



Sharing experiences through awareness systems in the home

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Abstract

In the current paper we hypothesize that providing peripheral awareness information to remotely located but socially close individuals will yield affective user benefits. An experiment in a controlled home-like environment was conducted to investigate the effects of providing different levels of peripheral awareness information on these affective benefits. In the experiment peripheral awareness aimed to support groups of friends to jointly watch a soccer match at remote locations. The experiment has shown that providing awareness information increases the social presence and the group attraction felt by individuals towards their remote partners. The experiment has provided concrete quantitative and qualitative evidence for the hypothesized benefits of supporting primary relationships through awareness systems and of the relevance of social presence as a requirement in the design of peripheral awareness displays.

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1. Introduction

In this paper we examine the use of communication technologies in a home context, when they support the sharing of contemporaneous activities of remote individuals,

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as opposed to when the communication itself is the primary activity these individuals engage in. More particularly, we try to explore situations where communication is established between individuals who know each other, and where the communication medium will occupy the periphery of their attention and can easily be attended to or ignored when appropriate. The aspiration of this approach is that while individuals engage in some other activity, this background communication may lead to them sharing experiences in a way that would be comparable to enjoying social activities requiring physical collocation of people, such as jointly watching a televised football match in the pub. The research presented here set out to create precisely such a context and to assess what benefits people perceive from this type of communication. This scenario reflects a trend towards the increasing use of communication technologies for recreational or social purposes outside the work context. Further, it aspires to adhere to the vision of calm computing, where technology does not disrupt our daily lives and demand our constant attention, but stays at the background, readily and easily available when people wish to heed attention to it (Weiser and Brown, 1996).

A rich variety of solutions for supporting peripheral awareness of another person or group of people have been proposed in the literature. Examples that target the home environment include the Presence projects (Gaver and Dunne, 1999), the Casablanca project (Hindus et al., 2001), and the photo-collage for elderly and their grandchildren, discussed by Markopoulos et al. (2003). In such works, potential affective benefits of awareness systems are hypothesized, yet little is known about actual benefits resulting from the use of such systems. With few exceptions, e.g., the ASTRA system for connecting related households (Markopoulos et al., 2004), the social presence experienced through the use of awareness systems has not been assessed. Further, the impact of awareness information on the group relation is not yet known. The present research aims to provide an experimental assessment of social presence and of the hypothesized benefits upon interpersonal relations, pertaining to awareness systems for the domestic environment.

In the following sections we shall introduce some of the psychological constructs that enter this vision. Section 2 discusses social presence. Section 3 discusses affective benefits and especially the notion of group attraction. Section 4 describes our empirical study; its results are presented in Section 5 and a more general discussion and conclusions are presented in Sections 6 and 7.

2. Social presence

The concept of social presence has been introduced by Short et al. (1976) as a means to characterise the subjective experience of using a telecommunication medium, with respect to how close it can emulate face-to-face contacts. Social presence can be defined as ‘the sensation of being together’ (and communicating) with someone (IJsselsteijn et al., 2001). Biocca and Harms (2002) have recently made significant advances in developing a more comprehensive theory of social presence. In line with most other definitions, they define social presence as a ‘sense of being with another in a mediated environment’. They continue their shorthand definition by stating that ‘social presence is the moment-to-moment

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