HCI ASSIGNMENT-4

Topic - GUI Design and aesthetics - Case study

Source -
Aesthetics in Human-Computer Interaction: Views and Reviews (1)

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INTRODUCTION

Objective - The objective is to understand the meaning of aesthetics, remove confusion and understand the use, applications and possibilities of aesthetics in the context of human computer interaction.

Introduction -

- Interaction with computer addresses many issues such as ergonomics, design, human factors, usability, aesthetics and so on. Interaction includes the main interface with which humans communicate with the computer. Thus it is one of the most potential sectors in computing where aesthetics are applicable.
- In this article, the authors have presented their literature review on how they investigated where and how aesthetics and graphics have been addressed by the Human Computer Interaction (HCI) researchers.
- **Research background** -
  - The research was conducted as part of the SArt project inside the Software Engineering group at the Department of Computer Science in the Norwegian University of Science and Technology.
  - The authors' final objective is to propose, assess, and improve methods, models, and tools for software development in art context while facilitating collaboration with artists. As part of research in SArt they have performed a literature review in order to conceptualize the intersection of software and art .
  - From the review, they have discovered that the intersection involves people from diverse background and interest, for example art critics, software developers, educators and so on. This is also visible in the software dependent art projects that SArt group members have participated.

AESTHETICS AND HCI

Why Aesthetics -

- Human computer interaction started from computing field and is now extending its scope in many other directions by including behavioral science, psychology, sociology and so on.
- But recently ,as computing has expanded its domain from workplace to pervasive and domestic environments, interest in aesthetics for designing is increasing in HCI.
- **Gaver** and **Martin** suggest that the importance of non-instrumental user needs, such as surprise, diversion, or intimacy should be addressed by technology .
- **Jordan** proposed a hierarchy of such needs and claimed that – along with the functionality and usability of a system – different aspects of pleasure are important to enhance the user's interaction with it.

AESTHETICS AND HCI (continued)

Types of aesthetics -

In the context of HCI two types of aesthetics are mentioned - **Classical Aesthetics** and **Expressive Aesthetics**.

- Classical aesthetics refer to traditional notions emphasizing orderly and clear design, and expressive aesthetics to designs using creativity and originality. Study shows that classical aesthetics are perceived more evenly by users whereas expressive aesthetics can vary depending on framing effects or different cultural and contextual stimuli.

In the discussion of aesthetics different kinds of quality dimensions are mentioned such as **Ergonomic, Hedonic, Instrumental** and **Non-instrumental**.

- **Ergonomic quality** comprises quality dimensions that are related to traditional usability, i.e. efficiency and effectiveness .
- **Hedonic quality** comprises quality dimensions with no obvious relation to the task the user wants to accomplish with the system, such as originality, innovativeness, beauty etc.
- **Instrumental Quality** and **Non instrumental Quality** are used in relation to perception of user experience which are basically the same as ergonomic and hedonic qualities.

AESTHETICS IN HCI

1. **Overview**

- Aesthetics come into play in many stages in many ways in HCI. In this section we would like to present the different areas and contexts where aesthetics are mentioned and addressed in our reviewed literature.
- From the review, the authors have identified some of the areas where aesthetics are used in HCI. Some of the key areas that have been identified are:
  - Artifacts design,
  - System design
  - Attractiveness and look and feel of User Interface (UI),
  - Interaction with a system,
  - Usability and user experience,
  - Research methods for HCI.

2 . **Artifact design**

With the recent shift from narrow focus on work to a broader view of interaction industrial designers, communication designers, and newly minted interaction designers all began to play more important roles in the invention and development of new artifacts meant to address a broad set of problems and opportunities.

- **Evolution of artifacts** -
  - Aesthetics are not only an issue during the design of these diverse computing devices/artifacts but also in the evaluation of these devices. After running a survey on heuristic Evaluation match between design of ambient display and environments , the authors have asserted - "The display should be pleasing when it is placed in the intended setting."
- **Ubiquitous Computing** -
  - Areas such as ubiquitous computing, augmented reality, and physical computing have made it evident that the personal computer is just one out of many possible ways in which we can design how humans interact with computers . The design of these devices should be carefully done .
  - For example, when designing an ambient display, one should notice an ambient display because of a change in the data it is presenting and not because its design clashes with its environment.

AESTHETICS IN HCI (continued)

3. **System Design** -

- It refers to the the context of creating new tools or software applications.
- Hedonic quality plays a substantial role in forming users judgment of appeal and it should be explicitly taken into account when designing a software system.

4. **Attractiveness and look and feel of UI** -

- There is already a transition towards aesthetically pleasing interfaces and it will continue as more importance is placed on the aesthetics of a user interface, and as the proper tools are available to interface designers for creating such interfaces.
- Aesthetic factors beyond usefulness and traditional usability are increasingly recognized as contributing to the overall success of a product or system.

AESTHETICS IN HCI (continued)

5. **Interacting with a system -**

- ○ Aesthetics and interaction are interwoven concepts, rather than separate entities . In aesthetics of interaction the emphasis shifts from an aesthetically controlled appearance to an aesthetically controlled interaction, of which appearance is a part.

- ○ Aesthetics of interaction moves the focus from ease of use to enjoyment of the experience .

- ○ Mixed Reality and Virtual Reality - Design for mixed reality or virtual reality devices are driven by many contextual requirements of which aesthetics is an important part . Artistic association is also important in virtual reality systems,

- ○ Interactive Art - Interactive art is a new kind of art that is highly dependent on technology and user interaction. Often these kinds of artworks are illustrations of interdisciplinary collaboration between research, design, craft and art and involve interaction with the user in a new or innovative way.

. 6. **Usability and User experience -**

- The use of aesthetics has not always been warmly accepted by HCI researchers. In fact, it is often seen by many professionals as inversely proportional to easiness of use or usability. There has been continuous debate on conflicting impact of usability and aesthetics in HCI.
- However, later many researchers worked on the positive impact of aesthetics. Now empirical evidence shows correlations between the perceived aesthetic quality of a system's user interface and overall user-satisfaction leading to claims that aesthetic design can be a more important influence on users' preference than traditional usability.

7. **HCI Research Methods -**

- HCI has emerged as a design-oriented field of research, directed at large towards innovation, design, and construction of new kinds of information and interaction technology.
- Three accounts have been named regarding the design theory such as the **conservative account**, the **romantic account**, and the **pragmatic account**, of which pragmatic account is the one that considers the issues such as creativity, craft, aesthetics.
- Thus new methods have been developed in HCI such as cultural probes whose purpose is to inspire the creation of appropriate pleasurable even provocative designs.

DISCUSSIONS AND CONCLUSIONS

The outcome of this paper reveals a picture of the relationship between aesthetics and HCI.

- The consideration of aesthetics is visible in many sectors of HCI, from artifact design to research methods for collecting user data or evaluating artifacts. What we see from the review is that the most common use of aesthetics in HCI refers to visual aesthetics or expressive aesthetics.

- The conflict with usability also accounts in case of expressive aesthetics. We believe that the contradiction arose since we referred to only visual or expressive aesthetics and compared its effects with usability.

- But aesthetics as a philosophy is a wide concept rather than only the visual or static beauty of interfaces. It refers to the feelings associated with the use and interaction with a system.

- Proper aesthetics of interaction should define where and how expressive aesthetics will be included and how much they will act aligned with usability, and overall user experience of the user affecting their emotion positively.

THANK YOU

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