Designing the New Memory Space for Cultural Heritage

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1 Introduction

The museum as one of the most crucial institutions of the modern age is undergoing a transformation under the aegis of new media. As the representation of each cultural object in its habitual cognitive environment becomes the key concept in museum exhibits instead of demonstrating objects under glass showcases in isolated spaces, the search for insights for the new representation methods were directed towards new media . New media achieves this goal mainly by offering non-hierarchic and flexible information structures that create the opportunity for the cultural object to stand in a "space of its own". The new approach does more than bring enriched meaning to the cultural object on show; it also facilitates a productive interaction between user and cultural object – an interaction that bridges both temporal and intercultural distances.

Since interaction is one of the main areas of focus for new media, the experience of the museum visitor primarily considered according to the interface design methods that are used in the presentation of the cultural heritage object. Of these methods, "experience design" is the one that provides the widest application possibilities. This is because experience design, the dominant approach within the field of interface design in recent times, is concerned with more than the mere representation of a frozen visual moment and instead focuses mainly overall user experience.

In the case of the museum audience, an interface design that aims at individual learning through free exploration integrated with a constructivist learning style promises the richest experience for the user. Experience design, its methodology primarily developed within the software design field, needs to be reformulated with a different set of priorities when applied in the museum setting where subjects of past or ethnic objects tend to be the focus. Therefore, designing the user experience according to the original or authentic experience that is woven around the cultural object is the main challenge of this field. At this point Anthropology appears to be one of the most often collaborated disciplines. This is especially the case in the interface design field, where a great deal of knowledge in the applications of ethnographic field methodology to the understanding of user problems and desires has been accumulated, and these same methods are now seen to be used in designing the representation of cultural objects in relation with the cultural codes that are enmeshed around them. Therefore, the reconstitution of the elucidated cultural codes through the analysis of ethnic traditions, religious beliefs, functions, natural determinants and linguistic structures, becomes one of the most crucial stages in the design of the cultural object's representation.

2 A project: Remembrance of Media Past

Remembrance of Media Past[1] is a design research project that was initiated in 2002 in Istanbul Bilgi University Visual Communication Design Department, during the master level

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[1] www.vcdma.net/projects/531.

Interface Design Workshop. In this project, digital media's cultural aspect was put forward in consideration with the current discussions in interface design field and an interface archeology has been applied as a method to analyze old Ottoman manuscripts.

Throughout the project, illuminated manuscripts that are dominant cultural interfaces of the pre-Gutenberg era were taken as visual media archetypes. A comparison is made between illuminated manuscripts and multimedia applications of today in the context of media evolution. For this reason, an interface analysis framework that is primarily applied for digital media applications has been applied to manuscripts. Three manuscripts are selected for an experience design analysis. The findings are used then as premises for a design that implements the interactivity, simulation and multimedia features of today's media.

The "digital manuscripts" appeared at the end are primarily the digital simulations of traditional visual information systems (i.e. maps, miniatures, mechanical drawings) that are designed according to its own era's cultural values and artistic priorities.

3 Applications

Kitab-ul Hiyel

Kitab-ul Hiyel is a book about machines that work with water, written in 1206 by Al Jazari, an irrigation engineer who was employed in the Artuklu Palace in today's southeastern Turkey. The book contains approximately 300 automated devices and their systems including construction and usage information – all illustrated with technical drawings and miniatures of great artistry by Al Jazari himself. [2] These were intended both to make the devices visually understandable and to please the eye.

One of the most important aspects of this book from the interface design perspective is precisely its visualization techniques. Methods like showing the important parts separately in a bigger scale, constructing mechanisms step-by-step from parts to whole manner and cross sectioning are used in this manuscript with great artistic dexterity in order to explain technical information that requires a specialty in nature in a way that can easily be understood by anybody. Another characteristic of this manuscript as an interface archetype is giving an importance not only to mechanisms with their functional structure but also to the outer

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[2] Ebü'l iz ibni ismail ibni Rezzaz Al Jazari - referred to as Al Jazari in short. He lived during the late 12th century and the early 13th century under the Artuklu dynasty that ruled over what today is the southeastern town of Diyarbakir and its surroundings. He served as an irrigation engineer at the palace for 32 years. At the peak of his career, he was the head engineer during three successive Artuklu Sultans. He developed several mechanical devices, far ahead of his time, mainly to aid irrigation. When he grew old, he was commissioned by the sultan to write a book of his knowledge so that it should not be lost but passed on to the future.

layer that creates and enhances the illusion aimed at by the working mechanisms. The fairytale figures of the outermost layers of the mechanisms can be better understood and appreciated as representing yet another aspect of their overall visual design - especially considering that the automata described in the book were also used to entertain the guests in Artuklu Palace.

