

Learning from Museum Visits: Shaping Design Sensitivities

Luigina Ciolfi & Liam J. Bannon

Interaction Design Centre
Department of Computer Science & Information Systems
University of Limerick, Ireland
Luigina.ciolfi@ul.ie, liam.bannon@ul.ie

Abstract

This paper describes an observational study of visitors interacting with artefacts in a museum, and attempts to draw from these studies a number of design considerations. Gaining a thorough understanding of the context, and the way visitors move through the exhibitions and interact around the objects on display, is crucial in designing effective museum installations. In our research, we are designing novel installations that will engage visitors in a natural and unobtrusive way. Our designs – which are ongoing at the moment – are informed by our field study work at the museum site. Our purpose here is to show how our observations can indeed be made relevant to design concerns, a topic that is fundamental to the development of successful pervasive technology.

1 Introduction

Despite the increasing prevalence of computer-based museum installations, visitor experiences with computer technology remain mixed, at best. Many of the most insipid and uninspiring multimedia kiosk-type installations that proliferated in the mid-nineties have thankfully been removed. These kiosk installations tended to separate the person from the actual artefacts, and called attention to the computer interface itself as the object of interest, rather than the actual artefacts. Far from augmenting the artefacts, they served to distance visitors from the items in the collection. People are not happy about moving away from the exhibitions to consult a kiosk, they would prefer to focus on the displayed objects. These kiosk technologies also provide essentially an individual experience, whereas visitors usually go to museums in small groups. Nowadays, there is a greater realization within the computing community that the technology needs to be in the service of the exhibition, rather than stand out from it. The increasing interest in such areas as ubiquitous or pervasive computing, where computational power is taken “out of the box”, distributed and attached to material objects, provides interesting new possibilities for how one might augment museum exhibits. “Traditional” desktop computers are not an effective form of technology for supporting visitor behaviour within such a rich, interesting and complex environment as a museum. Novel mobile, “ultralight” appliances and “Disappearing Computer” technologies could be more effectively employed in order to design better technological installations in the museum, both for supporting the visit and for creating interesting visitor experiences or educational activities.

This paper provides a number of insights derived from observing visitors, and interviewing them, at a specific site - the Hunt Museum in Limerick, Ireland. The purpose of these studies is to provide some background material that will inform and inspire our creativity in designing new augmented museum exhibits. However, within the design community, while there is interest in ethnographic and other forms of field studies, there is increasing concern as how one can take the results of such studies and make them relevant for design. Often, social scientists focus on issues that do not seem of relevance to design, and they do not have the training or expertise to be able to move from observation to the specification of requirements. Our own expertise crosses the human and social sciences, but also extends to concept and software design, a somewhat unusual combination. Thus we are especially interested in ensuring our observational studies are of relevance to the design process. In an effort to show how such observations can indeed be shown to be relevant for design, we, along with colleagues, have been involved in exercises that attempt to shape the design process so as to be sensitive to various issues, as determined from the observational studies. In a word, we are looking for “design sensitivities”, rather than requirements *per se*.

Our work has been conducted within the EU-Disappearing Computer SHAPE¹ project (Situating Hybrid Assemblies in Public Environments). The SHAPE project is not strictly concerned with introducing technology within museums and galleries, rather the project focus is on creating hybrid public environments that allow visitors to actively interact with features of the physical, and of the digital, space. However, museums and exploratoria are the chosen context to inspire and support the development of such installations. The SHAPE team at the IDC, University of Limerick, jointly with the Hunt Museum, are currently developing a full design scenario informed and inspired by the analysis of a corpus of field studies aimed at understanding human behaviour within the museum environment, and, specifically, the way visitors approach and make sense of particular exhibits and specific objects. In this paper, we attempt to match specific vignettes culled from our video studies, and pair them to design sensitivities, to show how particular user behaviours around existing objects and exhibits might sensitize us to certain issues, which we may wish to explore further in our computer-augmented installation.

