
The Aesthetic Experience In Interactive Lighting Design

Jeroen Peeters

Interactive Institute Umeå
Department of Informatics,
Umeå University
Östra Strandgatan 26A
90333, Umeå, Sweden

Abstract

Novel technologies are providing interactive lighting design with a myriad of ways in which users can interact with intelligent lighting objects and dynamically control lighting in environments.

The author presents his research interest in exploring the opportunities for interactive lighting to become profoundly meaningful, building upon John Dewey's notion of the aesthetic experience as both sensorial and intellectual.

Furthermore, two examples of interactive lighting design projects that explore this approach in different contexts are presented.

Author Keywords

Design; Lighting; Interaction Design; Experience Design; Interactive Lighting; Pragmatism

ACM Classification Keywords

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

General Terms

Design

Introduction

Novel technologies, such as LEDs that can be digitally and dynamically controlled, have opened up a wide field of applications and opportunities for interactive lighting design.

The interaction design of intelligent and interactive lighting has explored a variety of domains and applications. Research ranges from the design of direct interaction methods with a lighting object [1], to mediated interaction with lighting installations through handheld devices [2] and the design of Smart Spaces that combine artificial intelligence with user control options [3]. A great deal of research in this field explores the axis between full user control on one side, and full system control on the other [4].

Lighting is a pervasive and very important medium through which we experience the world around us. It literally and figuratively “colours” the world around us and the objects within it, and thereby how we perceive them. As we design an increasing amount of technologies that influences our daily life, it becomes ever important to consider how we want technology to impact our daily life, and what type of experiences we want it to elicit. This dimension goes beyond user needs and technological opportunities, and is concerned with ethics [5] and human values.

Research Interest

An increasing amount of interaction design research succeeds in calling upon more than simple motor skills and cognitive abilities for interactive experiences to acquire meaning. Many of these developments engage the body on a much deeper level, but embodiment also builds on our intellectual experiences. Our mind can

understand such things as ambiguity, complexity and irony, and it is able to adapt, learn and choose. These elements of experience are important in achieving a sense of quality - or authenticity - that appears very strongly in all kinds of creative practice (e.g. art, literature, film, etc.) but is much less common in design.

The primary source of philosophical reflection in this approach is that of the American Pragmatist John Dewey. In his book “Art as Experience”[6], he addresses the expanding gap between the worlds of art of daily life, as they are becoming increasingly disconnected from each other. Dewey argues that the aesthetic experience, or quality, is something that comes from both a bodily, sensed experience and an intellectual experience. In the latter, we relate something to our earlier experiences (memories, knowledge, hopes, dreams, fears, etc.). These two processes are interdependent and inseparable, meaning that our experience of the aesthetic cannot be disconnected from its socio-historical context. As such, the aesthetic becomes something that is personal, heartfelt and creates profound meaning.

The author’s doctoral research work revolves around exploring ways in which theoretical and intellectual depth can be combined with the full richness of sensorial experience, in order for interactive products to elicit profound and lasting meaning.

Work

In this section, two example projects of interactive lighting design from different contexts are presented. Both projects explore opportunities to combine rich sensorial experiences with intellectual depth.

Experiencing Human Rights

The Experiencing Human Rights project revolved around the design of an exhibition that conveyed the current relevance of the Universal Declaration of Human Rights to museum visitors. A number of interactive installations allowed visitors to experience the application or denial of such rights themselves, evoking reflection on their perception of Human Rights themselves.

Part of the exhibition, the "Asylum" space, used the modality of light to create an immersive experience, where stories relating to the fundamental right of freedom of movement were told from two different perspectives (Figure 1). Using interactive lighting that responded to movement in the space and video projections in red and green, two separate visual "realities" (one red and one green) were created in the same space; each describing the issue at hand from a different point-of-view. Visitors wore anaglyphic glasses, with a red and green lens. To make sense of their environment, visitors were required to close one eye, filtering the light and projections, rendering only one "reality" visible. In doing so, the visitors had to explicitly choose a perspective on the matter through which they engaged with the space and the content of the stories, experiencing themselves the multiple points-of-view and complexity of such Human Rights issues.

Implied by Light

The Implied by Light project was a design exploration based on the notion of communicating implicitly rather than explicitly. An experimental lighting installation aimed at communicating the state of the railway

network to commuters was developed based on this notion.



Figure 1. Part of the "Asylum" lighting installation, showing the red and green visual effects.

In the design, a continuous pulse travels outward from the heart of an abstracted map of the entire Dutch railway system (Figure 2). Local delays or disruptions are visualized through a small delay in the light as the pulse travels over the location of the disruption. The installation requires travelers to learn how to interpret and understand the information that is presented through the lights. This requires users to employ their intellect to develop and master an understanding of the

meaning of the message being communicated beyond a purely cognitive level. This re-balancing of the explicit quality of the information also creates room to move beyond typography and create an elegant, visually aesthetic design to appeal on a sensed level as well.

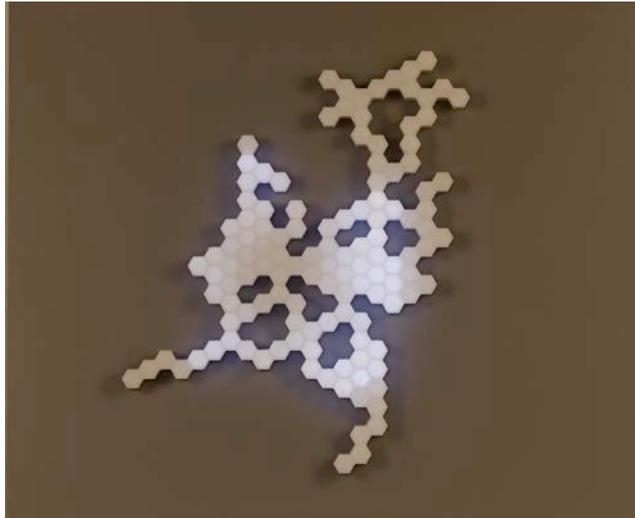


Figure 2: Still image of a scale model of the Implied by Light installation, an abstracted map of the Dutch railway network that implicitly communicates the location of disruptions in the railway network to commuters.

Researcher

Jeroen Peeters is a Junior Researcher and Interaction Designer at the Interactive Institute Umeå and PhD student at the Department of Informatics, Umeå University. His research work centers around engaging interaction design, specifically around exploring depth in aesthetic experiences with interactive lighting systems. He has a background in Industrial Design, and

co-founded interactive lighting design studio De Bende, based in Eindhoven, the Netherlands.

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