphere the same window will not afford that person the same clarity for looking what is going on outside. Dourish [2] defines the concept of affordance as three-way relationship between the environment, the organism and an activity. I.e. when we talk about affordances it shows the compatibility between the environment, the organism and an activity.

There are different interpretations available about Gibson’s original definition of affordance. For example, Norman [9] categorizes affordance into real and perceived affordances. Gaver [5] categorizes affordance into perceptible, false and hidden affordances. To our interpretation, what the environment affords to its user is what the user perceives about his environment. Hence, affordances are by definition ‘perceptible’. Clearly, there would be more to the environment than what the user actually perceives about it but for the users only what he perceives really matters to him. There can be either ‘true’ or ‘false’ affordances.

Gibson [6] suggests that the concept of affordance depends heavily on how the action and perception are coupled. In his definition of affordance he indicates that affordances could be specified either for “good or ill”. We interpret this as, if the action and perception are positively coupled for the users that they can make intended and desired meaning out of it; then the affordance is for “good” – we address this as true affordance. And if the action and perception are coupled in a (misleading) way that the users cannot make the intended and/or desired meaning, then the affordance can be said to be for “ill” – we address this as false affordance. Affordance should not only specify the perceived action possibilities but also the details of these actions. For example, let’s have a look at different types of ball, a cricket ball, a rugby ball and a football. Now all these balls afford their users to hold and throw them in different ways. Clearly the shape of the ball affords its users to use it in different ways. Michaels & Carello [8] extend Gibson’s concept of affordance and argue that affordances are not only concerned with action opportunities the user is capable of, but also his ‘intentions’. Here the intentions indicate the goal-oriented behavior of the user. Clearly if there are no intentions to use the system (within the environment) then it doesn’t matter to the user what the system affords and hence those affordances become of no importance.

Affordance forms a relationship between action and meaning. This notion of affordance creates a sort of communication-channel between users and their environments.

3. Maintenance of the meaning

The notion of affordance sets up the bases for how the meaning is communicated between the user and his environment. In this part, we will show how this relationship (communication) is maintained and manipulated by the user himself. Dourish [2] terms the notion of ‘coupling’. Coupling is not only a physical phenomena but a mental too. Here, coupling addresses how users access the set of abstract computational phenomena (system affordances) and act upon them

based on their goals and mental state. As we stated before, the world is already filled with (multiple) meanings and a specific meaning arises from our specific action in a particular context, and it is these different coupling mechanisms that allow us to shift amongst multiple meanings and extract a particular view of the world as its meaning [2].

In “Experience as Meaning” conceptualization, we focus on how a system’s abstract phenomena (e.g. function, interaction, representation, etc.) in a specific context, are coupled with human phenomena like emotional, cognitive, sensual, cultural, physical, etc. It is these different coupling mechanisms between human and environmental (system) phenomena that help users *construct* a specific meaning through the way in which users incorporate these couplings into their work activities and practices in real contexts.

Conclusion

All interactive systems elicit some sort of experience in users. Importance should be given to how meaningful an experience is for the user. We found out that a meaning does not reside in a system as such, but the way the system is used in a particular context. In this paper, we described how meaning is created, communicated and maintained by the user himself. The core idea behind the “Experience as Meaning” concept is three-fold. First, it is the user’s action that sets up the bases for meaning. Second, affordance provides a ‘common-ground’ for the relationship between users and their environment and it is the affordances that help communicate meaning between users and environment. Third, the way users construct a meaning (hence, experience) can be represented through different coupling mechanisms. The notion of coupling, initiated by Dourish [2], help maintain and manipulate the relationship between users and their environment. In all three points, context has been the centre of importance. In this paper, we have not focused on the how-to-design part but have attempted to provide a conceptual base by which designers can understand and analyze experience of an interactive system.

References

- [1] DEWEY, J. 1934. *Art as Experience*. New York: Perigree.
- [2] DOURISH, P. 2001. *Where the action is: The foundation of embodied interaction*. Cambridge, Massachusetts: MIT-Press.
- [3] DOURISH, P. 2004. What we talk about when we talk about context. In *Personal and Ubiquitous Computing, Volume 8, Issue 1 (February 2004)*. Springer-Verlag London, UK
- [4] FORLIZZI, J., BATTARBEE, K. 2004. Understanding Experience in Interactive Systems. In the proceedings of DIS 2004. Cambridge, MA, USA. ACM Press. 261-268.
- [5] GAVER, W. 1991. Technology affordances. In *Proceedings of the CHI 1991*, ACM Press: New York, 79 – 84.
- [6] GIBSON, J.J. 1986. *The Ecological Approach to Visual Perception*. Houghton Mifflin Company. USA.
- [7] HARRISON, S., DOURISH, P. 1996. Re-Place-ing Space: The Roles of Space and Place in Collaborative Systems. *Proc. ACM Conf. Computer-Supported Cooperative Work CSCW’96 (Boston, MA)*. New York: ACM.
- [8] MICHAELS, C., & CARELLO, C. 1981. *Direct perception*. Englewood Cliffs, New Jersey: Prentice-Hall.
- [9] NORMAN, D. 1999. Affordances, conventions, and design. *Interactions*, ACM Press, New York, 38 – 42.
- [10] WITTEGENSTEIN, L. 1953. *Philosophical Investigations*. Oxford: Blackwell.
- [11] WRIGHT, P., MCCARTHY, J., MEEKISON, L. 2003. Making sense of experience. In BLYTHE, M., OVERBEEKE, K., MONK, A., WRIGHT, P. *Funology – From usability to enjoyment*. Kluwer Academic Publishers. 43-53.