Unpacking The Thinking And Making Behind A User Enactments Project

[1] Over the past several years the user enactments method has become part of graduate-level university curriculum in interaction design at Carnegie Mellon University and the University of Michigan.

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Abstract

We have developed the User Enactments design approach to help support design teams in exploring and creating radical alterations to technologies' forms and behaviors in emerging, uncharted design spaces. To date, no work exists that explicitly unpacks the practical development of a cohesive set of user enactments. At the same time, interest is growing in the method with its recent inclusion in a popular design method handbook for practitioners [4] and also as it becomes integrated into graduate-level university curriculum in interaction design.[1] The core contribution of this pictorial is to unpack the thinking and making behind a cohesive set of user enactments through rich visual documentation and annotations.

Authors Keywords

User Enactments; Speed Dating; Design Methods; Interaction Design; Prototyping

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

New interactive products and systems typically exist outside of people's current understandings of technologies, offering few interaction or social conventions to draw on in the design process. This can make pursuing new initiatives in emerging design spaces complex and risky. We have developed the User Enactments (UE) design approach [6] to help support design teams in more successfully making this conceptual

2 Our prior published work with the UE approach left little room to include visual articulations of the scene and the cohesive set of UEs.

3 A UE developed and conducted by Team Warwick (B. Bykowicz, R. Li, Y. Y. Liu, S. Rahul, R. Vairamohan) as a part of the pervasive interaction design graduate course (SI612) in the School of Information at the University of Michigan.

leap through investigating radical alterations to technologies' forms and behaviors in new and uncharted design spaces. UE is part of the broader speed dating methodology [1] where, like short speedy 'dates', in each UE users find themselves in a familiar scene and experience a 'taste' of what a potential future might be like. At the end of each UE, after experiencing a possible future through simiularted content, participants reflect on what may have complicated or supported their desires, or led to unexpected experiences.

Doing UE consists of design teams prototyping the physical forms and the social contexts of simulated representations of potential futures in emerging design spaces. Here, users are asked to enact loosely scripted scenarios involving familiar social situations in which new, unfamiliar technical systems intervene in them. Taken together, a set of enactments will intentionally explore both desirable and undesirable technological futures to provoke users to critically consider what 'is' a preferred future for them and why. Importantly, the aim is not to 'evaluate' the design concepts embedded in each UE. Rather, the goal is to elicit and synthesize feedback from users across multiple enactments to construct a broad perspective that can help reveal new design opportunities and underlying social tensions around new technologies.

Our UE research has previously appeared in the HCI community in terms of (i) applying the method to exploring new design spaces from a research perspective [1,7] and (ii) unpacking high-level best practices and common pitfalls when using the method [6]. In both cases, little space was left for detailed articulation of the form and presentation of UEs beyond light textual description.**2** Also, our prior attempts to include a design process book as an auxiliary material with a UE research publication were not supported. They were criticized as

attempts to include 'too much' detail and that the content is too extranous to be ofinterest to readers interested in 'research' (tensions we see as disciplinary differences).

As a result, to date no work publically exists that visually describes the practical construction and framing of a cohesive set of UEs. Nonetheless, interest in how to use the UE approach is growing as evidenced by its inclusion in an popular design method handbook for practitioners [4] and its increasing integration into graduate-level curriculum in interaction design.**3** The core contribution of this pictorial aims to address this gap: we want to unpack the thinking and making behind a cohesive set of UE through rich visual documentation and annotations. In support of this goal, we draw on materials from an extensive UE project we conducted, which focused on probing technological futures in a teen bedroom.

Teens, Bedrooms and Virtual Possessions
Prior fieldwork we conducted with teens revealed different workarounds they developed to make their virtual possessions (e.g., photos, music, social networking information, text messages) more present in their bedrooms, and how these practices supported experiences of self-reflection and self-presentation to different social groups [8]. We conducted a UE project with 14 teen participants to probe how increasing the presence of teen's virtual possessions in their bedroom through radically new forms and behaviors would shape teens' perceptions of their value [7]. For this UE project we prototyped a high fidelity environment as we needed to create a 'scene' in which teens would feel comfortable in and could relate to, and, ultimately, so they could temporarily suspend belief to engage with the scenarios in a reasonably 'realistic' or believable way. In what follows we illustrate the making and thinking behind the bedroom scene and the UEs that unfolded in it.