2 Cabinets of Curiosities

The Hunt Museum has three “cabinets of curiosities” exhibits: they are wooden closets where objects are arranged both on the upper shelves and in the drawers that the visitors can open if they wish. The objects are protected by glass on the top of each drawer. The nature of the objects contained in the cabinets is varied: ivory pieces, tapestry, drawings, coins, etc (see Figure 1).

We conducted numerous observations on the behaviour of people in the “Study Collection” room, where one of the most important of the cabinets is located. We were interested in understanding the way visitors relate to the exhibit and their interaction with the drawers. These cabinets are particularly appreciated by the visitors. An evident reason is the potential of drawers, chests and boxes to stimulate curiosity and exploration. Containers suggest the presence of secrets (Elsner & Cardinal, 1994), or of objects that have some kind of symbolic relevance for being sheltered from the eyes of the public (Bachelard, 1958). “Curiosity is a major factor in determining whether environments are appealing, and indeed curiosity triggers interaction towards its object.” (Falk & Dierking, 2000, p. 115). The interactions around the drawers reveal interesting visitor activities, often involving collaborative understanding and appreciation of the objects.

¹ Members of the SHAPE Consortium are: the Royal Institute of Technology-KTH (Sweden; Coordinating Partner), King’s College London (UK), the University of Nottingham (UK) and the University of Limerick (Ireland).



Fig.1. A cabinet of curiosities in the Hunt Museum

3 From Field Studies to Design Sensitivities

In what follows, we list in more detail a few of the interesting observations and our interpretation of their relevance to a potential design process.

Observation 1. People tend to interact with the drawers in one of two ways: they open either a few drawers or all of them in sequence. Those who cannot resist opening all the drawers usually spend a longer time on each, and tend to comment more on the objects with their companions.

Design concern 1. *To keep the user's interest and engagement high, we must envision ways to support different 'layers of activity': this could provide participants with the ability to engage in a progressive sequence of actions (both alone and with others) in order to provide successive surprises and discoveries. For example, more, and varied information on assemblies of objects and their mutual relationships is provided to those who want to explore all the parts of the exhibit.*

Observation 2. In the case of couples visiting the exhibit, each person usually takes control of one side of the cabinet, resulting in two drawers being open at the same time. This pattern of interaction facilitates the exchange of opinions and comments among the two visitors, usually comparing the contents of the respective drawers. Gestures accompany verbal comments on objects' similarities, possible relations, visual features, etc.

Design concern 2. *The augmented cabinet of curiosities should provide the possibility of parallel discovery and of making comparisons in order to support collaborative understanding of objects: the interactivity we support should not be limited to the one between individual and exhibit, but we should consider the different degrees and combinations of verbal gestural interaction amongst individuals. The installation should also provide some kind of added value associated with collaborative interaction around the drawers.*

Observation 3. The glass surface on top of each drawer is often used for sketching or taking notes: children especially spend time in taking notes and drawing sketches of the objects contained in the drawer, using the drawer itself as support. In many cases, we observed children visiting the Study Collection with their parents, and literally taking the lead in discovering the content of the drawers and showing to and commenting on it with their parents (see Figure 2).



Figure 2. A child is leading his parents through the exploration of the drawers

Design concern 3. *Children should be allowed to take part in the activity and be able to take notes or sketches around the augmented cabinet of curiosities. The installation should also give children the possibility to lead the process of discovery and to show it to their companions.*

Observation 4. Some people think that it is not possible to touch or open the drawers and they might open one only after seeing somebody else doing it, and in this way being reassured they are actually allowed to interact with the exhibit. Even if one of the drawers is left slightly open to suggest its real use, these visitors did not seem to investigate further, assuming the open drawer was the result of some work being done by museum personnel. When visitors proceed to open the drawers and discover what they contain, all of them express their surprise.

Design Concern 4. *The technologically augmented cabinet should provide clues, triggers and adequate affordances to make visible which actions the visitors are allowed to perform on each component of the installation. We must consider possible ways of encouraging interaction with, and around, the exhibition, and specifically collaborative interaction.*

Observation 5. Unlike couples, members of larger groups of visitors cannot all simultaneously open the drawers: usually, two people act as “openers” on the two sides of the cabinet, but all the people in the group comment on the objects and tend to draw each other’s attention to what has been discovered.

