

Chapter 72

The Neurocognitive and Evolutionary Bases of Sex Differences in Website Design Preferences: Recommendations for Marketing Managers

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INTRODUCTION

Marketing managers habitually use sex as a form of segmentation since it satisfies several requirements for efficient implementation including profitability, identifiability, accessibility, and measurability (Darley & Smith, 1995). Nevertheless, sex differences in marketing remain under-researched and continue to be a source of confusion for managers (Hupfer, 2002). Sex differences in cognitive processing are particularly relevant to e-business managers given that online consumers must process various types of spatial and perceptual information while navigating online. Despite the large body of evidence documenting consistent sex differences in cognition (Kimura, 2004), there is a paucity of research

exploring how male and female consumers respond differently to various website design aspects (Cyr & Bonanni, 2005; Moss, Gunn, & Heller, 2006; Simon, 2001). Moreover, the few studies that have examined sex differences in online preferences were not grounded in any consistent theoretical framework.

The main objective of this paper is to examine how sex differences in the processing of spatial and perceptual information lead to differential preferences in website design for men and women. We argue that sex differences in website design preferences are best understood within a framework based on both recent findings in neurocognitive psychology and on evolutionary theory (as originally reported in Stenstrom, Stenstrom, Saad, & Cheikhrouhou, 2008). Such a framework would enable e-business managers to tailor the design of their websites ac-

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ording to the sex ratio of their clientele. In other words, depending on whether a website is equally visited by both sexes, or largely visited by only one of the two sexes, will determine the design features of the site in question. The structure of this chapter is as follows. First, the latest cognitive and neuropsychological evidence relating to sex differences in spatial and perceptual processing are explored, including a discussion of the particular selective pressures that have led to their emergence. This section also includes an examination of how these sex differences are likely to translate into the corresponding sex differences in the online processing of information. Next, website design recommendations for e-business managers are put forth, followed by a discussion of possible future research avenues.

BACKGROUND

Researchers have highlighted the importance of website design as an antecedent of e-satisfaction (Evanschitzky, Iyer, Hessea, & Ahlerta, 2004; Szymanski & Hise, 2000) and trust (Cho, 2006). Yet, few papers have investigated how various website design aspects are differentially appreciated by men and women (Cyr & Bonanni, 2005; Simon, 2001), and have done so without any consistent theoretical grounding. Our framework is based on the evolutionary underpinnings of sex differences in cognition, these being founded on the differential roles assumed by men and women throughout our evolutionary history. Specifically, whereas men predominantly hunted, women primarily gathered. This division of labor exerted a sex-specific selective pressure on various aspects of human cognition, leading to male cognitive abilities specialized for hunting and female cognitive abilities specialized for gathering (Alexander, 2003; Geary 1995; New, Krasnow, Truxaw, & Gaulin, 2007; Silverman & Eals, 1992). In the ensuing section, sex differences in spatial and perceptual processing are reviewed in light of the

evolutionary forces that led to their development. In addition, the findings from the few studies that have investigated how men and women process online information differently are discussed within the context of our proposed framework.

SEX DIFFERENCES IN COGNITIVE PROCESSING AND WEBSITE DESIGN PREFERENCES

Spatial Processing

Sex differences in the processing of spatial information have been studied widely, particularly with regards to navigation, object location, and spatial rotation. It has been suggested that men evolved a large-scale, orientation-based (i.e., Euclidean) navigational style due to the fact that hunting required the tracking of animals over novel expansive terrain while maintaining one's spatial orientation in order to find a direct route back home. In contrast, women are believed to have evolved a short-scale, landmark-based (i.e., topological) navigational style given that gathering necessitated the collection of various fruits and plants in relatively close proximity to home (Choi & Silverman, 1996; Silverman & Eals, 1992). Numerous studies have demonstrated sex differences in navigational styles and abilities that are in line with the notion that males and females have inherited sexually dimorphic navigational propensities. When completing navigational tasks or when providing directions, women rely mainly on landmarks, whereas men focus more on Euclidean properties of the environment (Dabbs, Chang, Strong, & Milun, 1998; Galea & Kimura, 1993; Saucier et al., 2002). Men are more proficient than women in route-learning tasks in virtual three-dimensional mazes in terms of time efficiency and errors committed (Moffat, Hampson & Hatzipantelis, 1998), as well as accuracy in pointing in the direction of the maze's starting point (Lawton & Morrin, 1999). The male advantage in navigation

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