Chapter 8

A Theoretical Model, Including User–Experience, Aesthetics, and Psychology, in the 3D Design Process

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ABSTRACT

This paper presents a theoretical model based on a formula that combines three theoretical factors which – it is argued - significantly contribute to the process of designing 3D avatars. These factors are aesthetics, user experience and psychology. The purpose of the paper is to put forward new ideas on what informs the design process of 3D avatars. An additional reason of the formulation and the proposal of a visualization through a formula, is to simplify the procedure of 3D avatars design while at the same time comprehending the influence of aesthetics, user experience and psychology. The paper provides an overview of existing research on aesthetics, user experience and psychology and how these can inform 3D avatars design procedure. As all theoretical models, this one too needs to be tested further so we propose a set of future research questions based on the model.

INTRODUCTION

There is limited research on what informs the process of users designing their three-dimensional (3D) representations also known as avatars, and what the influences are during the design process. In this paper, three of the main factors, which are interrelated, are analyzed to provide a theoretical model that informs the design process. These factors are aesthetics, psychology and user experience. The common element that connects all of these areas is Human Computer Interaction (HCI) and this is shown through the following formula:

HCI (Aesthetics + Psychology + User Experience) =

HCI*Aesthetics + HCI * Psychology + HCI* User experience =

= Design process of 3D Avatars

This paper presents a theoretical model that explores the component parts of the above formula. In each area of interest there is relevant and sufficient research. To a large extent their connections have not been explored yet. Therefore, exploring further this field can provide a theoretical model that can contribute to the related literature. It is the objective of this paper to explore these three components and highlight their relationship so as to develop a better understanding of the factors that influence the design of avatars.

3D environments are used extensively in the last two decades, and the factor that makes them popular and acceptable is the freedom that users feel from the moment of the first interaction in virtual worlds. One key point within virtual worlds is that the user feels free to interact, with no rules, and with a profile that often attempts to replicate real life, while providing for additional user benefits (Castronova, 2003).

The initial feeling of freedom is derived from the user's representation, called "3D character" or "avatar". This comprises various illustrations of the user, which are utilized to introduce their selves through 3D worlds, in order to navigate and interact within them. As Ducheneaut, Wen, Yee & Wadley (2009) pinpoint, users have the possibility through their avatars to socialize, communicate, collaborate, learn, and work with other participants in the 3D world. In addition, we also need to consider that in some 3D environments (e.g. games) there are standard characters that users are compelled to select, without flexibility to make any changes. This is in contrast with other virtual spaces like Second Life that allows users to design their 3D external appearance. Subsequently, the main aspect that plays important role in designing the external appearance is the subjective opinion about aesthetics, user-experience, and psychology; in general, the visual self sense.

Aesthetics is an aspect that intervenes to this process and is connected directly with perception influencing the creation of a 3D avatar. The individual's judgment about aesthetics, beauty, or what is pleasing is based upon personal, social and cultural background (user – experience). At this point, it is worth mentioning that the way an individual depicts his/her 3D self, has direct impact on the behavior (role) of the avatar and the user (Ducheneaut, 2009).

Another major factor in the procedure of customizing a 3D character as a body image is physical appearance. This is connected directly with aesthetics and psychology, and is influenced by the user-experience. The perception of external appearance is affected by the subjective experiences, a phenomenon that occurs in all kinds of interactions. It is therefore an essential tool, reinforcing the design of 3D representations and its impact, as represented on an avatar and to the user-owner respectively.

User experience is the key point, which determines the individual's opinion about themselves and their physical appearance. User experience may be conceptualized as the sense of how someone perceives and interprets something that they are surrounded by, and determining the next interaction. Therefore, user experience places emphasis on the subjective positive aspect of human – computer interaction, which is connected with the definition of usability and user satisfaction. User experience encompasses more than just satisfaction.

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