Design Concern 5. *The augmented cabinet should support the group visit experience with appropriate feedback that all the members of the group can appreciate. The possibility for the visitors to talk to each other must also be insured, as discussing the objects together is an essential part of the group experience around the cabinet. This means that devices as head-mounted displays or headphones are not appropriate for such an installation.*

4 Developing an augmented cabinet of curiosities

Following the data analysis sessions and an initial phase of reflection on our collected material, we are developing an augmented reality Study Collection room. The existing cabinet has some important features that make it a successful and inspiring installation: it is robust, the visibility is good, it allows for collaborative interactions and supports small groups. It is also easily accessible by children. The cabinet adds value to the experience of museum visit as it includes an element of active discovery and plays on a natural curiosity towards drawers and cabinets. Each object is interesting by itself, but multiple objects are connected by similarities or unexpected connections. What can pervasive technologies do to achieve such features in the technologically enhanced exhibits? At a minimum, we need to seamlessly integrate aspects of the exhibit with a visually pleasing structure, react to collaborative behaviour, and provide ambient feedback. We need to create a space that integrates with the rest of the museum. This is our design brief. Currently several researchers at the Interaction Design Centre, are engaged in concept design, inspired by the material presented above. We have found that the video material has helped us in creating outline scenarios, and storyboards. In the process of defining what kind of added value a technology-enhanced cabinet of curiosities could provide to people, we noticed that the only element currently missing in the process of interaction with the cabinet and its objects is the “physical” one: what if the visitors could handle the objects and explore them directly? Experiencing the exhibit has a physical aspect as well as a reflective one. As museum researchers have noted: “Exhibits ... allow people to see, touch, taste, feel, and hear real things from the real world. ... Visitors devote most of their time to looking, touching, smelling, and listening, not to reading. Visitors tend to be very attentive to objects, and only occasionally attentive to labels.” (Falk & Dierking, 1995, p. 77). As emerged in our series of observations, interaction among visitors, collaborative content discussion and discovery all happen *around* the objects. The current cabinets in the Museum do not provide a way to experience features such as the look and feel of the surface of an object, the light and shadow it presents, the shape, texture, weight, etc. Our scenarios and prototypes are exploring

narratives and progressive unfolding of events, attempting to focus attention on aspects of the artefacts themselves and their context of discovery and use. Space does not permit us to detail our designs here, but we will show some of our prototypes during the Conference presentation.

5 Conclusion

The field studies conducted at the Hunt Museum have provided a useful corpus of material concerning the nature of exhibits, and visitor interaction around these exhibits, that is still under analysis. The elaboration of the “cabinet of curiosities” represents the first prototype we are developing, where we wish to augment these physical cabinets in a variety of ways with new technologies. Outline scenarios include cabinets where people can actually handle replicas of the real objects and experience some of the characteristics of these real objects. Our interest in this scenario has been driven by analyses of visitor engagement with exhibits and their interactions during specific “handling sessions” supervised by museum personnel that we have analysed (see Ciolfi & Bannon, 2002.)

This scenario, in which the objects themselves are envisioned as interfaces through which visitors can make sense of the object, of their history and their multiple relationships and features, poses a challenge for designers. Several projects are underway regarding the design of graspable interfaces and physical icons instead of GUIs (e.g. Ishii & Ullmer, 1997), but usually the object itself is not the locus of information, nor the focus of attention. Rather, objects are essentially tools for interacting with a computer system, and they are intended to act as a physical representation of surface interface elements such as icons and pointers. Thus our approach would be distinct, as we are interested in objects as both material and symbolic devices in their own right, with a history, context of use, etc, both mediating, and being the object of, interaction. Work in the coming months will involve further exploration of a variety of technical devices and platforms that may assist us in achieving some of our objectives for the prototypes, such as RFID tags, use of accelerometers and potentiometers for sensors, projection surfaces, webcam tracking etc., and we will show the results of our design and development work in the Conference presentation.

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