

Chapter 17

AiryLight: Ambient Environmental Data

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ABSTRACT

This chapter explores the practice of combining ubiquitous computing—information in everyday objects—with the approach of calm technology – designing ambient, intriguing presentations of information. Borrowing from these two approaches, we can define a more faceted path, imbuing physical objects and environments with data about their own surroundings in an aesthetic, tangible, and crucially subtle way. The chapter presents the concept of combining three sensory methods to strengthen learning in unexpected situations. One, the role of the spectacle produced through a dynamic, aesthetic object in learning and engagement. Two, providing an optional, detailed reference layer for said spectacle. Three, placing this experience in physical space. Information need not be constrained to the physical page of paper nor the digital screen (European Commission, 2004). Instead, it can flow through our daily life, finding place in subtle (Weiser & Brown, 1995), thoughtfully designed (Löwgren & Stolterman, 2004) surfaces and objects. This chapter discusses the example project, AiryLight, and how its motivation and execution exemplify the more faceted path and the three methods – abstract spectacle, layering of detail, and placement in physical space.

INTRODUCTION

At this moment, information is flying rapidly around us, yet we cannot see or experience it until it displays itself on a digital screen in front of us - whether a smartphone or a computer. At this point, while we may intend to learn from the piece of news that may have shown up on our screen, inevitably we are quickly distracted by another more pressing or more entertaining event. This presents a central issue: while we actively set

goals to learn more about certain topics, often the context with which we are presented new information is full of distractions, and the information itself is too complex to understand in such a way.

Less expensive computing chips, storage and access to data as well as open source tools have allowed artists and designers to capture this information that is “flying rapidly” and create forms with it - forms that fit to our lives rather than fitting default forms to our individualized learning styles and habits.

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Rather than solely creating prescriptive, directed lessons, it is possible to create experiences that exist at the periphery and engage our senses intermittently as we move through physical space – as opposed to in one dedicated, concerted, constricted moment.

In this case, the combination of visualization and art allows for the afore-mentioned more faceted approach - not answering questions, nor only raising them, but allowing a combination of both - in that we can create an opportunity to reflect upon the issue of air quality through an object such as AiryLight as artistic infovis. Furthermore, AiryLight encourages a different interaction around the experience of scientific data - highlighting how we absorb or ignore the vast amounts of data around us unless we are provided with an engaging, visceral, tangible presentation of it that is part of our daily lives.

AMBIENT OBJECTS, SPECTACLE, DOMESTIC ENVIRONMENTS

The nature of the spectacle in this case is the reducing a complex concept to its essential form. The concentric circles that increase in overlap and size as the air quality worsens; they mirror the increasing disruption and turbulence that poor air quality causes. Yet the mapping of one piece of information to an entirely different output encourages viewers to create their own interpretations based on the primary mapping. In this way, AiryLight encourages defamiliarization of our negative, granular, connotations of tracking and paying attention to air quality.

While the scientific community often focuses on using data visualization for dispassionate analysis, through AiryLight I propose that we can also open the field up to creating designed, artistic objects based on data that encourage emotional response based on its aesthetic qualities as well as the data it conveys. The domestic situation of AiryLight allows for peripheral engagement

with the air quality data visualization. Owners can continue in their daily routines, breaking as much or as little as they wish to engage with the kinetic light. Several studies state that users favor “quiet and elegant peripheral interfaces” (Röcker & Kasugai, 2012).

ENVIRONMENTAL DATA AND AMBIENT OBJECTS

Whereas environmental information surrounds us constantly, we often neglect to read it, to note it, nor do we have the patience or time to collect and analyze it. However, as mentioned in the prior section, we are now able to use technology to track scientific data around us and extrapolate that data to something that is tangible, aesthetic and intriguing.

This mapping, or transformation of scientific data into tangible, aesthetic forms is particularly crucial when designing for scientific information about the environment. While nature is in and of itself one of the highest forms of beauty, often the presentation of scientific information about nature is far less aesthetically pleasing.

AiryLight: Example Project

Such abstract, wider educational experiences can be carefully designed to resonate deeply with the present person. A tight metaphor between the visual design of the object or image and its information is one natural way to keep consistency.

The project AiryLight explores the tensions of educational aesthetic objects (Figure 1).

AiryLight is a kinetic light fixture that aims to make scientific information more tangible and aesthetic. It visualizes realtime local air quality through shadow projections on the ceiling above.

AiryLight uses current technology and design to integrate information about the outdoor environment into our homes and offices. AiryLight is a clock like mechanism mounted on the wall with

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