The main method used for the digital version of Kitab-ul Hiyel is the simulation of the moving mechanical figures that are constructed according to the manuscript. The dynamic state of these devices that could only be imagined by the users' eye movement on the details of the figures by following the order of mechanical cycle in the manuscript media is realized in case of digital media by the animation of the same visual material. The interface elements that provide the interaction during this simulation of manuscript readers' experience was selected from the details of the figures in the manuscript. In this way mechanical parts like tap, plunge, gear, etc. were modified to be the interaction points for users to be able to intervene in the process at different stages in order to provide an opportunity for a close examination of these devices. The animation and sound of water flow - the only external factors during this simulation - were added to strengthen the demonstration of the stages of the mechanical process.

Surname

In the Surname[3] (1582-1583) of Murat III, Nakkas (the painter) Osman has built a documentary of the 55-day long circumcision festival. Although the scene of the festival was represented in a theatre stage manner, the parts of the "décor" were enriched by surprising variations without being held the whole responsibility of belonging to a real place. This is a result of the cultural attitude that was built by that era's Ottoman nakis art against a representation style that tries to create an illusion of reality in the description of objects. Therefore, the structural aspects that would be found in this manuscript from the cinematic narration perspective would reflect a characteristic of a subjective narration as opposed to a documentary that is claiming to be objective. This would not be an individual subjectivity but a collective subjectivity that represents the visual attitude shaped by the visual culture of the era.

In this project, cinematography was used as a means of navigation within the miniature environment. The whole scene was divided into layers considering the iconographic narration of the miniatures and a virtual camera travels around in the 3D layered space, occasionally focusing on sub narratives of the festivities. In these sub narratives, a user/viewer can examine the points of view of figures within the cinematic grammar.

The ultimate product would be an interactive movie where interaction takes place in the scene through figures by a virtual camera so that the different aspects of cinematic perception and language can be used as interface elements.

The Map of Piri Reis

The world map made by Piri Reis[4] in 1513 was one of the most comprehensive and precise Portolan charts of its era. The Portolan method was a visualization technique for mapmaking as well as being a calculation method for navigation. The Piri Reis Map addresses a crucial issue for its being a map of integration, or a collage of many maps, that it encompasses a series of visual representation problem in creating a holistic view of the world by gathering a group of solely mathematical/geographical information. Although it may seem as a purely objective effort, its effect is much wider and more deeper in the sense that the impressions created by the metaphors used by the mapmaker has an effect on constructing the image of the worldview of the user.

The three main information layers that exist in the manuscript are transformed into interactive interfaces in the digital simulation of the Piri Reis Map. These three layers are briefly:

- This is a Portolan atlas, so it is used primarily for navigational purposes. On this level, virtual tools are used to do navigational calculations.
- On the geographic information layer, visual tools like color codes are used to show the islands and dangerous rocks, and the direction of the currents are shown by the orientation of the ships. In this interface, each visualization method is represented with a separate legend.
- Seamen's tales are mostly the irrational aspect of the map. Although these narratives were recounted on earlier voyages, they are indeed mythological descriptions of the seas and lands and unearthly beings seen during these trips.

These layers are also enriched with scripts and figures in the manuscript. In the developed digital interface, the figures and icons are animated and then supported by the same textual explanations.

4   Conclusion

In the representation of tangible cultural objects, there is a surrounding, intangible layer that reflects the cultural context. Without particular attention to this level, any effort to exhibit these objects lacks the peculiar human dimension that is woven together with them. Interface design methods need to be developed around this key concept to provide sound intercultural learning experiences to wide audiences.

First, these methods should be used to analyze the cultural context, and then the cognitive process in the original usage mode needs to be revealed. Afterwards, a design synthesis that considers these background factors should be followed to demonstrate the life around the object via the object itself. Interface design classes with this cultural focus would also help future professionals in the field gain a wider perspective with a deeper understanding of the implications of their design on inter-cultural communications.

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[3] Surname is a literary style that tells the festivities in wedding, birth and circumcision ceremonies in Ottoman Palace. This book is a miniature manuscript based on one of these Surnames.

[4] As well as being an outstanding cartographer and navigator, Piri Reis was an admiral who made his mark on Ottoman naval history. In 1510, Piri Reis began to write his "Kitab-i Bahriye". In 1517 he served as an admiral in the Egyptian campaign of Selim I, and presented the world map, which he had completed in 1513 to the sultan.