
Design and Appropriation: Studying a Digital Artifact in Different Contexts

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Abstract

The paper presents two explorative case studies to contrast how a novel and rather unconventional digital artifact is appropriated by different users in different contexts. Appropriation is defined as the process of how individuals use technology spatially, temporally and functionally. The role of the designer and her potential in facilitating the process of appropriating and creating space for personal adaptations and understandings of technology is discussed in the light of previous research on ambiguity, openness and restrictedness in design. The designer may begin a design and thereby purposefully influences how it is perceived. The user completes the design through the assignment of their own meanings, processes of personalization, own content or creative use. The contributing roles of *time* and *context* to the understanding of personal appropriation is highlighted and questions posed for future research.

Keywords

Design, User Experience, Appropriation, User Studies, Reflection, Materiality.

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

We understand appropriation as a complex, dynamic and highly personal process of how individuals use technology spatially, temporally and functionally. In this regard, the function of a device can go beyond features and configurations provided by the designer. Individuals create their own ways of understanding and using technology, and may assign personal or emotional values and meanings to it. Being able to make sense of technology for oneself - giving it a purpose and place in one's life or creatively repurposing and adapting it for one's own uses - presents an important aspect of successful design. However, if it relies largely on the individual as to how technology is appropriated, what constitutes the role of the designer in this process? How can designers facilitate the process of appropriation or create space for personal adaptations and understandings of technology?

Space for Personal Appropriation

In recent years, debates have evolved in HCI regarding ambiguity [1], openness [5] and restrictedness in design and how to find a balance between them [2]. It has been argued that a more open-ended design may facilitate appropriation by a wider range of users and in different contexts. In inviting individuals to make sense of rather ambiguous technical employments, the relationship between users and technology becomes more of a dialogue, which can lead to a close, potentially meaningful and sustainable relationship.

When we talk about *openness* of technology, we do not mean that the design is entirely free of indicators as to how it can be used or understood. In fact, every technical object or system is constrained to a certain extent by its shape, functional configuration or

materials of construction. Such characteristics evoke expectations as to *how* it can be appropriated. They are based on our prior experiences with similar technologies. Related interpretations are not only inevitable but also necessary in terms of the usability of a certain technology. In addition, the appearance and materiality of a device influence if it is perceived as beautiful, and affects *where* individuals' physically place it in a spatial environment (e.g. at home, while waking), which again suggests different uses [6]. Given functions as well as personal roles or meanings assigned to technology may inform *when*, how often and to which occasions the design is used. Individuals can also contribute to their understanding of technology by assigning personal meanings to it, beyond what was intended by the design. They can give it a specific role in their daily life or associate emotional values to it. Similarly, a design can be physically extended or enriched by a user's own content and creativity [4].

Importantly, the relationship between user and technology is not fixed but instead involves a continuous and dynamic re-attribution of the system's purpose(s) through the interaction related to the past, present and future. To facilitate a personal appropriation, it can be argued that designs should not be too prescribed in terms of their spatial, temporal or functional scope. However, systems which are too ambiguous carry the risk to be perceived as instances of a poor design. Thus, to what extent can a designer create a certain balance between openness and restrictedness in the design that allows personal appropriation of technology?

In the following, we briefly present two case studies involving a novel and rather unconventional digital



Figure 1: Closed box artifact: It is 17 x 19 x 12cm³ in size and weights approx. 2 kg.



Figure 2: Opened box artifact with a screen to the left and a key object (including the RFID tag) to the right.

artifact [7]. In applying this specific artifact in different contexts and comparing individuals' experiences with it, we explored different roles of design and users in contributing to individuals' experiences with, and appropriation of, the artifact.

Design and Appropriation: Case Studies

The digital artifact is crafted from wood and designed to resemble a jewelry box (Figure 1). The technology it incorporates is mainly hidden from view yet allows the triggering and display of content in video format. For this purpose, a screen is visible inside the box (Figure 2). RFID (radio frequency identification) technology is housed in the right hand side of the box which enables the triggering of a video. The box marries old and new aesthetics and as such is unfamiliar to its users [5]. This ambiguity opens space for a user to bring her own interpretations and to reflect on what the artifact could be and in what specific contexts it could exist.

Lovers' study

In a first study, the box was given to five couples in early romantic relationships to create and exchange video messages with their partner reciprocally over a period of five weeks [7]. The making of the videos required effort, but resulting messages were of high personal and emotional significance to the partners. In this context, the box with the embedded videos became a kind of treasure and carrier of meaningful, gift-like videos. The artifact was perceived as a hobby that both partners shared. The regular exchange during the five weeks allowed the inclusion into a routine, as couples had time to appropriate the artifact in their relational life. Some lovers interpreted their box as a keepsake whose function is to keep something safe and precious. Others compared it to a digital storybook that plays

little messages of your life. As such, the box became associated with laughter, closeness and personal intimacy.

Personality study

In a second study, four individuals were asked to create a video presentation of their personality to be seen and discovered once by unknown others. Participants creating a video presentation found it difficult to assign a purpose to the box beside it being there to display their presentation. They could not solve the ambiguity in relation between the wooden box and their self-presentation. The participants who discovered the personality videos made by individual participants, however, *were* able to assign meaning to the box. They enjoyed discovering unknown others through the box and described the experiences of completing the creative and quite ambiguous video presentations as intriguing, enlightening or exciting. In this context the box was perceived to be a kind of secretive, personal storage box - like those boxes that people hide under their bed, which contain pictures of oneself, family and friends or souvenirs of important events. It created a sense of mystery.

Discussion

The aesthetic and functions of the box influenced how it was perceived by participants and framed their individual interpretations. The case studies outlined how the same artifact could be understood differently depending on the *context* of use and the *time* individuals spent with it. The findings revealed that the design did not work for every participant and in each context that the box was embedded in. Those participants 'creating' a self-presentation video found it hard to make sense of the box. Could a design more

closely related to their personality (e.g. a digital diary) facilitate a more meaningful appropriation in this context? Would it become easier for individuals to assign personal roles to the artifact if they would be given more time with it? As Hallnäs and Redström [3] point out in their 'slow technology' approach, it sometimes takes time to learn how a technology works, how to apply it for oneself, understand why it works, see what it is and what the consequences of use may be.

In our case studies, technology has been designed to allow the active involvement of the user, not only for the creation of video content but also in negotiating meanings around the box artifact. Opening space for users' contributions to the design (e.g. through processes of personalization, assignment of meaning, individual use) has the potential to stimulate creative sense-making processes on the roles, purposes or values technology can have for the individual. It would be misleading, however, to assume that individual's always want to make sense of technology. In particular a personally or emotionally *meaningful* appropriation of an object or system requires time and effort to negotiate such meanings and values. Here again it is the context for which the design is for that matters. In designing for a personally meaningful appropriation, designers may adopt the idea that they begin a design, which is then completed by the user.

Reflecting on the role of the designer, technology can be more or less suitable for individual appropriations. Designers should be aware of the contributing role and creative potential of the user and allow their technology to be understood in its respective context, but also enable users to master the functionalities they provided

and allow them space for personalization and individual interpretations.

However, a better understanding of the process of appropriation and its influencing factors is needed. How can we systematically assess how people appropriate technology for themselves, collectively and within their everyday life? How can we gain a deeper insight into the values and meanings individuals assign to technology? How may these change over time? Future work has to embrace these opportunities and challenges in order to understand appropriation and how to purposefully design for it.

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