The User Enactments Design Process: An Ongoing Reflective Dialogue With Materials And Movement

From the very beginning, the UE process requires an ongoing dialogue with various materials. We began by 'living with' print outs of prior fieldwork data and images of teen bedrooms in our studio. We wanted to explore design patterns, exemplars and outliers to develop a rough design 'aesthetic' and language for a place as idiosyncratic as a teen bedroom. We also started sketching and clustering many design concepts embedded in bedroom social situations that intentionally depicted a range of positive and negative technological futures.

Through several rounds of iteration, UE concepts were critiqued, combined, and refined until they resembled a rough, yet distinct set that covered topics diverse enough to explore several issues, while concise enough to produce insights for a concrete part of the design space. A crucial part of this process was simultaneously prototyping the bedroom scene and *bodystorming* emerging UE scenarios to explore their logistical feasibility, to creatively alter or combine them, or decide if, in practice, they simply are to complex to work.

We printed and hung over 50 images in our studio from our prior fieldwork in teen bedrooms. These images helped us isolate key details of teen bedrooms and develop a sensibility for when we had gotten the UE bedroom to the 'right' level of fidelity. We also sketched, clustered and hung nearly 100 design concepts, which helped better structure the design space and also get a sense of what the bedroom would spatially and practically have to look like.
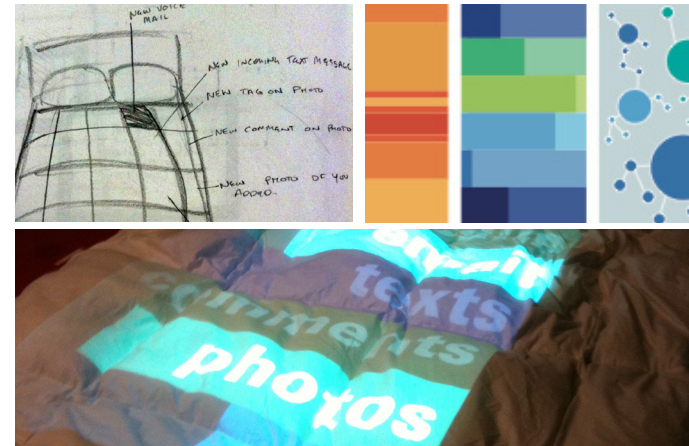
Each UE has a core design concept embedded in it that alters the social situation and provokes reaction from the user. The material constraints of the design concepts are crucial considerations when creating the scene (the bedroom in our case). Above is a glimpse at iterations on the status quilt (UE 2), beginning in sketch form, moving toward 2D form explorations of the interface, and the final form projected on the bed quilt the user 'sleeps' in during this UE.

Constructing the 'Scene'

Transforming the bedroom into a scene that would make teens comfortable enough to suspend belief as they experienced glimpses of 'the future' was an ongoing process that took a total of 5 months. This involved the low-fi prototyping of several key components. Using foamcore and blackboard, we created a large overlapping 12-screen display to explore how teens would react to the (over)amplified presence of technology in everyday life. Using a mounted HD projector and Adobe Illustrator we mapped the projected displays to the physically mounted foamcore screens. The Illustrator file was later used to size and scale high-fidelity interfaces for the displays (controlled via an Adobe Flash application). Another projector was installed above the bed to create the status quilt (UE2).

We also used foamcore to create a 'bedroom door' to draw emphasis away from the office door in our lab. Domestic objects and school materials were acquired from thrift stores. We 'decorated' the room to be messy to reflect the composition of many rooms we observed in the field.
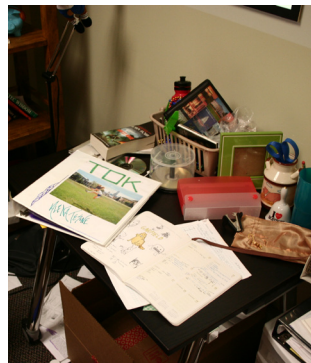
User Enactment 1: The Socially Reactive Bedroom

In this UE, the teen encounters a visual breakdown of many different virtual possessions on the displays, from phone call logs to facebook photos to social ratings of current music tastes (top row of images). When a friend arrives, the screens automatically change to depict representations of information exchanged between the two over time, which they explore together (middle row). After a few minutes, a parent arrives to deliver laundry and the screens change again to show more a 'parental friendly' digital representation of self (bottom row).

