

The Design of Aesthetic Interaction: Towards a Graceful Interaction Framework

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ABSTRACT

The growth of techno-dependency and the proliferation of creative engagement have spurred research towards the creation of human values through digital engagement. Against the backdrop of technology evolution, research on human computer interaction (HCI) has begun to explore dimensions of human value derived from the aesthetics of interaction. This desire for beauty aligns to the Maslow's hierarchy of human needs which acknowledge that humans needs aesthetic satisfaction to realize self-actualization. However in the past, the main focus of aesthetics in HCI research was on visual beauty of the user interface. To further explore new forms and perspective of aesthetics of interaction, we present the notion of graceful interaction. In this paper, we present the theoretical understanding derived from the multidisciplinary areas of human basic movement, aesthetics and interaction design into a graceful interaction phenomenon of interactive interface as an attempt to build the foundations for the graceful interaction framework. We also argue that the aesthetics of human movement can be applied to the online environment and illustrates how the movement paradigm and can be aligned and mapped into user experience interaction design. Based on these theoretical understandings, several theoretical propositions are formed to describe the aesthetics dimensions of graceful interaction.

Categories and Subject Descriptors

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

Miscellaneous.

General Terms

Design, Human Factors, Theory

Keywords

Graceful interaction, aesthetic interaction, movement, HCI

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1. INTRODUCTION

Past research on human computer interaction (HCI) was mainly focused on usability considerations [33, 20, 21, 28, 10]. HCI researchers and practitioners studied objective performance elements such as time to learn, error rate and time to complete a task [23] while overlooking other dimension of the interaction design. One glaring area that has been overlook in the past but currently gaining attention is on the aesthetics of interaction. The new interest is inspired by the desire to enrich the interaction between the human and the computer and pushes research to a new horizon by looking inwards into aspects of affective and aesthetics human needs. However, the current literature on aesthetics in HCI were mostly referring to technology and social science sources rather than humanistic sources including philosophical aesthetics, art history and literary theory and work on aesthetics in HCI is restricted to visual beauty of the interface [3]. Aesthetics of interaction has now emerged as new area of research in the field of HCI. To further enrich the knowledge on aesthetics of interaction, we introduce the notion of graceful interaction within aesthetic interaction. In this paper we elaborate on the theoretical perspective underlying graceful inter action and argue for the notion of graceful interaction to initiate the development of the graceful interaction framework for interaction design. In the attempt, key factors influencing interaction design in the context of interactive interface are considered and theories of human movement were reviewed. In the next section we present the relevant theoretical grounding to support the notion of graceful interaction.

2. AESTHETIC IN HUMAN COMPUTER INTERACTION

The growing interest of the HCI research community in producing visually appealing design has projected the importance of the roles affect and emotion that was once overshadowed by the intense concentration on cognitive capabilities [35]. We look into other design discipline such as architecture and found that aesthetics is an important requirement. The first known theorist in design, Vitruvius from the 1st century BC, argued that architecture must satisfy three basic requirements, *firmitas* (strength), *utilitas* (utility) and *venustas* (beauty). *Firmitas* covers the field of static, construction and materials, *utilitas* covers the use of the buildings and their functioning and *venustas* fulfill the aesthetic requirements. The Vitruvius theory parallels with the