Chapter 10
New Ways of Seeing:
Evaluating Interactive User Experiences in Virtual Art Galleries

Matthew Anderson
State University of New York – Oswego, USA

Damian Schofield
State University of New York – Oswego, USA

Lisa Dethridge
RMIT University, Australia

ABSTRACT

As computer-driven display technology becomes more powerful and accessible, the online, virtual art gallery may provide a new platform for artists to exhibit their work. Virtual exhibits may afford opportunities for both the artist and the patron to display, view and perhaps purchase various digital art forms. The aim of this paper is to examine user interaction with digital artworks inside a virtual gallery space. We use a range of criteria to describe conditions for both the designer and the user of such a virtual display system. The paper describes a number of experiments where users interacted with a virtual art gallery and were then extensively interviewed and surveyed. Measures of what Manovich (2002) describes as 'immersion' and what Slater et al (1994) would term 'presence' are observed in relation to the user experience. The gallery is a three-dimensional graphic digital construction built in Second Life. The experiment aimed to describe and delineate the user's perception and navigation of space and compares their perception of art objects in the virtual environment to digital objects in a 'real world' gallery. The data collected in this study provide the basis for a discussion of how users may perceive and navigate virtual objects and spaces in an online environment such as a game or art gallery. The results may be of use to those designing interactive three-dimensional environments.

INTRODUCTION

Over the centuries, visual artistic expression has captured emotion and affected human perception. This has led to the development of scientific principles of vision and color which began with studies of color in the 14th century, and continued with research into use of optics in art in the 15th century. Scientific understanding of fabrication and the assembly-line led to the mass-reproduction of colored objects during the industrial revolution. Advances in technology and physics sparked new forms of art such as impressionism and neo-impressionism. Artists such as Van Gogh (1853-1890) and Paul Signac (1863-1935) used modern concepts of color and vision to express more abstact views of life and nature. In the twentieth century modernist movement, the paradigm of political, mythological and spirtual abstraction in art became meshed with the power of the imagination. The meaning of art was recognized as one that is shared between the viewer and the artist (Douma, 2006).

In the 1960's digital processing allowed for the computer mediation of human imagination and the creation of computer-generated visual art. The first Graphical User Interface (GUI) was created by the Xerox corporation in the 1970's. During the 1980's digital art evolved as artists began to create artwork using computer software. This practice would conceptually change the significance of the art itself, as microchips and processors were now processing the artwork. As Kuspit (2005) states: "Essentially, the digital artwork becomes a second manifestation... of the abstract code, which becomes the primary vehicle for creativity."

Humans have traditionally used their physical senses in proximity to the painting, drawing or sculpture to produce the visual-haptic-gestural feedback that allows them to experience the work of art. These days, artists present and distribute their work in many new ways using online virtual spaces. They are now able to reproduce, rescale and reproduce their artwork digitally. The viewer or purchaser of such art also operates in a virtual environment to access the art and perhaps download it and create their own copy. There may be cultural and social advantages to replicating and disseminating artwork over the Internet. No longer are paintings secluded in museums and prestigious art galleries which are often the domain of the educated classes. With the advent of digital simulations and computer driven technology, artists may create new forms of interaction with the audience.

In this study, participants experienced works of art using diverse display technologies including real and virtual environments. Participants compared their perception of art displayed within a virtual gallery environment to art viewed directly on a computer screen (using PowerPoint). We interviewed participants to examine their responses to the various display systems.

This research asks what happens to this feedback when the artwork is reproduced or displayed in a three-dimensional virtual environment? How doe this viewing environment effect the physical sensation of viewing an artwork? What effect may the use of totally virtual reproduction have on the precision and scale of an artwork? Can these dimensions be manipulated differently than an artist could manage in real life?

The use of three-dimensional graphic tools for displaying visual art is evolving as an art form in itself. Virtual environments allow users to immerse themselves and engage in expression and creativity. Such new forms of digital media may ultimately traverse traditional ideas of visual communication and lead to new and diverse models of conceptual artwork (Popper, 2007).

This study focuses particularly on the three-dimensional graphic (3D) environment allowed by shared online spaces. Second life (www.secondlife.com) is a Massive Multi-player Online (MMO) 3D graphic environment that was launched in 2003. The software is downloaded to the user's computer connecting

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