
Theoretical Frameworks for Concepts of Creative Engagement

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Introduction

We believe that new media could have a central role in expanding HCI practice by providing a rhetoric for deeper and more varied analysis of under-explored features in interface and experience design. Waterworth argues that much of HCI's focus on cognitivist approaches and the resulting "cognitive artifacts" fail to support "much of real human cognition which embraces non-computational phenomena such as sensation, imagination, emotion and fantasy". [8] We believe that these hard to capture phenomena can be made more accessible if the language of new media practice were made more accessible to HCI practitioners. That said, there is considerable resistance in some quarters to work in HCI that is suggestive rather than empirically sound. What we propose is that the inclusion of new media practices in HCI need not reduce the empiricism of the research, but can lead to a better understanding of the aesthetic experience, and interfaces that can lead to meaning without sacrificing usability, learnability or real world use and applicability.

A similar position has been expressed in the user experience community, in particular when approaching issues of presence. Marsh points to how elements of film making and film criticism can aid in the design and evaluation of mediated computer environments. [6] Our work focuses on examining features of interest to HCI researchers that can't be quantified easily or



Figure 1: *Project 66* - Tabletop interface



Figure 2: *Project 66* - Interior Sketch



Figure 3: *Project 66* - Installation

formulated within existing experimental frameworks. We explore whether an approach from the arts – new media in particular – would provide a method for classification of drawbacks, flaws, and potential errors in usability, and how such an approach may point to methods for remediation. We present two projects exploring the boundaries of new media and HCI, and suggest how our experiences may contribute to the workshop objectives.

Interdisciplinary New Media Design

Project 66 (Figs. 1-3) is the ultimate artifact of an interdisciplinary course combining students in art-studio (sculpture, painting), graphic and industrial design, art history, and engineering (computer science, human factors). [1] *Project 66* takes the form of a new media installation in two parts – a standalone environment where museum-goers interact with a tabletop interface, and as a visual piece presented on an immersive 3-walled CAVE, also in the museum. The course provided a way for students to engage in a very fluid design space with no restrictions placed on collaboration or resources. The artists by-and-large had little experience with the technologies that were ultimately employed, and the technologists had no previous exposure to the cycle of artistic criticism and evaluation.

The modes of presentation for *Project 66* were never explicitly considered “new media” until after the final construction of the installation. The solutions to the design challenges of developing a compelling, computer-mediated museum experience were always largely unplanned and developed in large scale (16 students, 3 professors) collaborative meetings.

Because of the varied positions of the disciplines present, issues of usability, ergonomics, and artistic experience were all addressed and commented upon by everyone involved. Of particular interest was how communication across disciplines was influenced by the various artifacts used in the design discussions. More traditional media representations (static drawings, multimedia applications, videos of interface walkthroughs) would generate particular kinds of responses, with participants familiar with the tools and techniques of that discipline feeling most comfortable commenting further. For example, the computer scientists would comment most closely on a piece of code – whether visuals were included or not – and designers would be more likely to comment on sketches or computer renderings. When the artifacts became more “new media” (with more interactivity, user configurability, and malleable representations), invariably more discussion was present and with more disciplines represented.

Presentation medium (hand-drawn sketches or computer-aided drafts) did not dominate the impact of “new media” aspects. Nor was it the familiarity with the tools (again, sketching or computer-aided design). Even the interdisciplinary makeup of the team on a design task did not have as much of an influence.

The resulting complex workings of the new media artifacts, with their blurred boundaries between media and authorship, generated the most compelling design decisions. Of particular note were flaws in usability and experience design missed by traditional HCI techniques, flaws ultimately recognized in subsequent design meetings by the artists.

Ongoing Work

As current and ongoing work, an upper level course (taught by established visiting artists, professors and engaging students from a wide array of disciplines) will be the laboratory for the design, construction, and initial evaluation of a set of devices meant to capture aspects of walking that normally go unnoticed. These physical tools will be devised with attention to their portability, cost, and ease of use. The aspects they address may include the capture of physical traits (gait, features of terrain), extensions to memory (sound/image capture, placing markers in the environment), or providing the user/participant with affordances for engagement (with other participants, with their environment). Hessels presents a similar work [3], dealing with the capture of driving data.

Intended to enhance the technology with an explicitly artistic motivation, the data collected through the use of these devices will then be interpreted and used as raw material for new media pieces. A small scale pilot study will be performed to explore the empirical aspects of the tools – their physical design, interfaces, and usability. Besides the common HCI analyses, these tools will be subjected to artistic criticism that has the potential to highlight different aspects of the designs. (A comparable application of industrial design evaluation is presented in [2])

A second trial with a greater number of devices will test their effectiveness in the field. This larger evaluation will be more akin to a clinical trial where the devices are treated like an intervention aimed at influencing the walking behavior of a representative population. The impact of these devices will be measured empirically, but with particular consideration given to the role of the

more explicitly artistically-minded facets of the tools. (See [5] for a related exploration of leisure, new media, and quality of life).

Contributions to Workshop Objectives

THEORETICAL FRAMEWORKS FOR CONCEPTS OF CREATIVE ENGAGEMENT IN THE NEW DESIGN SPACE ENGENDERED BY INFORMATION TECHNOLOGIES

We're particularly interested in the role new media can have in enhancing HCI practice when developing more participative systems. With the walking projects, the creation and enhancement of new media pieces by users is to serve as an incentive to stimulate and reinforce engagement with the tools. We believe this approach, where the artifacts of HCI research practice explicitly incorporate new media, can inform compelling frameworks for the analysis of HCI tools and their effectiveness.

INTERFACE FEATURES, SYSTEM COMPONENTS AND APPLICATIONS THAT SUPPORT REQUIREMENTS OF CREATIVE ENGAGEMENT

The experiences constructing and evaluating the walking projects will point to how research-in-practice can support technological, social, and artistic engagement. Depending on the passive/active nature of the devices, the internal representations of the data they collect, and how this data is then manipulated in interfaces, each of these aspects will suggest how interface aspects relate to creativity when incorporating new media practice with HCI.

NEW METHODS AND EXPERIENCES FOR EVALUATING INTERFACES AND INTERACTION SYSTEMS

Though similar to other ethnographic approaches, our methods of evaluation of the walking projects will focus on how the new media aspects influenced adoption,

user experience, and persistence of use in a specific community. We hope to explore how the role of the interface, both physical and digital, may be subordinated by the larger process of participatory design – treating product engagement as an ongoing creative process of a reflective community, rather than single instances with individual products. (See [4, 7] for a discussion of unfolding participatory new media)

LEVERAGES FOR ARTISTIC AND CULTURAL COMMUNITY
PRACTICES AS CONTRIBUTIONS TO HCI AND TECHNICAL
RESEARCH PRACTICES

With *Project 66*, we've begun exploring the role of artistic practice in the evaluation of the HCI aspects of a broad interdisciplinary project. Our experiences have suggested that the inclusion of new media artifacts – especially those that exist at the boundaries of familiar media and practice – can extend existing HCI evaluation efforts with little additional cost, and potentially great benefit in user engagement and design practice.

References

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