Using Models of Experience: Frameworks in the Field

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Abstract

The plethora of theories in the field of UX can be highly relevant to practice. This paper discusses the successful use of seven theories in the evaluation of TAPT, an experience-oriented design method. Four models of experience and one discussion of working practice and UX were used for direct evaluation; two other theories drove the methodology of TAPT's evaluation.

Keywords

UX, experience models, design, TAPT, theory, practice

ACM Classification Keywords

H5.2. Information interfaces and presentation (e.g., HCI): User Interfaces. User-centered design.

General Terms

Design, Human Factors.

Introduction

There exist many theories that are relevant to UX practice, from models of experience to contributions such as methodological frameworks. The use of such theories in practice is a straightforward task.

This paper describes Teasing Apart, Piecing Together (TAPT), an experience-oriented approach for

redesigning experiences and interactions for new contexts. After describing TAPT, the paper outlines seven theoretical frameworks used in its evaluation, then discusses the use of those frameworks.

Teasing Apart, Piecing Together

There exist many methods for understanding UX, from interviews and observation to experience prototyping [1], contextmapping [11] and cultural probes [6]. Teasing Apart, Piecing Together (TAPT) [8] – inspired by Dix's concept of deconstruction and reconstruction [2] – is different in two key ways: first, it provides constructs for redesigning existing experiences, and second, it specifically aims to support understanding of emotional facets. Like contextmapping, it accesses deep knowledge about latent feelings.

TAPT falls into two halves, shown in figure 1.
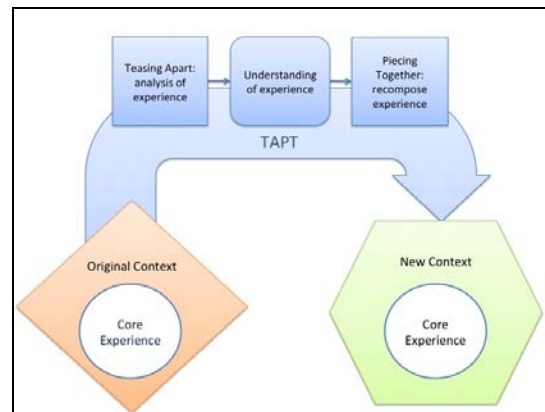
figure 1: TAPT involves analysing the experiential effects of an interaction, to redesign that interaction for a new context.

The first phase, Teasing Apart (top left in the figure), involves analysing an experience. It yields an abstracted description of the experience, focused on the emotional and social, not the physical or digital:

1. **Briefly describe the experience**. For example, if we were analysing photo-sharing on Facebook, we might write: "Facebook lets users upload and caption photos, which can be commented upon by the photo's owner or others. Viewers can 'tag' friends in photos, linking photos with people."
2. **List the 'surface elements' of the experience**. These are nouns and adjectives relating to the design. E.g.: a somewhat complex photo upload process; the option to annotate images with text; the option to 'tag' images, indicating who is shown.
3. **List 'experienced effects'**. These are physical, social, intellectual and emotional. They are abstract nouns, noun/verb pairs and adverbs:
   a. *External*: visible effects, e.g. 'share memories'
   b. *Internal*: e.g. 'anticipation of discussion', 'reminiscence'. This step is important.
4. **Identify effects that seem especially important**. For example, 'broadcasting visual information', 'openness' and 'reminiscence'.
5. **Describe the abstracted experience in a neutral sentence**. For example, mention 'broadcasting' data, not 'playing' it, as 'playing' implies an audio-visual mode. One might write of photo-sharing: 'A way to share and annotate imagery from the user's past; their audience can access and annotate that imagery.'

Piecing Together (top right in figure 1) takes the output of Teasing Apart as a springboard for redesign:

1. **Brainstorm, particularly using key effects**, considering the new design context. One might consider modality, technology and scale.
2. **Build an example reconstructed scenario**.

3. **Check the reconstruction**:
    a. Are all desired elements included? (You may choose to omit some key effects.)
    b. Were unintended key effects introduced?
    c.   Refine the scenario, repeat if needed.

TAPT was developed to support software engineers redesigning web-based social experiences (for example, online social networking) for new contexts (such as care homes for the elderly, or voice-only access). TAPT has been used to redesign various experiences including social networking, to evaluate newly designed systems, and to analyse digital social experiences.

Theoretical Frameworks Relevant to TAPT

TAPT underwent a four-phase evaluation: (1) a comparative evaluation against current best practices; (2) an expert review of the outputs of that evaluation; (3) four case studies in which TAPT was used in academia and industry; (4) assessment grounded in theory: four UX models and one set of factors from working practice. The methodology by which TAPT was evaluated was itself driven by two further frameworks. This section describes the theories and frameworks.

Models and contexts of UX
Four UX models were used to gauge TAPT, in addition to a set of factors from working practice:

1. Forlizzi [4] gives three types of user-product interaction and three contexts of experience.
2. Hassenzahl [7] describes two aspects of products.
3. Mahlke [10] identifies three non-instrumental qualities and four dimensions of experience.
4. Wright and McCarthy [12] present a dual framework: four relational elements of experience and six sense-making aspects.

5. Furniss [5] presents four factors of working practice to affect usability in web design.

Evaluative frameworks
Two evaluation frameworks drove the methodology:

Kitchenham [9] lists nine types of evaluation for Software Engineering tools and techniques (qualitative experiments, case studies and surveys; quantitative experiments, case studies and surveys; qualitative screening; qualitative effects analysis; benchmarking).

Fallman [3] gives criteria for rigour (validity, reliability) and relevance (usable, timely, understandable research addressing problems that matter to professionals).

Appropriation of these theories

The UX models have varying, complementary foci: Forlizzi emphasises fluency and context, Hassenzal and Mahlke consider hedonics, and Wright and McCarthy focus on 'strands' of experience and sense-making. The two evaluative frameworks are also complementary, focusing on methodology and rigour / relevance.

The UX models were used in varying ways. At times it was about noting if TAPT accommodated a model: i.e. in Hassenzahl's model TAPT focuses more on hedonic than pragmatic aspects, due to the emotional focus in steps 3 - 5 of Teasing Apart. We can also examine how TAPT fulfills facets of models. Taking McCarthy and Wright's strands of experience, TAPT is applied to specific experiences, situated in a time and place; exploration of experiences' composition is encouraged (steps 2 - 3 of Teasing Apart), as is identification of sensual and emotional facets (step 3 of Teasing Apart).

The evaluative frameworks provided a structured way to drive and assess TAPT's evaluation. Kitchenham's nine evaluation methods helped guide that of TAPT. Fallman's lens on rigour and relevance gave a way to affect (and assess) the research's efficacy: for instance, corroborating results showed validity and reliability, while use of TAPT in the field demonstrated relevance.

Conclusions

TAPT is an experience-oriented method for redesign that has been successfully used in industry and academia. Its evaluation included three studies, but also a theoretically-based evaluation. Two more theories helped design (and assess) TAPT's evaluation.

Using theory was not resource-intensive, yet yielded worthwhile results. The four UX models and Furniss' usability contexts provided multiple perspectives that helped assess TAPT's efficacy, relevance and fit within the state of the art. Furthermore, Kitchenham's framework of evaluation methods and Fallman's discussion of rigour and relevance provided valuable tools by which to steer the evaluation process itself.

This paper described the use of theory to help evaluate an experience-oriented design method and to assess the methodology of that method's evaluation. It can be seen that the use of these theories required no great labour: the theories were highly relevant, and their use was straightforward, low-cost and high-yield.

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