

Chapter 90

Understanding Gender Differences in Media Perceptions of Hedonic Systems: A Comparison of 2D versus 3D Media

Fiona Fui-Hoon Nah

Missouri University of Science and Technology, USA

Brenda Eschenbrenner

University of Nebraska at Kearney, USA

ABSTRACT

As technology improves in hedonic and affective dimensions, women's interests in technology may increase. In this research, the authors are interested in understanding gender differences in media perceptions of hedonic systems. They draw upon Hunter-Gatherer Theory of Spatial Gender Differences and Jung's Theory of Psychological Types on Gender Differences to hypothesize differences in men's and women's perceptions of skill, challenge, telepresence, and satisfaction with online experiences in 2D versus 3D hedonic environments. The results of their experiment indicate that even though women perceive lower skill levels and greater challenge in using 2D and 3D hedonic systems than men, women's perceived sense of telepresence is higher than men in both 2D and 3D hedonic environments. In addition, women are more satisfied with 2D and 3D hedonic experiences than men. The authors' findings suggest that consistent with Jung's Theory of Psychological Types on Gender Differences, women's perceptions of hedonic systems are more positive than men and, hence, making technology intuitive, enjoyable, and fun to use can potentially increase women's participation in the information and communication technology workforce. Additionally, given that women perceive more challenge and skill issues in using technology but are more favorable toward hedonic systems than men, the authors suggest that the use of hedonic systems to support K-12 education systems, such as computer or serious gaming for education, can generate females' interests in technology at an early age.

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INTRODUCTION

The impact of gender differences has been widely studied and acknowledged in the Information Systems (IS) literature (e.g., Gefen & Straub, 1997; Hubona & Shirah, 2006; Nicovich et al., 2005; Riedl et al., 2010). However, what is not clear is how men and women may differ in their perceptions of hedonic systems and how these perceptions may differ in 2D versus 3D hedonic environments. Prior research has identified differences in cognitive spatial abilities between men and women (e.g., Hubona & Shirah, 2006; Linn & Petersen, 1985; Miller & Halpern, 2014; Voyer et al., 1995). The experimental findings by Hubona and Shirah (2006) indicate that gender differences do exist in the use of the 3D environment, such as men outperforming women in matching and positioning objects, but females were more accurate at resizing objects. Considering the nature of the 3D environment, gender differences may exist in comparison to the 2D environment. However, we did not find any prior studies in the IS literature that have examined or studied such differences between 2D and 3D environments. In particular, we are interested in examining gender differences in perceptions of 2D versus 3D hedonic environments.

Therefore, our research question is: Do men and women perceive 2D and 3D hedonic environments differently? Answering this question may provide important insights into gender differences and their preferences for hedonic systems. For instance, perceptions in skill, challenge, telepresence, and satisfaction with online experience may provide for greater disparity in men and women in a 3D hedonic environment than in a 2D hedonic environment. With an increased understanding of gender differences in the perceptions of such environments, researchers and designers of such environments could become more attuned to any gender disparities when they design activities, tasks, or user interfaces in these environments. Gender differences can also be taken into consideration in promoting Information and Communication Technology (ICT) to the general public and, in particular, to females due to their underrepresentation in the ICT workforce.

Background

Evolutionary psychology argues that early gender roles have affected the development of men and women, which has led to gender differences in many contexts, including differences in perceptions, preferences, and performance. Various theories have been used to explain such differences (Trauth, 2013). One such theory is Hunter-Gatherer theory (Silverman & Eals, 1992).

Hunter-Gatherer theory focuses on the characteristics of men and women in prehistoric times, and suggests that these characteristics are an outcome of evolution which arises from a clear division of labor and differentiated roles that occurred (Silverman & Eals, 1992). More specifically, the theory suggests that men possess characteristics which aid them in functioning primarily as hunters, while women acquire characteristics that help them to gather food and raise their children. Therefore, men relied on spatial and cognitive abilities to hunt, whereas women relied on emotional, perceptual abilities to nurture children and obtain food. Hence, Hunter-Gatherer theory acknowledges that cognitive and spatial differences between men and women have arisen as part of evolutionary development.

Linn and Petersen (1985) conducted a meta-analysis to examine gender differences in spatial abilities. They found large gender differences in spatial abilities favoring men, small gender differences in spatial perception favoring men, and no difference in spatial visualization between men and women. Hyde's (1981) meta-analysis of gender differences in mental abilities also suggests a slight advantage for boys in both quantitative (math) abilities and spatial abilities, but girls have a slight verbal advantage over boys.

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