This was one of the most complex UEs, involving two confederates (playing the friend and 'dad') and a researcher triggering the screen transitions, which collectively help guide its narrative flow. Early on, we found teens were uneasy with this initial fast moving scenario. However, we wanted it to remain first, so it could be used as a point of reference as participants compared experiences across UEs. After several uneasy rounds of piloting and formal studies with teens, we decided to play teen-oriented popular music in the background. This subtle tweak immediately dissipated the earlier tension, enabling both the researchers and teens to relax, engage with the UE, and draw attention away from the lab-like setting.
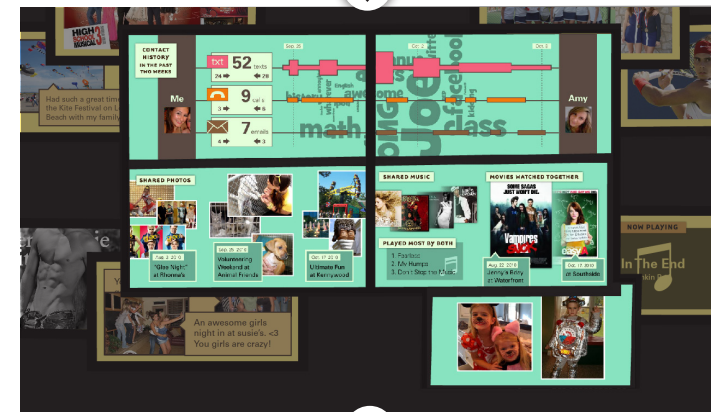
User Enactment 2: Waking Up In Your Virtual Possession Updates
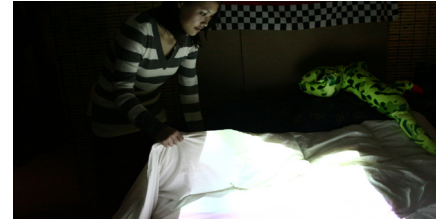
In this UE, the teen arrives home late in the evening on a school night and goes to bed. The bars of the 'status quilt' convey that she has no new or unchecked digital content. As the teen lies in bed 'overnight' (about 1 minute), the information on her quilt changes, indicating she has an assortment of new wall posts, photos and emails to check. The UE concludes as a parent knocks the door to let the teen know the school bus has arrived.

We wanted teens to experience literally waking up in a future where their virtual possessions are already vying for their attention. We also aimed to provoke teens to reflect on the role of digital content in their lives and how it intersects with their everyday routines. Using a projected changing interface as the core design material in this concept helped amplify the prescence of this potentially unsettling technology and engage teens in exploring what might be a more viable future approach to balancing technology use in the increasingly always-on and connected world they are growing up in.

User Enactment 3: The Gift of an Experience-Oriented Assemblage

In this UE, the teen encounters a virtual gift given to her by her boyfriend. It comes in the form of a digital playlist that is augmented with annotated images, other textual notes, and a wordcloud representing communication exchanges, all of which correspond to a recent trip to an amusement park with her boyfriend. The gifted playlist is represented on a portion of the 12 screen display. Shortly after the scenario begins, a friend arrives (played by a confederate) and the two discuss elements of the gift in a semi-structured, improvised manner.

In the material world, people commonly craft unique, personalized gifts for loved ones. Due to a lack of expressiveness, it can be hard to achieve this same level of uniqueness in digital gifts currently. We designed this UE's interfaces to explore how different kinds of digital materials related to a shared social experience could be combined together into an assembly. We wanted to explore how teens would react to this new form of a virtual possession. If teens had the tools to enable this kind of interaction, would it be a viable future design space to explore? Would gathering the digital materials to make an experience-oriented assembly conflict with concerns of privacy or other social tensions?

User Enactment 4: Postcards from your Past Digital Self

In this UE, the teen is in her bedroom when a parent delivers two postcards addressed to her. She finds a simulated computational system has scraped data from her social networking account from two years ago and constructed two "postcards from the past." One card centers on a trip to a local amusement park, providing the weather, temperature, date, persons that attended and social media comments posted about it. The other is a record of her personal behavior online (e.g., the amount of times she was (un) tagged in online photos, the amount of messages sent to one person, the person she 'liked' the most, etc.).

A core part of teens' lives is the struggle to find out who they are and who they want to become. We wanted teens to confront the material reality of receiving information from their 'past' and probe whether this would be seen as a resource for reflection or a tense reminder of who they once were. In parallel to the unseen record keeping of online interactions [5], we also wanted to probe teens' perceptions of their online personal information being collected. We aimed to provoke discussion on teens' technological practices, issues of self-disclosure, and the need to keep these concerns in mind when creating technologies for self-reflection that incorporate new digital materials.

October 12, 2008
Cedar Point amusement park

What uuup?

I hate posing for pictures. When is this over?

Happy birthday to us!

Ladies, you all look great!
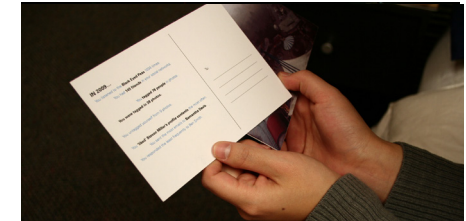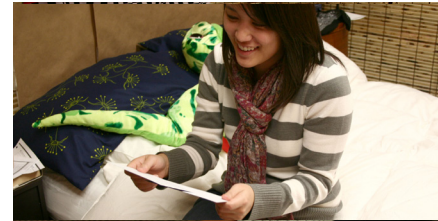
On October 12, 2008 you:
Went to Cedar Point amusement park.

You invited 8 friends.

3 friends attended:
Kelly Johnson, Jill Medvez, Kim Glassman

The weather was:
Thunderstorm; 65F

You commented:
" Hey sorry for the bad weather.
Maybe we can go again next year."

Your friends commented:
"Rain sucks." "Are we doing this again next year?"
"We should've gone to the Steelers game"

Other events happening on November 12 2008:
Pittsburgh Steelers vs. Cleveland Browns;
Pennsylvania Chili cook off; Downtown Arts & Culture fare

To:
_____
_____
_____
_____

IN 2009...
You listened to the **Black Eyed Peas** 1034 times.
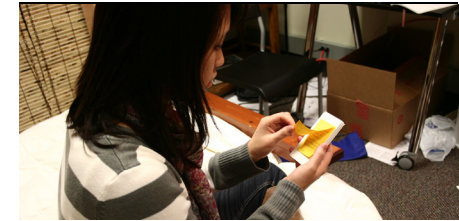You had **145 friends** in your social networks.

You **tagged 78 people** in photos.
You were tagged in 38 photos.

You untagged yourself from 9 photos.

You **'liked' Steven Miller's profile contents** the most often.
You sent the most emails to **Samantha Davis**.
You responded the least frequently to Ben Smith.

To:
_____
_____
_____
_____

User Enactment 5: Manging your Multiple Digital Selves

In this UE, the teen encounters an interface that depicts four distinct presentations of self curated for different online social audiences (e.g., sports team, close friends, family, social outreach group). This application enables the teen to view and manage how they appear to different social groups. During the UE, as the teen receives a SMS message, the social group that the sender is part of flashes, helping the teen remember their current presentation of self to this group.

Across our fieldwork, teens had developed sophisticated practices for managing multiple digital selves. We tailored the design of this interface to explore how teens would react when confronted with an application that would directly support these behaviors. This interface leveraged the segmented design of the layered panel displays to provoke discussion on the tension teens experience in resolving fragmented identities over time (see [2]) and the role technologies will play in supporting or complicating these practices.

Conclusion

The User Enactments design approach can help support design teams in reducing the risk associated with making the conceptual leap into designing new interactive systems and technologies in emerging design spaces that have few conventions to draw on. It also provides a designerly mechanism for interrogating findings or assumptions revealed in fieldwork, opening dialogs about emerging socio-technical trends, co-exploring potential unintended consequences, and, ultimately, developing a deeper understanding of a design team's target user population. User Enactments do this by asking users to enact several scenarios in which they experience glimpses of potential technological futures, and then to critically reflect on and discuss these encounters.

While prior work exists that has discussed research findings resulting from a user enactments project and also that describes high-level best practices, no work to date has articulated and illustrated the thinking and making behind a project using the user enactments approach. At the same time, interest is growing in this method from both design practice and design pedagogical audiences. The goal of this pictorial is to take a step forward in addressing this gap. We have illustrated the reflective dialogue with materials and movement required in beginning and ongoing development of enactments. We have visually described how a combination of low and high-fidelty materials can be used to prototype a scene capable of making users comfortable enough to temporarily suspend belief and be drawn into glimpses of possible futures. Finally, we have noted the thinking and making behind a cohesive set of user enactments with particular attention to the practical design, construction and framing of the form of the interfaces and scripted scenarios. Ultimately, we hope the visual articulation embodied in this pictorial will take another step toward opening up the user enactments method to the HCI and DIS communities as we continue to grapple with new and emerging design spaces and the potential futures they encompass.

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